LIN112
INTRODUCTION TO
LINGUISTICS II

MODULE 1 LEVELS OF LINGUISTIC STUDY

UNIT 1 PHONETICS I

CONTENTS

1.0 INTRODUCTION

This module introduces you to the major branches of linguistic study sometimes referred to as macrolinguistics. All the levels are related in that each level builds on the output of the previous level from the production of sound units to the sentence. Units 1 and 2 address the first level of linguistic study, phonetics by which sound segments of languages are identified. In unit 3, we will discuss the second level, phonology which allows us to observe how sounds are combined and organised to convey meaning. In unit 4, we will introduce you to the third level, of linguistic study which is morphology which enable us to observe how words are

structured. Unit 5 will focus on syntax, the study of how words are organised into sentences that convey meaning, and in unit 6, we will introduce you to the field of semantics, the study of a linguistic meaning.

You will recall that in part 1 of this course, you were introduced to phonetics as a level of language study and as a branch of linguistics. In that brief introduction, phonetics was defined as the study of how speech sounds are produced, perceived and transmitted through air. You were also told that there are three branches of phonetics, namely acoustic, auditory, and articulatory phonetics. In the first unit of this course, we will examine Phonetics as a linguistic field of study through which we study all speech sounds known to be used in languages across the world. Although your study will cover sounds in all languages in general, focus will be on the sounds of Nigerian languages and English.

2.0 OBJECTIVES

At the end of this unit you should be able to:

- define and explain phonetics
- identify organs of speech and the sounds they produce
- explain the role of air stream mechanisms in sound production
- describe the process of voicing
- transcribe sounds using phonetic symbols
- identify sounds on the IPA chart and
- describe consonants according to their production parameters.

3.0 MAIN CONTENTS

3.1 Definition and Branches of Phonetics

Phonetics is one of the branches of linguistics. It is concerned with describing the physical properties and production of speech sounds that occur in languages of the world. When we speak, it is usually one continuous string of sounds. How then do we recognise speech sounds? How do we determine the sounds and how many sounds are there in any language? We can identify speech sounds when we divide a string of sounds into bits known as segments, hence **sound segments.** For example, as a speaker of English, you know that the word 'cap' has three segments 'c', 'a', and 'p'. When each sound is substituted with another in a frame such as in a word, it causes a change in meaning. For example, 'cap' becomes 'sap' when 'c' is replaced with 's'; 'cap' becomes 'cup' when 'a' is replaced with 'u'; and 'cap' becomes 'cab' when 'p' is replaced with 'b'. The words 'sap', 'cup', and 'cab' all have different meanings in English. By so doing, a phonetic study provides an inventory of sounds of a language.

A phonetic study also provides information on how the sounds of a language are made as well as their physical properties. Not every speech sound that can be produced occurs in every language. This means that the inventory of English sounds for example, will show that the sound [tʃ] occurs but the sound [kp] does not occur in English.

There are three main branches in the field of phonetics namely, auditory, articulatory and acoustic phonetics. Auditory phonetics is the study of how listeners perceive sounds; articulatory phonetics focuses on how speech sounds are articulated or produced while acoustic phonetics is the study of the physical properties of the sounds that are produced. Our focus in this unit however, will be on articulatory phonetics.

SELF ASSESSMENT EXERCISE 1

1. The inventory of sounds in a language can be derived through a phonetic study. **True/False**
2. Articulatory phonetics is the study of how listeners perceive sounds. **True/False**

3.2 Phonetics and Orthography

In languages that have had a long tradition and history of writing there is usually no one to one correspondence between how sounds are pronounced and how they are written or spelt. In English for example, different letters of the alphabet can represent same sound e.g. 'k' as in 'kite' and 'c' as in 'catch'. The phonetic representation of the sound in both words is [k]. Different sounds can also be represented by the same letter of the alphabet e.g. [kɔl] 'c all' and [dæd] 'dad'. In other words, there are many inconsistencies in spelling of English words. However, for languages which have a more recent history of writing such as Nigerian languages, the correspondence is closer. That is, letters of alphabet of Nigerian languages are mostly closer to the way the sounds that they represent are pronounced. For example,

[ɔkɔ] ọkọ 'husband' (Yoruba)
[áfɔ] áfọ 'stomach' (Igbo)
[gwómà] goma 'ten' (Hausa)
[ðɔ] ghọ 'entertain' (Urhobo)

You must have observed that the symbols used to represent sounds in the words in square brackets above are different from the letters of the alphabet. In phonetic study, each distinct sound has been assigned a distinct symbol to represent it. This makes for a one to one correspondence between a sound and the phonetic symbol representing it. An inventory of phonetic symbols representing the sounds in all languages was developed by the International Phonetic Association (IPA). The symbols are the phonetic alphabet and are used across languages to represent each distinct sound. For example, the phonetic alphabet for the sound 'sh' is represented by [ʃ] in phonetic inventory of every language where it occurs.

When a word is written using phonetic symbols, it is called **phonetic transcription**. The square brackets [ ] around a phonetic transcription distinguish it from orthographic spelling. You will be introduced to the phonetic consonant and vowel charts in Figures 3 in this unit and Figure 2 in unit 2. Let us now talk about how these sounds are produced.

SELF ASSESSMENT EXERCISE 2

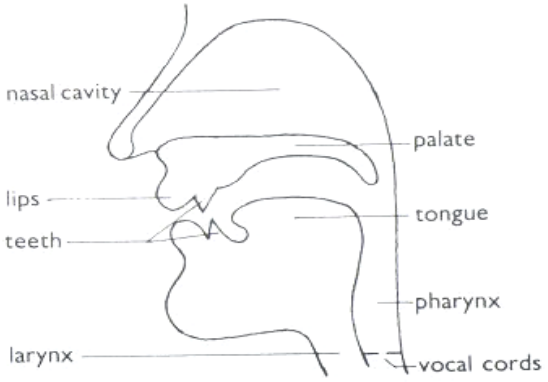
1. There is a closer one to one correspondence between the symbols and the sounds they represent in Nigerian languages than in English.
   True/False
2. Phonetic transcription refers to writing using phonetic symbols.
   True/False

3.3 Articulatory Phonetics: Production of Speech Sounds

3.3.1 Organs of Speech

What is articulation? The production of sound involves the movement of air from the lungs through the opening of the **vocal cords** called the **glottis**, up into the throat and out through the mouth or nose. The vocal cords and glottis is found in the **larynx** also known as the 'voice box'. The tube that runs from the lungs through the throat up into the mouth area is called the **pharynx**. The oral cavity is the mouth area and it houses several 'articulators' such as the **alveolar ridge**, the **tongue**, the **teeth**, and the **lips**. There is a junction from the throat that veers off into the **oral cavity,** and further up to the **soft and hard palate** (velum) are located; and which leads to the **nasal cavity**. Both the oral and nasal cavity with its articulators make up the **vocal tract**. What makes the difference between sounds are the different articulators and the shape they take in producing them. The diagram below illustrates the human head seen sideways. You will need to identify the various organs which we have described.

Fig.1: Organs of speech



Source: O'Connor, 2000

3.3.2 Airstream Mechanisms and Voicing

You remember we said that sounds are produced by air moving through the vocal tract. Most sounds in languages of the world are produced by air being pushed out of the lungs through the vocal tract.

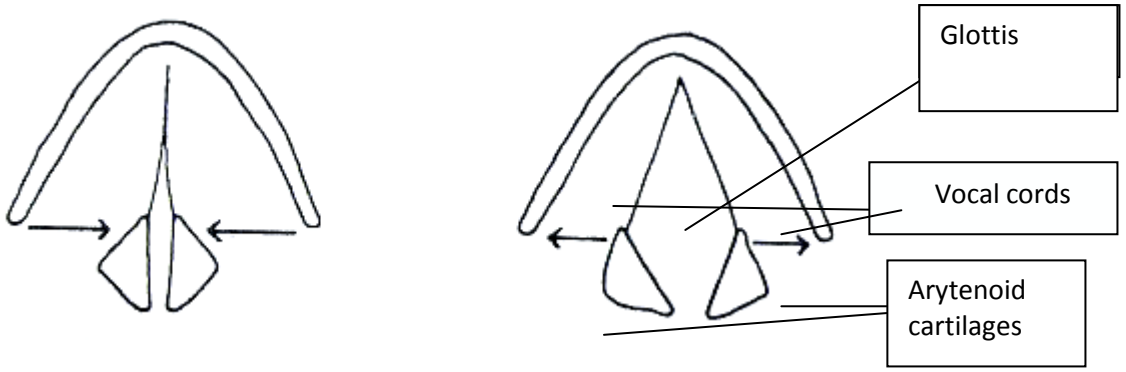
There are four types of mechanisms which describe the movement of air through the lungs. The first that is used by most languages of the world is the **pulmonic egressive airstream mechanism**. The action of air coming from the lungs is called **pulmonic** and the action of pushing out of air is referred to as **egressive**. English sounds are produced by a pulmonic egressive airstream mechanism. A second type of mechanism is that which produces **ejective** sounds. They are produced by a closed glottis forcing air pressure in the mouth and a sharp sound is produced when the air is released suddenly. Ejectives are found in many American Indian and African languages such as Hausa, Nama in Namibia, Sandawe in Tanzania, and Amharic in Ethiopia.

In contrast to the first two mechanisms, the third and fourth mechanisms both produce **ingressive** sounds. The third mechanism produces **clicks** by air being sucked into the mouth. Clicks are a common feature of Southern Bantu languages like Xhosa and Zulu, and other languages spoken by the Bushmen and Khoikhoi (Fromkin et al, 2003). The fourth mechanism produces **implosive** sounds when air is drawn from the mouth into the throat. Implosive sounds are found in American -Indian, African, Indian, and Pakistani languages.

Voicing

Airflow moving in and out of the lungs can be likened to what happens as you breathe. When you breathe in, you take air in into your lungs and when you breathe out, air moves out of your lungs. The air passes from your lungs into the windpipe up your throat and through an opening in your throat called the glottis. The glottis is a triangular shaped organ made of a tissue called vocal cords (also called folds or lips). The state of the glottis which is the opening between the vocal cords is responsible for the voicing of sounds. When the vocal cords are apart, the glottis is Open and when the vocal cords are together the glottis is closed.

Figure 2: Front view of the Glottis



Glottis closed Glottis open

Source: adapted from Roach, 2003

When you articulate a sound like [b] air comes from the lungs through the vocal cords which will be together. Because the vocal cords are together, the air causes the cords to vibrate as it tries to pass through thus producing voicing as the air passes through and into the oral cavity where the articulators, in this case the lips are together and suddenly open to release a burst of air. If you place your hand on your throat (adam's apple) as you produce the sound, you will feel the vibration. In contrast, the vocal cords do not vibrate during the production of [p] because the vocal cords are apart and so air passes through with no vibration.

SELF ASSESSMENT EXERCISE 3

What is the main difference between egressive and ejective sounds on one hand and ingressive and implosive sounds on the other hand?

Which of the airstream mechanisms is used to produce sounds in your language?

3.4 Sound Segments

All sound segments in languages of the world fall into two major categories, consonants and vowels. The main distinction between the two categories is that consonants are produced with obstruction in air coming from the lungs, while for vowels there is relatively little or no obstruction of air. In the sections that follow, we shall review and describe the consonant and vowel sounds in English and Nigerian languages according to the articulators that participate in their production.

3.4.1 Consonants

The phonetic chart provided below shows the phonetic symbols of sounds in English and Nigerian languages:

Figure 3: International Phonetic Alphabet (IPA).

	Bilabial	**Labiodental**	**Dental**	**Alveolar**	**Post-Aveolar**	**Palatal**	**Velar**	**Labio Velar**	**Labialised Velar**	**Glottal**
Stop/ Plosive	P b			t d		c ɟ	k g	Kp gb	Kw gw	ʔ
Implosive	ɓ		ɗ							
Ejective				ʃ			ƙ			
Nasal	m			n		ɲ	ŋ	ŋm	ŋw	
Trill				r						
Flap/Tap				ɾ						
Fricative	⊖ β	f v	θ ð	s z	ʃ ʒ		x ɣ			h
Affricate					ʧ ʤ					
Approximant						j	w			
Lateral Approximant		j		l						

Source: adapted from Yusuf, 2007

The above chart shows consonants in English and Nigerian languages. Three parameters are used to describe how consonants are formed. They are i) **place of articulation,** ii) **manner of articulation,** and iii) **voicing.** Place of articulation describes where the vocal tract is produced in the vocal tract and the articulators or organs of speech used in producing the sound. Consonants are produced at different points in the vocal tract. On the chart, place of articulation is shown along the vertical axis. Manner of articulation describes how the sounds are articulated. This has to do with the type of obstruction to the airflow. On the chart, manner of articulation is along the horizontal axis. Voicing as explained earlier, describes the state of the glottis during production of a sound. On the chart, voiceless consonants are on the left side of each cell and voiced consonants on the right side.

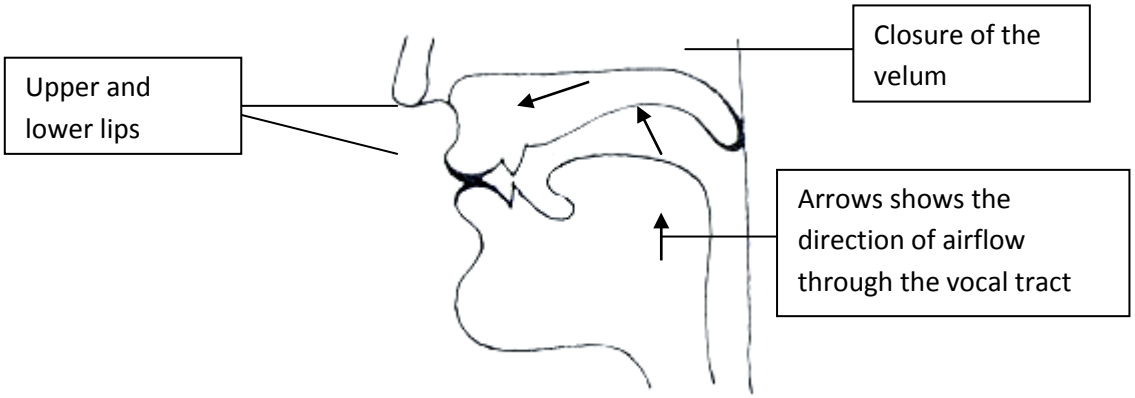
Stops/Plosives

Stops are sounds produced with some obstruction in the flow of air from the lungs at the place of articulation. The obstruction is accompanied by a closure of the velum to block air from flowing through the nasal cavity. The compressed air in the oral cavity is released suddenly with an audible pop sound by the articulators at the place of articulation. Most languages have stops in their sound inventory. The following describe the different places of articulation for stops:

Bilabial stops: [p] [b]

The articulators for the production of these sounds are the lips. The sounds are produced when the lower lip meets the upper lip and creates an obstruction in the flow of air from the lungs. The velum is also closed so that air cannot pass through the nasal cavity. There is also no vibration of the vocal cords in the voiceless production. The pressure of trapped air in the oral cavity causes a sudden explosion when it is released through the lips. The voiced counterpart is produced in the same way except for the vibration of the vocal cords during its production. Examples are: English: [pæd] 'pad', [bæd] 'bad'; Igbo: [paa] 'carry', [bi] 'come'; Yoruba: [bẹ̀] 'beg'; Hausa: [bani] 'give me'.

Figure 4: Bilabial Articulation

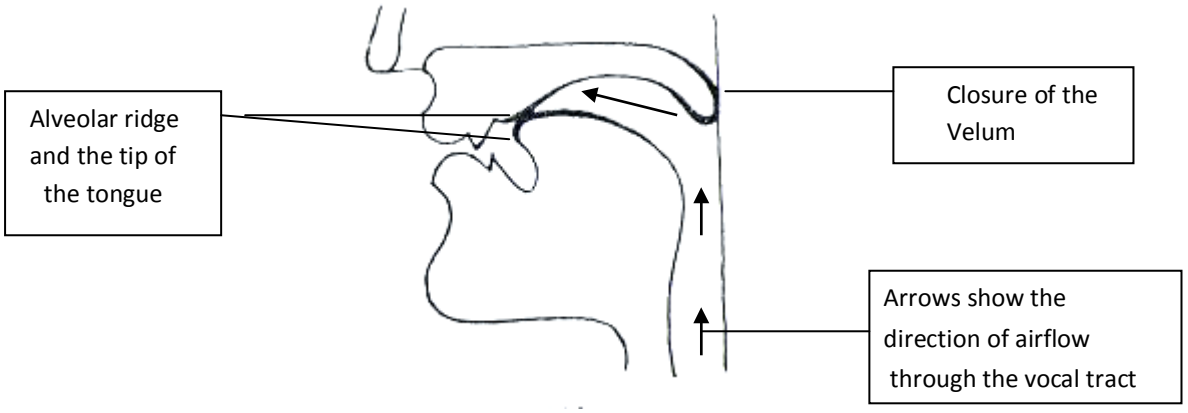


Source: adapted from O'Connor, 2000

Alveolar stops: [t] [d]

The articulators for alveolar sounds are the alveolar ridge and the tongue. Alveolar sounds are made with the tip of the tongue touching alveolar ridge which is just behind the upper teeth, and thus blocking the air flowing from the lungs through the oral cavity. The vocal cords vibrate during the production of [d] and do not during the production of [t]. Examples are English: [tæp] 'tap', [deit] 'date'; Igbo: [tu] 'stab', [de] 'write'; Yoruba: [ata] 'pepper [dɛ] 'fool'; Hausa: [tuwo] ['food', [dinki] 'to sew'.

Figure 5: Alveolar articulation

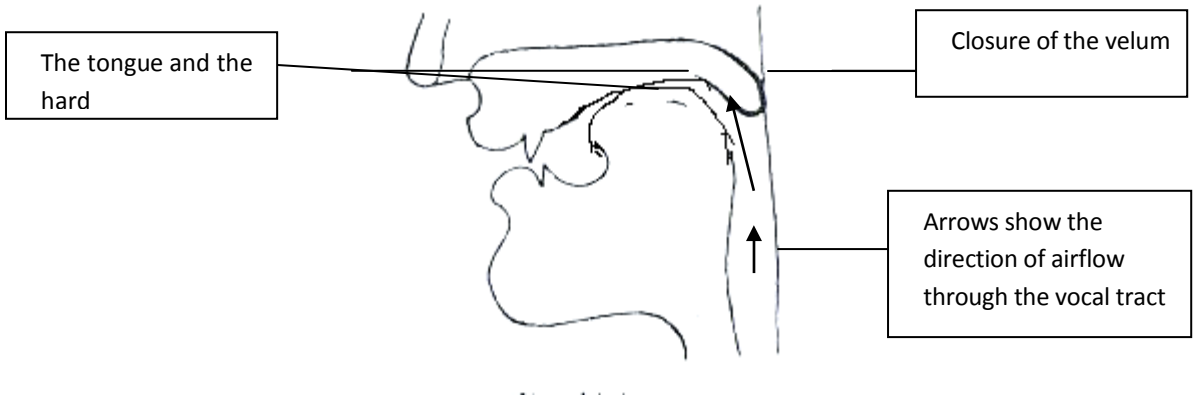


Source: adapted from O'Connor, 2000

Palatal stops: [c] [ɟ]

The articulators for these sounds are the tongue and the hard palate (roof of the mouth). They are formed by the raising of the front part of the tongue towards the hard palate. Examples are Urhobo: [cò] 'steal', [ɓẹ̀] 'run'.

Figure 5: Palatal articulation



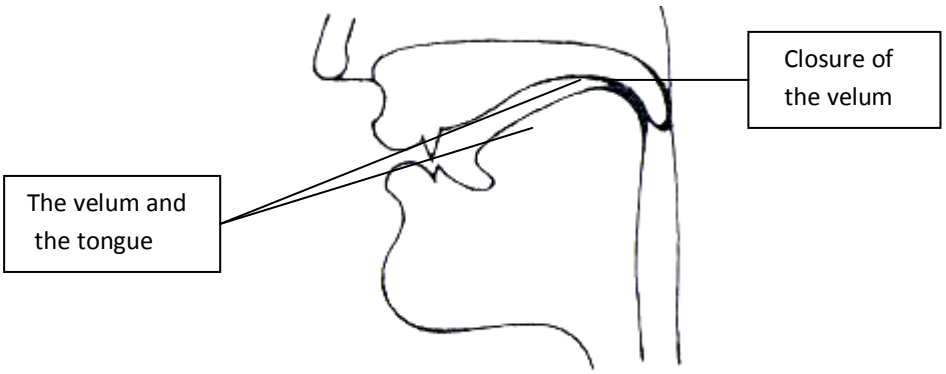
Source: adapted from Roach, 2003

Velar stops: [k] [g]

The articulators for velar sounds are the tongue and velum (soft palate). The tongue makes contact with the lower part of the velum to form velar consonants. The velum is closed to stop air from flowing out through the nasal cavity.

For the voiceless velar stop [k], the vocal cords are apart and so do not vibrate as air flows up into the vocal tract. For the voiced velar stop [g] the vocal cords are together and they vibrate as air passes through into the vocal tract. Examples are English: [kaɪnd] 'kind', [gɛʜt] 'get'; Yoruba: [kɔ̀] 'refuse', [ɔ̀gá] 'boss'; Hausa: [kàzá], 'chicken', [gídá] 'house'; Igbo: [kèdú] 'greeting', [gʊ] 'count'.

Figure 6: Velar articulation

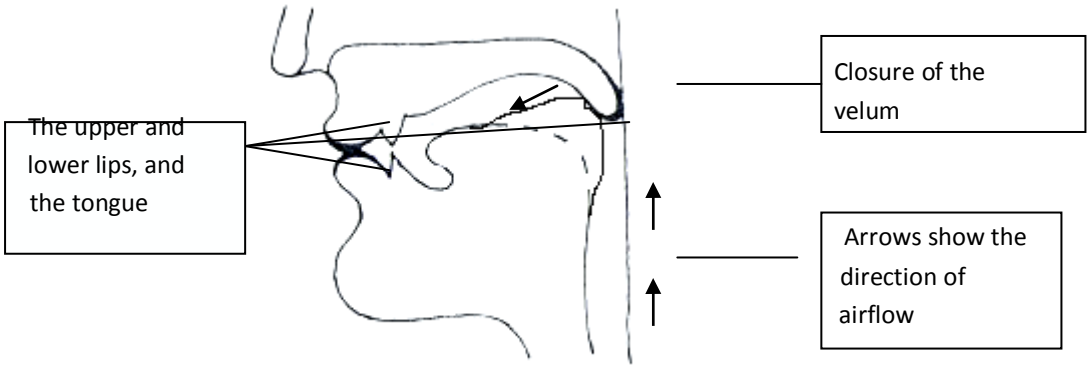


Source: adapted from Roach, 2000.

Labiovelar stops: [kp] [gb]

The articulators for labiovelar stops are the lips, tongue, and the velum. The upper and lower lips are closed at the same time as the back of the tongue makes contact with lower side of the velum (soft palate). Air coming from the lungs builds up vocal tract and in the oral cavity. A sudden opening of the lips releases the air to produce the double articulated sound. The voiced counterpart [gb] is produced by the vocal cords being together and air passing through causing them to vibrate. The voiceless counterpart [kp] is produced with the vocal cords apart and air flows through freely. Note that this sound is not produced as [k] followed by [p] but simultaneously as [kp] in a double articulation. Labiovelar stops do not occur in English but they occur in some Nigerian languages. Examples are Yoruba: [kpa] 'kill', [gbà] 'take'; Igbo: [akpu] 'cassava', [egbè] 'gun'; Urhobo: [kpɔ] 'peel', [gbe] 'clear (bush)'. Efik-mkpa "death" kpukpru "all".

Figure 7: Labiovelar articulation



Source: adapted from Roach, 2000

Labialised velar stops: [kw] [gw]

Labialised velar stops are produced with the same articulators as for the labiovelar stops except that the lips are spread and not closed in production. They have the voiceless and voiced counterparts and are found in some Nigerian languages like Igbo: [àkwá] 'cloth', [gwa] 'tell'. Efik[akwá] – tray [akwa]- big or mighty

Glottal stop: [ʔ]

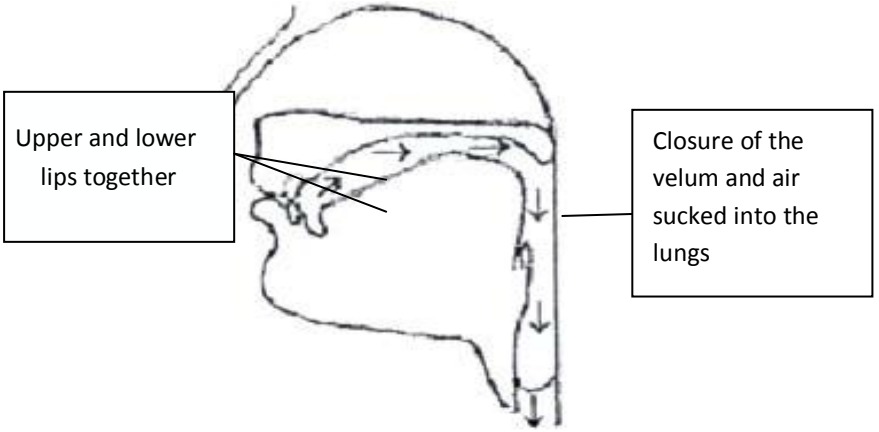
The glottal stop is produced with a huge breath of air coming out of the lungs through the glottis, and out of the mouth. The vocal cords in the glottis are firmly pressed together so that they have to be forced open by the burst of air coming from the lungs thus producing some plosion. It is called a glottal stop because the closed vocal cords in the glottis constitute the obstruction in the path of the airflow. Examples from Hausa: [ʔabin ʧi] 'food'.

Implosives

Implosives do not make use of the pulmonic egressive airstream mechanism. They are produced by air being breathed in rather than breathed out as with plosives. The vocal cords act as a suction pump drawing air in into the lungs during their production.

Voiced Bilabial implosive: [ɓ]

This sound is produced in the way described above. Examples from Hausa: [kuɓèwa] 'okra', [ɓeɓeɓra] 'rat'. Fig.8: Voiced bilabial Implosive

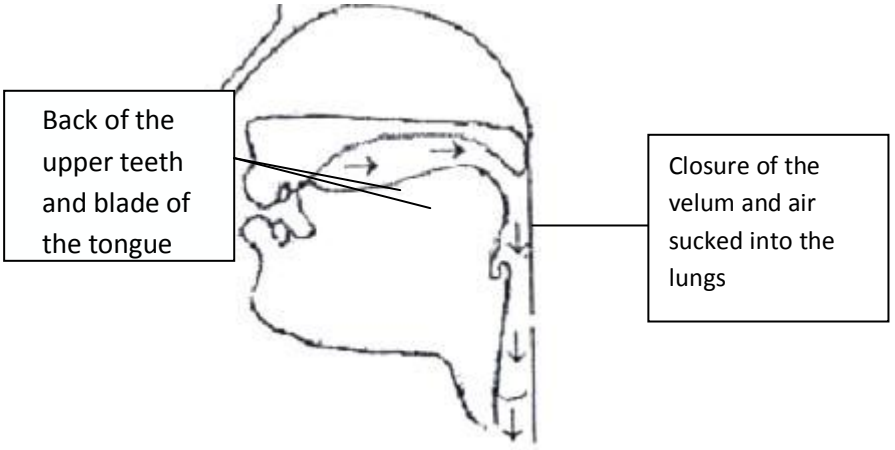


Source: Yusuf, 2007

Voiced Alveolar implosive: [ɗ]

The alveolar implosive is formed with the teeth and tongue as the articulators. The tongue makes contact with the back of the upper teeth while air is sucked in. Implosion occurs when the articulators open up to allow air to pass through. Examples from Hausa: [ɗájá] 'one', [faɗà] 'fight', [ɗán] 'son'.

Fig. 9: Voiced bilabial Implosive



. Source: Yusuf, 2007

Ejectives

Alveolar ejective: [s']

The articulators are the same for alveolar sounds, the alveolar ridge and the teeth. The sounds are produced by a release of the buildup of air in the oral cavity that flows out through the partial closure between the teeth and alveolar ridge. Examples from Hausa: [dus'è] dutse 'stone', [s'oho] tsoho 'old (person)', [s'awo] tsawo 'long'.

Voiceless Velar ejective: [ƙ]

For the velar ejective the articulators are the same for velar sounds, the velum and the tongue. The velum is closed so that air cannot pass to the nasal cavity. The glottis is also closed thereby causing the air trapped in the vocal tract to build up behind the tongue and velum. The ejective sound is made when the back of the tongue is lowered to release the air in the vocal tract. Only the voiceless counterpart occurs in Hausa: [ƙásá] 'country', [ƙáyè] 'village'.

Fig. 10: Voiceless Velar Ejective.

Source: Yusuf, 2007

Fricatives

Fricatives are produced with a partial obstruction in the flow of air such that air passes through a narrow passage with some noise. Like stops, fricatives can be voiced or voiceless. Most languages have fricatives. They are produced at different places of articulation as will be described in the sections that follow.

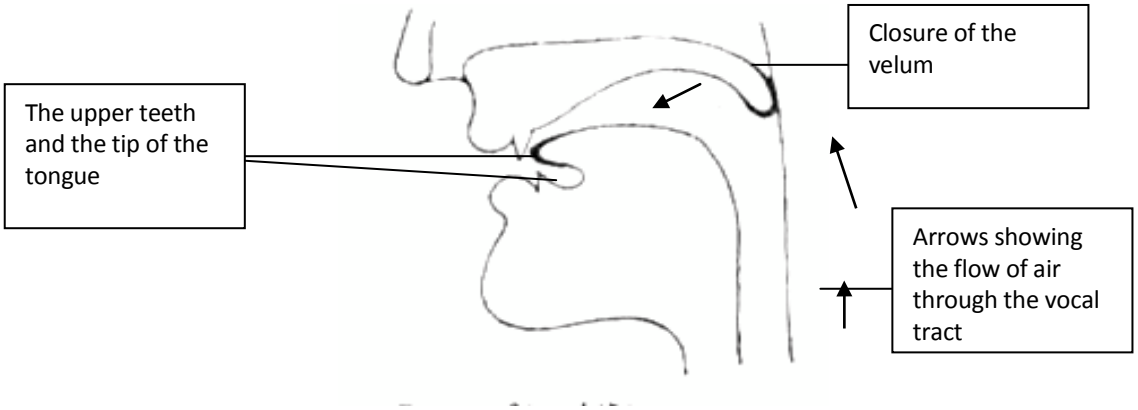
Bilabial fricatives: [ɸ] [β]

The articulators are the same as for bilabial stops, the upper and lower lips. The fricatives are produced with some friction created by the flow of air passing through the narrow passage between the two lips. They do not occur in English but occur in some Nigerian languages. For example, Urhobo and Hausa have only the voiceless bilabial fricative: Hausa:[ɸ ùla] 'cap', [ɸ ùre] 'flower'; Urhobo: [ɸ ò] 'jump', [àɸ ja] 'knife' while Igbo has both voiceless and voiced bilabial fricatives: [oɸe] 'soup', [iβe] 'folktale', [aβʊ βa] 'garden egg'.

Dental fricatives: [ɵ] [ð]

The articulators for these sounds are the teeth and the tongue. They are formed with friction created by the flow of air passing through the narrow passage between the teeth and the tongue. Dental fricatives occur in English but do not occur in Nigerian languages. Examples are: [ɵɪn], 'thin', [ɵɪk] 'thick', [ðɛn] 'then', [ʌ ðə] 'other'.

Figure 11: Dental articulation

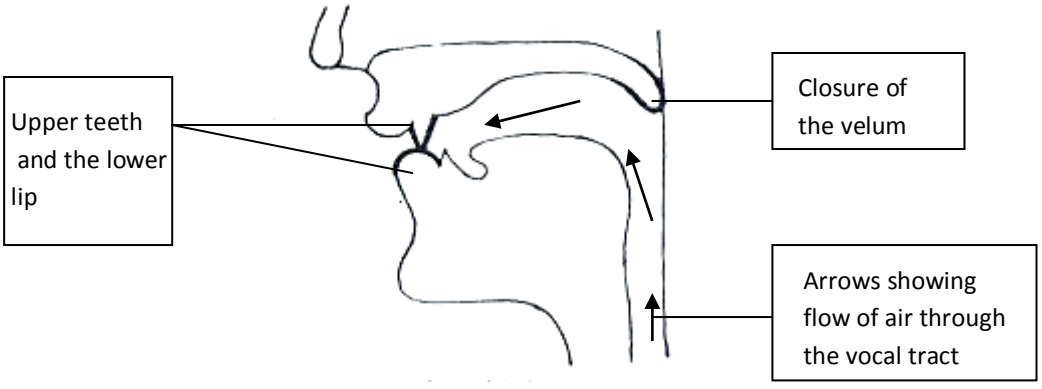


Source: adapted from O'Connor, 2000

Labio-dental fricatives: [f] [v]

The articulators for labio-dental sounds are lips and the teeth. The sounds are formed by the lower lip rising to make contact with the upper front teeth. Friction is caused by air flowing out of the mouth through partially open passages between the lips and the teeth. Examples are:
English: [fain] 'fine', [vɛri] 'very'; Yoruba: [ìfɛ] 'love', Igbo: [fe] 'fly', [mèvɛ] 'disgrace'.

Figure 12: Labio-dental articulation



Source: adapted from O'Connor, 2000

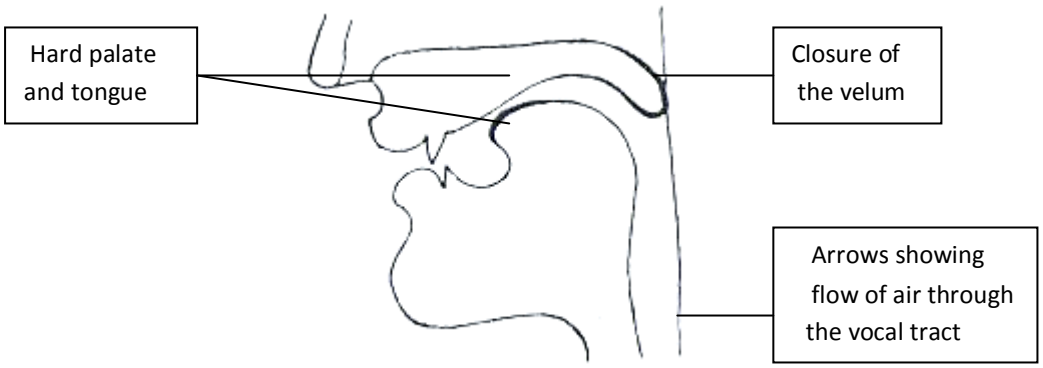
Alveolar fricatives: [s] [z]

The articulators are the same as for alveolar stops [t] and [d]. Alveolar fricatives are produced with friction created by the flow of air passing through the narrow passage between the alveolar ridge and blade of the tongue. They occur in English and many Nigerian languages. Examples are [seɪ] 'say', [z oʊn] 'zone'; Igbo: [ose] 'pepper', [izʊ] 'to buy'; Yoruba: [sɔ] 'to say'; Urhobo: [sè] 'call, read', [zè] 'sacrifice'.

Palato-alveolar fricatives: [ʃ] [ʒ]

They are also called palatal fricatives. The articulators for these sounds are the tongue and the hard palate. The fricatives are produced with frication created by the flow of air passing between the tongue and the palate (roof of the mouth). Examples are English: [ʃəʊ] 'show', [mɛʒə] 'Measure'; Yoruba: [oʃù] 'month'.

Figure 13: Palato-alveolar articulation

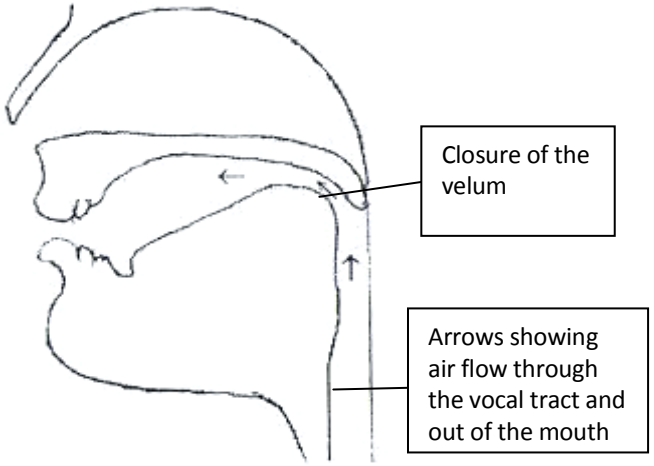


Source: adapted from O'Connor, 2000.

Velar fricatives: [x] [ɣ]

The articulators for velar fricatives are the same as for velar stops [k] and [g], the back of the tongue and the velum. Velar fricatives are produced with friction from the flow of air passing through a narrow passage between a raised back of the tongue and the velum. Although they do not occur in English, velar fricatives are found in some Nigerian languages like Urhobo. Examples are: [xa] 'play', [ɔxɔ] 'sense', [ɣa] 'forbid', [ɛ̀ɣà] 'taboo'.

Figure 14: Velar fricatives



Source: Yusuf, 2007

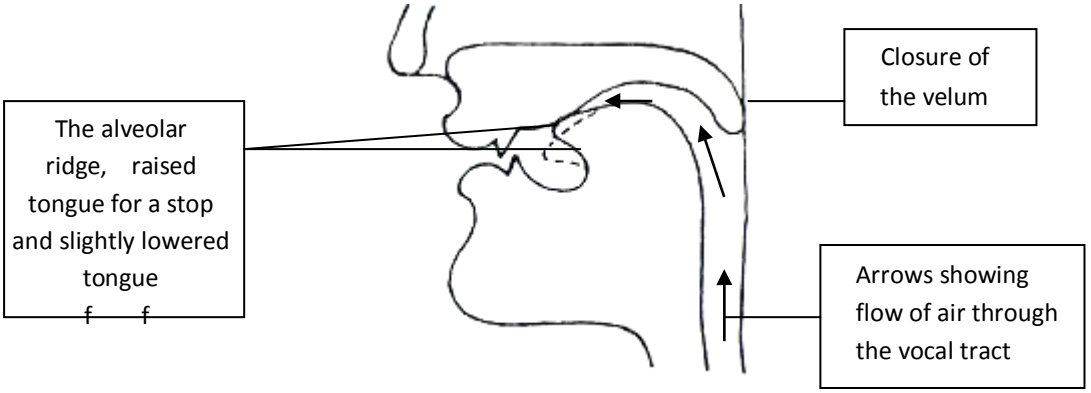
Glottal fricative: [h]

The glottal fricative is produced by air passing through a narrow glottis (the vocal cords are partially open) thus creating a sound similar to that of a vowel. It is a fricative because there is a partial obstruction in the path of the airflow. It is voiceless because the vocal cords are not fully closed therefore there is no vibration. The glottal fricative occurs in English, for example: [əhed], 'ahead' [haʊs] 'house'.

Affricate [ʧ] and [ʤ].

Affricates are complex consonants that are produced with two manners of articulation. They begin as stops and end as fricatives. Examples of affricates are the palato-alveolar affricates [ʧ] and [ʤ]. The articulators that produce them are the same as for post-alveolar fricatives [ʃ] and [ʒ]. They are produced by tongue touching the alveolar ridge behind the upper teeth, and released as a fricative with a partial obstruction between the tongue and alveolar ridge. Affricates occur in English and some Nigerian languages like Hausa. Examples English: [neiʧə] 'nature', [ʤʌʤ] 'judge'; Yoruba: [ɔʤɔ] 'day'.

Figure 15: Post-alveolar affricates



Source: adapted from O'Connor, 2000

SELF ASSESSMENT EXERCISE 4

1. Fricatives are produced with total obstruction to the flow of air from the lungs *True/False*
2. The only consonants that are produced with initial total closure like that of the articulation of stop but accompanied with a fricative release are……
3. Ejectives are found in ……. languages spoken in Nigeria.

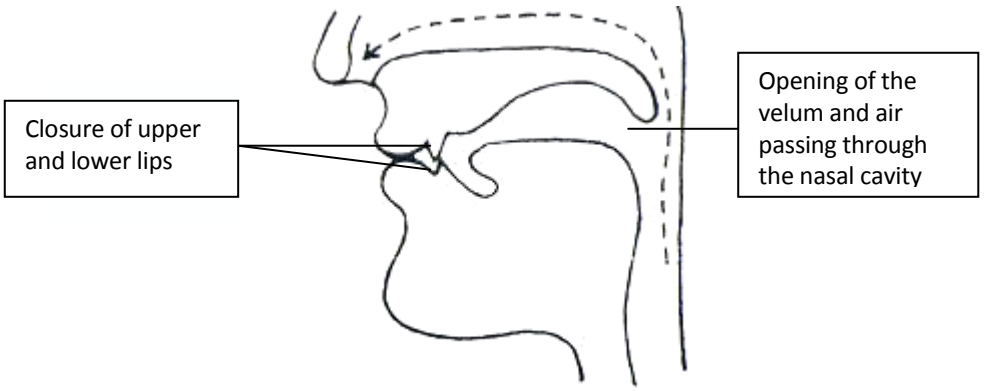
Nasal Consonants

The main characteristic of nasal consonants is that air escapes through the nose instead of through the oral cavity. This happens when the velum (soft palate) is lowered in contrast to when it is raised and air cannot pass through the nose in the production of all the sounds we have described so far. Also, they are stops because there is complete closure of the articulators in the mouth during their production. For nasal stops, the velum opens so that air passes through the nose instead of through the mouth. Six types of nasal stops have been identified in English and Nigerian languages, according to the articulators that form the closure to stop air form passing through the mouth. They are described below:

Bilabial nasal: [m]

The bilabial nasal stop is produced in the manner described above but with the lower and upper lips tightly closed together to stop air from passing through the mouth. The bilabial nasal occurs in English and Nigerian languages. Examples: English: [mʌ n ɟ] 'money'; Hausa: [madara]; Igbo: [mmíri] 'water'; Yoruba: [mí] 'breathe'.

Figure 16: Bilabial Nasal



Source: Adapted from O'Connor, 2000

Alveolar nasal: [n]

The alveolar nasal stop is produced with a lowered velum for air to pass through the nose and with the tongue blade against the alveolar ridge to stop air from passing out of the mouth. It occurs in English and Nigerian languages. Examples are English: [nɔis] 'noise', [n ʌ n] 'none'; Hausa: [ǹawa] 'mine'; Igbo: [niile] 'all'; [niɛbaa] 'here'.

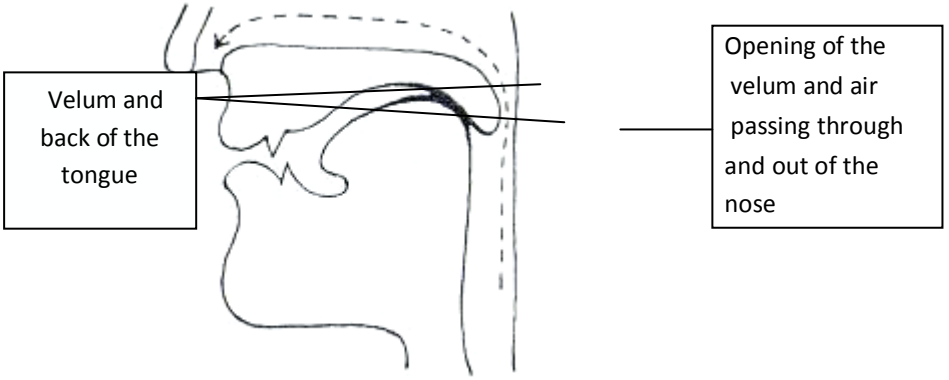
Figure 17: Alveolar Nasal

Source: O'Connor, 2003

Velar nasal: [ŋ]

The velar nasal stop is produced with a lowered velum for air to pass through the nose and with the back of the tongue against the palate to stop air from passing out through the mouth. Examples are English: [siŋiŋ] 'singing'; Igala: [aŋɛ'ʤɛ'] 'tortoise'.

Figure 18: Velar nasal

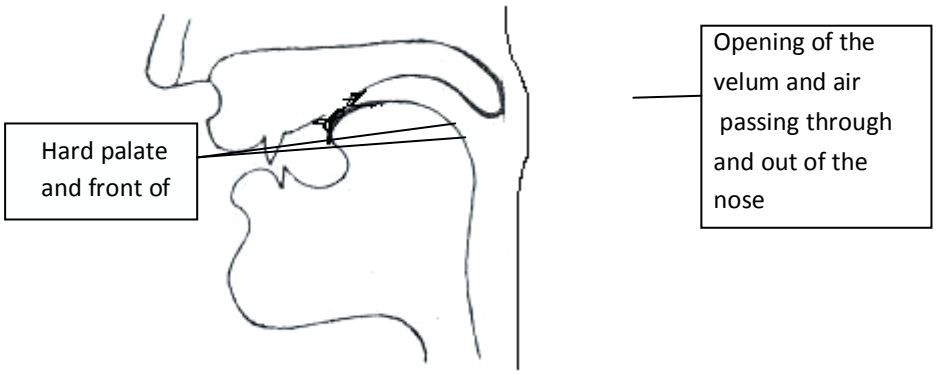


Source: O'Connor, 2003

Palatal nasal: [ɲ]

The palatal nasal stop is produced with a velic opening, that is a lowered velum to allow air pass through the nose, and with a blockage of air passing through the mouth by the front of the tongue against the hard palate. This sound occurs in some Nigerian languages but not in English. Examples are Igbo: [a'ɲa'] 'eye', [ɲe'] 'give'.

Figure 19: Palatal nasal [ɲ]

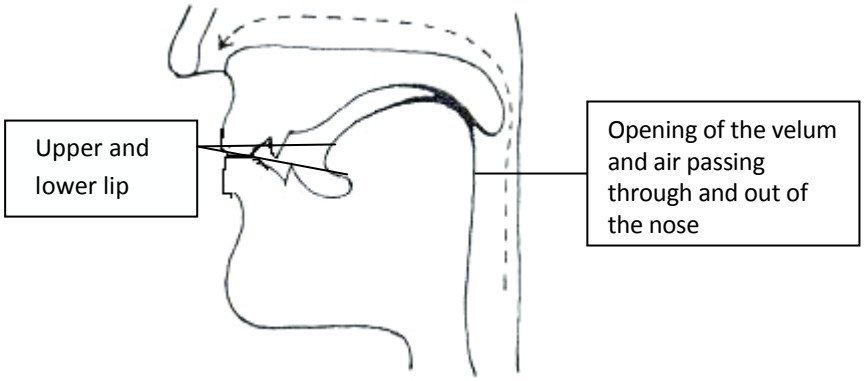


Source: adapted from O' Connor, 2003

Labiovelar nasal [ŋw]

The labiovelar nasal stop is produced with a velic opening, that is, a lowered velum to air pass through the nose, and with the same articulators for the labiovelar stops. However, the lips are spread and not closed in production while the air coming out from the mouth is blocked by the back of the tongue raised against the velum. This sound occurs in some Nigerian languages, examples are Urhobo: [ŋwà] mwà 'oil extract', [ɛ̀ŋwa] ẹ̀ŋwa' cloth'; Igbo: [ŋwe] 'have'.

Figure 20: Labiovelar nasal



Source: adapted from O' Connor, 2003

SELF ASSESSMENT EXERCISE 5

1. Nasal consonants are produced by velic opening as the airflow passes through the nose. *True/False.*
2. Which of the nasal consonants discussed above occur in Nigerian languages but not in English?

Approximants [r, j, w, l]

Approximants are a group of consonant sound segments characterized by lack of friction or obstruction in their production. The articulators do not get close enough to produce a full- fledged consonant like a stop, nasal or fricative, hence the label 'approximants'. They are further classified into two, central and lateral approximants based on the direction of airflow in the mouth. Four approximants are presented here all of which can be found in both English and Nigerian languages [r, j, w, l] except for [r] which is fricative sound in Nigerian languages but a flap or tap in English [ɾ].

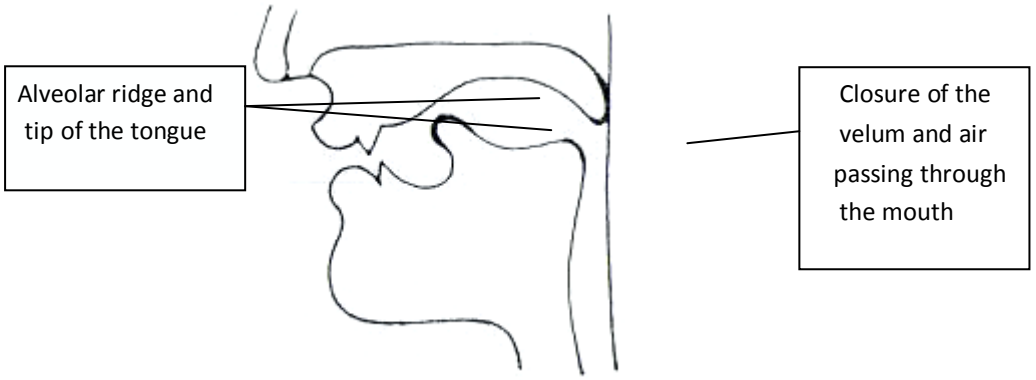
Trill, Flap/tap

Alveolar flap [ɾ]

This alveolar consonant also known as a liquid is an interesting sound because it takes various forms in different languages. For example, it occurs as a flap or tap in English, as a retroflex, as a uvular in French, and as a trill in Nigerian languages. As a flap or tap, it is produced with the tip of tongue raised in a slightly curled back position while approaching the alveolar ridge. The lips are also slightly rounded in the production. It is also a central approximant in that the air passes over the centre of the tongue. Examples: Urhobo: [ɾ è] 'Alveolar trill [r] As a trill, the

alveolar consonant is produced like a true fricative. The tip of the tongue is raised close to the alveolar ridge enough to cause some obstruction in the flow of air passing through the mouth. Examples in English: [raund] 'round', [fri:] 'free'; Igbo: [ri'] 'eat'; [rù] 'carry'.

Figure 21: Alveolar flap

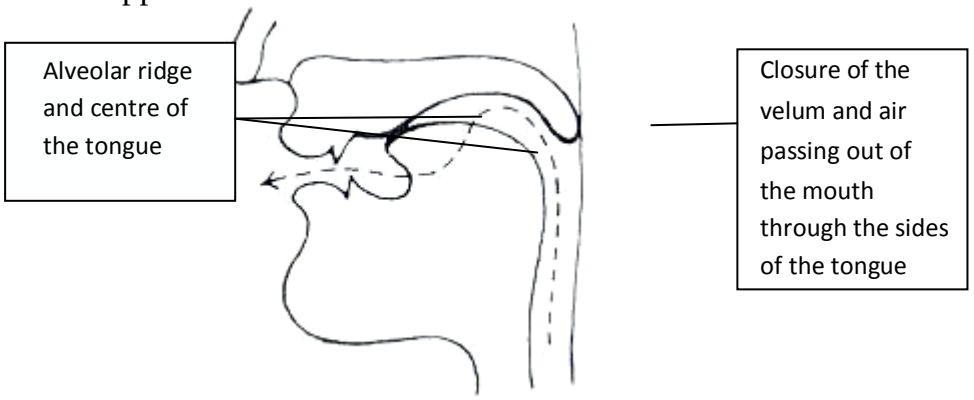


Source: O'Connor, 2000.

Alveolar approximant: [l]

The alveolar approximant also known as liquid is a lateral consonant that is produced by a complete closure between the centre of the tongue and the alveolar ridge thus, causing air to pass along the sides of the tongue. It is lateral because the airflow does not pass along the centre of the tongue; instead it passes through the sides of the tongue. The lateral alveolar approximant occurs in English and Nigerian languages. Examples are English: [lænd] 'land', [pail] 'pile'; Igbo: [lé] 'look', [àlà] 'earth'.

Figure 22: Alveolar approximant



Palatal and Bilabial approximants: [j] [w]

These approximants, also known as glides are produced with little or no obstruction of airflow in the mouth. In the production of the palatal approximant [j], the blade of the tongue is raised towards the hard palate and quickly glides towards producing the vowel sound that follows. The bilabial approximant [w] is produced by both the raising of the tongue toward the velum and at the same time, the rounding of the lips. Both consonants occur in English and Nigerian languages. Examples:

[jiə] 'year', [wʌn] 'one'; Yoruba: [jɔ] 'melt', [wèrè] 'mentally unstable'; Igbo: [mjọ] 'seive' [wù] 'jump'; Urhobo: [jà] 'catch', [wɛ]
'you'.

SELF ASSESSMENT EXERCISE 6

1. Approximants are produced with obstruction in the flow of air from the lungs. *True/False*
2. The alveolar flap consonant does not occur in English. *True/False*

4.0 CONCLUSION

A description of sound segments constitutes the first building block in describing any language. There are more consonant sounds than the one you have been introduced to, which are the ones found in English and most Nigerian languages. Apart from learning how to identify and describe the various consonants, you must have also started to learn how to use transcription symbols to represent the various sounds.

5.0 SUMMARY

We have completed the description of consonant segments of English and Nigerian languages. We learned about the production of stops, fricatives, nasals, affricates, trills, flaps and taps as well as approximants. We also noted that there are consonants that occur in English and not in Nigerian languages and vice versa. Take another look at the consonant chart and identify the various consonants that we have described and their articulators. We will complete the description of sound segments in the next unit when we take a look at vowels.

6.0 TUTOR-MARKED ASSIGNMENT

1. Identify the sound segments in your language using the method of phonetic analysis described in 3.1.
2. List and describe five consonants that are present in English but do not exist in one of the Nigerian languages. Provide examples.
3. List and describe the major consonant groupings discussed in the unit and give examples.

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UNIT 2 PHONETICS II

CONTENTS

1.0 INTRODUCTION

This unit is a continuation of the previous unit. Can you recall what you learned in the previous unit? You were introduced to Phonetics, the study of how speech sounds are produced, perceived and transmitted. By now you should be able to identify speech organs and the various sounds they produce. You were told that sound segments are divided into two major categories, consonants and vowels. While the previous unit introduced you to consonant sounds, we will study vowel sounds in English and Nigerian languages, and the articulators that are used in their production in this unit. We will also discuss features that are beyond the sound segments known as suprasegments; and examine the features that distinguish one sound from another, distinctive features.

2.0 OBJECTIVES

At the end of this unit you should be able to:

- describe vowels according to the parameters of their production
- transcribe vowels using phonetic symbols,
- distinguish between short and long vowels, monophthongs, diphthongs and triphthongs and nasal vowels,
- define suprasegmental features, and
- explain the use of distinctive features.

3.0 MAIN CONTENTS

3.1 Vowels

Vowels differ from consonants in their production. There is relatively little or no obstruction of air while consonants are produced with obstruction in air coming from the lungs. The positioning of the articulators in the production of vowels such that they do not make contact as with consonants makes vowel production difficult to describe. The tongue is the most important articulator in vowel production. Two of the four parameters used in describing vowels involve the tongue. The parameters are i) tongue height ii) part of the tongue involved; iii) lip rounding; and iv) length.

The Tongue's height and Part of the tongue involved

The tongue is high in the mouth for the production of the vowel [i] as in 'hit' and low for [æ] as in 'hat'. Try pronouncing these two words one after the other and feel the difference in **height** of your tongue in your articulation of the vowels. Now, pronounce the vowels again and try and feel the difference in the **part of your tongue** that is being raised. For [i] it is the front part of the tongue while it is the back of the tongue for [u].

Figure1 illustrates the tongue positions for the production of vowels ɪ, ʊ, ɑ.

Figure 1: Tongue positions for ɪ, ʊ, ɑ

Source: Fromkin, et al, 2003

Lip rounding

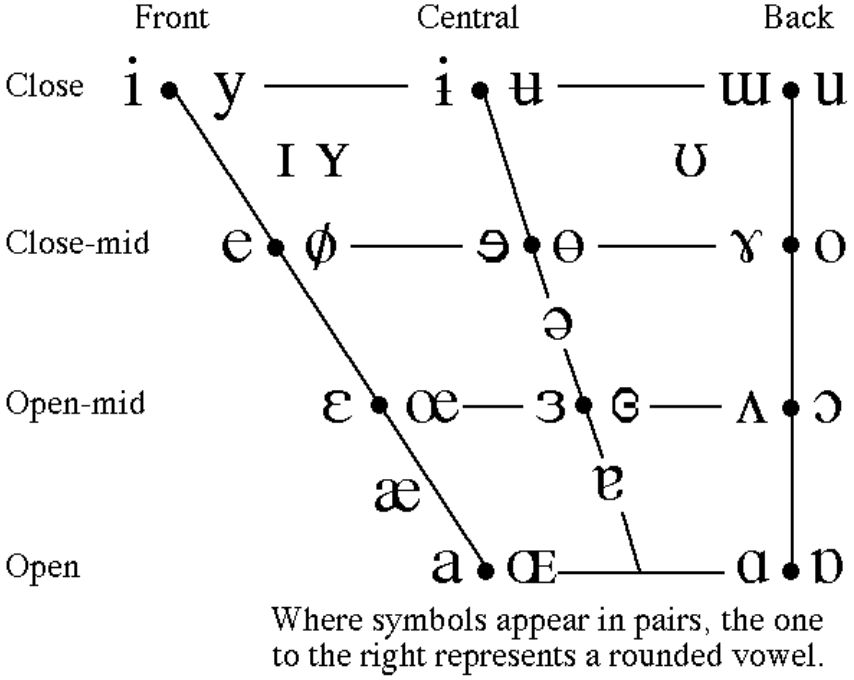
Pronounce [i] and [u] again and try to feel the shape of your lips as you do so. Did you notice that your lips **spread** as in a smile for [i] but they were **rounded** and pushed forward for [u]? In the pronunciation of [ɜ:] as in 'fern', the lips are neither spread nor rounded. They are said to be in **neutral** position. Most languages have rounded vowels, for example, all English back vowels except the low vowel [a] are rounded. In contras however, French and Swedish languages have both front and back rounded vowels. Languages like Chinese Mandarin, Japanese, and Fe'fe', a Camerounian language have a high back unrounded vowel (Fromkin et al 2003).

Vowel length

Vowels can also be short or long. Try and pronounce the vowels in the words [ʃi:p] and [ʃɪp] as in 'sheep' and 'ship'. The vowel in 'sheep' and 'ship' are the same except that the first is longer than the second in terms of duration of production. Vowel length is indicated by two dots (:).

Figure 2 is the conventional chart for vowels as recommended by the International Phonetic Association (IPA). The tongue height is measured horizontally while the part of the tongue involved is measured vertically.

Figure 2: Vowel Chart (International Phonetic Alphabet, IPA)



Whereas the above chart houses numerous vowel sounds available in human language, English in particular has twenty (20) vowels made up of twelve pure vowels (monophthongs) and eight ((8) diphthongs. Considering vowel length, English has 8 short vowels i, e, æ, ʌ, ɔ , ʊ and 5 long vowels i:, ɜ :, :, ɔ :, u:. Similarly, Hausa has 5 short vowels a, i, e, u, o and 5 long vowels a:, i:, e:, u:, o:.

Long and short vowels are also described by the phonetic features, tense and lax respectively. In some Nigerian languages vowels are distinguished by the phonetic feature of the advanced or retracted nature of the tongue that is, +/- Advanced Tongue Root (ATR). It involves the movement of the base of tongue forward during production of the vowels. For example, Yoruba and Igbo have 5 short or +ATR vowels i, u, o, a, e and 3 –ATR vowels ɪ, ʊ , ɔ , ɛ respectively. The two sets of vowels often contrast in these languages in what is known as **vowel harmony**.

SELF ASSESSMENT EXERCISE 1

1. The most important organ of speech in the production of vowels is the lips **True/false**
2. Vowel production characterized by an obstruction in airflow from the lungs **True/False**
3. List the four parameters used in describing vowels

3.1.1 Description of Oral Vowels of English and Nigerian Languages

High, front, unrounded short vowel [i]

Examples are as in**Yoruba**: [igbo] Igbo 'bush'; **Igbo**: [ike] 'strength'; **Hausa**: [gida] gida 'house' Half close, high, front unrounded long vowel [i**:**] Examples are as in **English**: [bi**:**n] 'been', [li**:**d] 'lead'; **Hausa**:[fari**:**] farìì 'drought'.

Non-high front unrounded short vowel i]

Examples are **English**: [pit] 'pit', [lid] 'lid'; **Igbo**: [gini] gíníì 'what?' Front non-low, unrounded short vowel [e]

Examples are as in **Yoruba**: [eʤ ò] ejo 'snake'; **Igbo**: [édè] édè 'cocoyam'; **Hausa**: [ʃ é è] shéè 'bastard'.

Front mid unrounded vowel short [ɛ]

Examples are as in **English**: [mɛt] 'met'; **Yoruba**: [ɛ̀bɛ̀] ẹ̀bẹ̀ 'beg'.

Low front unrounded short vowel [æ]

Examples are as in **English**: [mæn] 'man', [pæd] 'pad'.

Low back unrounded short vowel [a]

Examples are as in **Yoruba**: [a ʤ a] 'dog', **Hausa**: [mákárántáa] 'school'; **Igbo**: [áká] 'hand'. Low back, rounded short vowel [a]

Examples are as in **English**: [p a t] 'pot', [gan] 'gone'.

Low, back, unrounded short vowel [ɔ]

Examples are as in **English**: [rɔk] 'rock'; [ɔrɪnʤ] 'orange';

Yoruba: [ɔkɔ] ọkọ 'husband'; **Igbo**: [ɔnʉ] 'mouth'.

Non-high, back rounded long vowel [ɔ**:**]

Examples are as in **English**: [tɔ **:**[r]n] 'torn', [bɔ **:**[r]d] 'board'

Low back unrounded long vowel [a**:**]

Examples are **English**: [ha**:**f] 'half', [ka**:**d] 'card'.

Non- high, back, rounded short vowel [o]

Examples are **Yoruba** [ómi] omi 'water', [odò] odò 'river'; **Igbo**: [ófe] 'soup', [ògbò] 'type of snake'; **Urhobo**: [fò] 'be fit'; **Hausa**: [dogo] 'tall male'.

Non-high, back, rounded long vowel [o**:**]

Examples are as in **English**: [p ɔ:t] 'port', [s ɔ:] saw

High, back, rounded short vowel [u]

Examples are **Yoruba**: [iʂu] iṣu 'Yam'; **Igbo**: [ùdé] 'body cream', [ùdù] 'water pot'; **Hausa** [bugà] 'hit', [ruwa] 'water'.

High, back, rounded long vowel [u**:**]

Examples are **English**: [fu**:**d] 'food', [su**:**n] 'soon'; **Hausa**: [nù**:**na] nùùnaa 'ripen'.
Non-high, back, rounded short vowel [ʊ]
Examples are **English**: [pʊ t] 'put', [bʊ k] 'book'; **Igbo**: [gu] 'gụ 'read', [abụ̀] abụ̀ 'song'.

Central, unrounded short vowel [ʌ]
Examples are **English**: [bʌt] 'but', [rʌʃ] 'rush'
Central, unrounded short vowel [ə]
Examples are as in **English** [əgeʊ] 'ago, [əbaʊt] 'about'.
Central, unrounded long vowel [ɜ:]
Examples are as in **English**: [tɜ:n] 'turn', [bɜ: d] 'bed'.

SELF ASSESSMENT EXERCISE 2

Describe the vowels underlined in these words following the description of vowels in 3.1.1: above

a) m<u>a</u>t b) p<u>u</u>ll c) <u>ɔ</u> nu d) <u>ɛ</u>vu e) <u>ʊ</u>lɔ

3.1.2 Diphthongs and Triphthongs

Apart from oral vowels, languages like English have other vowels called diphthongs and triphthongs. A diphthong is a sequence of two vowel sounds while a triphthong is a sequence of three vowels, and they are produced by gliding from one vowel to the other. In contrast, the vowels studied earlier are called pure vowels or monophthongs because they do not involve a gliding movement to a second or third vowel. Diphthongs exist in several languages for example; English has eight diphthongs while Hausa has two diphthongs. Pronunciation of diphthongs and triphthongs often poses a difficulty for second language speakers who do not have it in their first languages. They are categorized as long vowels although pronunciation of the first in the sequence is stronger and longer than the second and the third vowel. In English, diphthongs can be divided into three groups: i) diphthongs ending with [ə]; ii) diphthongs ending with [ɪ]; and iii) diphthongs ending with [ʊ] . See the vowel chart in figure 2 to observe the direction of the glide from one vowel to the other as described below:

i) [ɪə] Gliding movement starts from [ɪ] towards [ə] as in [fɪəs] 'fierce', [bɪə] 'beer'.
[eə] Gliding movement starts from [e] towards [ə] as in [beə] 'bear', [eə] 'air'.
[ʊə] Gliding movement starts from [ʊ] towards [ə] as in [pʊə] 'poor', [tʊə] 'tour'.

ii) [eɪ] Gliding movement starts from [e] towards [ɪ] as in [meɪd] 'made', [peɪn] 'pain'.
[aɪ] Gliding movement starts from [a] towards [ɪ] as in [taɪ] 'tie', [naɪs] 'nice' ; Hausa: [rai] 'soul', [kai] 'you'
[ɔɪ] Gliding movement starts from [ɔ] towards [ɪ] as in [vɔɪs] 'voice', [kɔɪn] 'coin'.

iii) [əʊ] Gliding movement starts from [ə] towards [ʊ] as in [həʊ] 'home', [ləʊd] 'load'.

[aʊ] Gliding movement starts from [a] towards [ʊ] as in [la ʊd] 'loud', [klaʊn] 'clown' ; Hausa: [tauri:] taurii 'hardness', [làuje:] làujee 'sickle'.

For the production of triphthongs, the gliding movement is from one vowel to a second and to a third without any pause. English has five triphthongs and they are illustrated below. Note that the sequence of first and second vowels for all the triphthongs is same as the second and third groups of English diphthongs with a schwa [ə] as the third vowel
(Roach, 2000).

i. [eɪə] as in [leɪ ə] 'layer', [pleɪ ə] 'player'.
ii. [aɪə] as in [laɪ ə] 'lair', [faɪ ə] 'fire'
iii. [ɔɪ ə] as in [lɔɪ ə] 'loyal', [rɔ ɪ ə] 'royal'
iv. [əʊ ə] as in [ləʊ ə] 'lower', [məʊ ə] 'mower'
v. [aʊə] as in [haʊə] 'hour', [paʊ ə] 'power'.

SELF ASSESSMENT EXERCISE 3

Identify the vowels in the following words as long vowel, diphthong or triphthong:

a) learn b) tone c) team d) coil e) flower

3.1.3 Nasal Vowels

Apart from oral or pure vowels, some Nigerian languages have other vowels called nasal vowels. Nasal vowels are produced with the velum lowered to enable air escape through both the mouth and the nasal cavity. Nasal vowels are described with the same parameters as their oral counterparts but with an additional nasal feature. The nasal feature is usually indicated phonetically with the mark called a *tilde* placed above the vowel (ṽ). However, the nasal feature is indicated orthographically with an 'n'

following the vowel e.g. *en*. Yoruba for example, has five nasal vowels in addition to its seven oral vowels and they are:[$\bar{i}$], [$\bar{\varepsilon}$], [$\bar{a}$], [$\bar{\supset}$], [$\bar{u}$]. Here are some examples:

[$\bar{i}$] as in [iri] irin 'iron'

[ɛ̄] as in [ìyɛ] ìyẹn ‘that one’
[ā] as in [ìta] ìtaǹ ‘story’
[⊃̄] as in [Ɔ gb Ɔ] ọgboń ‘wisdom’
[ū]as in [Ɔ du] ọdun ‘year’

SELF ASSESSMENT EXERCISE 4

Using the parameters for description of vowels in addition to the nasal feature, provide a description for any two of the Yoruba nasal vowels.

3.2 Phonetics and Phonology

Phonetics is related to phonology in that the output of a phonetic study forms the input for a phonological study of a language. As we have learned, a phonetic study of language studies the physical properties, perception and production of speech sounds of a language with aim of distinguishing the sounds that are used in the language. Phonology on its part is concerned with how these sounds, which have been identified through phonetic study, are organised, combined and patterned to make meaningful words. Through phonological analysis, an inventory of sound segments that make for a difference in meaning in words is determined. You will learn more about phonology in the next unit

4.0 CONCLUSION

This unit completes the description of consonants and vowels in English and Nigerian languages. There are more vowel sounds than the one you have been introduced to which are the ones found in English and most Nigerian languages. Now that you have learned how to identify and describe both consonants and vowels, you should be able to transcribe whole words using the phonetic transcription symbols.

5.0 SUMMARY

In this unit, we learned about vowels and the parameters used to describe them. Like the consonants, we observed that there are vowels that occur in English and not in Nigerian languages and verse versa. Take another look at the vowel chart and identify the various vowels that we have described and their articulators.

6.0 TUTOR-MARKED ASSIGNMENT

1. Create a vowel chart for the vowels in your language using the vowel chart provided in figure 2 as a guide.
2. Write phonetic symbols for the vowels in the following words: Broad, they, cow, pea, verse
3. Transcribe the following words:
   Speed, stalk, toast, camera, venture, guard

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UNIT 3 PHONOLOGY

CONTENTS

1.0 INTRODUCTION

When we learn a language, we learn the sound segments and how they are patterned, that is the sound system. Phonology is the study of how we organize and structure sounds to convey meaning. The output of Phonetics, that is the speech sounds, constitutes the input for phonological analysis.

In this unit, you shall be introduced to phonology which is the second level of linguistic study after phonetics. It is the component of the grammar of a language that shows how the sound segments are organised in relation to one another to make meaningful speech. Do you remember what we learned in Units 1 and 2 about how to determine sound segments through phonetic analysis? Well, the output of a phonetic study that is the sound segments constitutes the input for phonological analysis. A phonological study shows how the sounds are used to convey meaning (Hyman, 1975). You will learn about the phoneme as the basic unit of study in phonology; the scope of phonology; key concepts such as the phoneme, and the allophone; principles by which phonemes are distinguished such as complementary distribution, minimal pairs, contrast, and variation; the phonetic features that distinguish one sound from another; the syllable; suprasegmental features of sounds; and phonological processes.

2.0 OBJECTIVES

At the end of this unit you should be able to:

- define phonology's basic unit of study
- explain the scope of phonology
- distinguish between a phoneme and an allophone
- describe phonological principles for distinguishing sounds
- discuss phonetic features of sound segments
- explain the phonological definition of a syllable
- explain the differences between pitch, , stress, tone, and intonation
- discuss phonological processes.

3.0 MAIN CONTENT

3.1 Defining Phonology and its Scope

What is phonology? Phonology is the study of how sounds are structured or patterned to convey meaning. Knowledge of the phonology of a language allows you to combine sounds that make meaningful speech. Having phonological knowledge means for example, knowing what sounds can combine together to form words, what sounds can occur at the beginning or at the end of a word, and how they should be pronounced etc. (Fromkin et al 2003). A native speaker of English for example knows that when the glottal consonant [h] occurs at the beginning of a word it takes on the quality of the vowel following it and it is produced with a breathy voice. In contrast, this consonant does not exist in Yoruba and as a result, second language speakers of English find it difficult to pronounce [h] at the beginning of an English word. The sound is usually omitted e.g. [hæt] is pronounced [at].

Various definitions of phonology shed light on its scope. For example, Spencer (1996, 2) defines phonology as 'the linguistic patterning of sounds in human languages' while Donwa Ifode (1995) describes phonology as 'the study of the systematic organization of selected speech sounds in any particular language'. These definitions show that phonology covers how sounds are combined, the relations between them and how they affect each other. As a description of the how sounds structure and function in a language, phonology involves studying a language to determine its distinctive sounds and to establish a set of rules that describe the set of changes that take place in these sounds when they occur in different relationships with other sounds. Now, that we have established the scope of phonology, let us discuss its unit of study.

3.1.1 The Phoneme

The phoneme is the basic unit of phonological study. As a key phonological concept, the phoneme refers to the sound segment that makes the difference in meaning between two words that have similar phonetic properties except in one sound segment. The sound segment that makes the two words to be different in meaning is said to be distinct and therefore called a phoneme of that language. For example, the English words ***by*** [**baɪ**] and ***my*** [**maɪ**] have different meanings and that is why we say that they are two different words. Note that the two words differ only in one sound, and this difference accounts for the different meanings. Thus, the difference between [**m**] and [**b**] in English is distinctive and significant since it is makes for the difference in meaning between ***by*** and ***my***. Similarly in Yoruba: [bɛ̀] bẹ̀ 'beg' and [fɛ̀] fẹ̀ 'wide' are two words with the same sound segments except for one. The difference in sound segment accounts for the difference in meaning of the two words. Once the status of a sound is determined to be a phoneme, it is enclosed in slant line (slashes). Thus, the phonetic sounds are always enclosed in square brackets [b], [m] while the English sounds we have confirmed as phonemes should be enclosed in slant lines as /b/,
/m/ and /b/ /f/. Contrasting words as we have done is one way of identifying phonemes in a language.

Contrast and Minimal Pairs

The aim of contrasting words as we have done in 3.1.1 is to identify phonemes of a language. The clearest kind of contrast is a minimal pair. According to Fromkin et al (2003), 'when two different forms are identical in every way except for one sound segment which occurs in the same place in the string, the two words are called minimal pairs'. Minimal pairs enable us to identify sound segments that are contrastive in a language and these sounds represent the set of phonemes that is unique to that language.

Pairs of words such as [baɪ] 'by' and [maɪ] 'my'; and [bɛ̀] bẹ̀ 'beg' and [fɛ̀] fẹ̀ 'wide' are minimal pairs since their difference is in one sound and the sound occurs in the same position in both words. Therefore we can say that /b/and /m/contrast in English; and /b/ and /f/ contrast in Yoruba. On the basis of this contrast, we can conclude that /b/ /m/ are phonemes of English and /b/ and /f/ are phonemes of English and Yoruba respectively.

In some languages, apart from the segments, suprasegments such as tone also can be used to make a difference in meaning. We provide examples of minimal pairs with both segmental and suprasegmental elements in Ibibio, a Nigerian language:
1

bén 'take'	kán 'roam'
bán 'sharpen'	káŋ 'deny'

In the examples in 1, we can observe that /e/ and /a/ contrast in ben and ban while in the second pair /n/ and /ŋ/ contrast in kan and kaŋ.

2

sḭ́n	'insert'	bán sharpen
sḭ̀n	'reject'	bàn 'initiate into'

In the examples in 2, however, the segments are identical but the tones are different. While one member of the pair bears a high tone, the other member has a low tone, / ḭ̀ / and / ḭ /. This contrast makes a meaningful difference such that the contrasting segments with their tones will be as phonemes.

Minimal pairs are based on contrasting words in terms of distribution that is, similarity in the position of the contrasting sound segment such that the substitution of one sound produces a different lexical item. Contrast can be established at any position in a word (word initial, medial or final positions). For instance, in the words *pet* and *pat*, the contrast is medially between the vowels [ɛ] and [æ]. Also in the words *rub* and *rum*, the contrast is at the word final position between [b] and [m]. Contrast is one of the major principles in phonological analysis. By contrast, we mean distinctiveness, where one sound contrasts with another showing that they are different phonemes.

3.1.2 Allophones

An allophone is a variant of a phoneme. As noted by Davenport and Hannahs (1998), the allophones of a phoneme form a set of sounds that (i) do not change the meaning of word; (ii) are phonetically very similar to one another; and (iii) may occur in phonetic contexts different from one another. Udoh (2005: 19) define allophones as 'phonetic variants of phonemes, which turn up in different phonetic shapes depending on the environment in which they occur and the effect of the sounds they occur with'. Like phonemes, allophones can be in complementary distribution or in free variation.

Allophones in Complementary Distribution

Apart from sounds that do not contrast meanings and sounds that substitute each other in the same position, and so are not distinct, there are sounds that never occur in the same position within the word. Allophonic sounds are said to occur in complementary distribution when they occur in mutually exclusive environments that is, they do not occur in the same environment. English oral and nasal vowels are examples of sound segments that never occur in the same position. The oral vowels occur in final positions in words and the nasal vowels do not; the oral vowels occur before oral consonants and the nasal vowels do not; and the nasal vowels occur before nasal consonants while the oral vowels do not. In a nutshell, wherever the oral vowels can occur, the nasal vowels do not occur and verse versa. Thus, they are said to complement each other or are in complementary distribution. In another example from English, voiceless plosives /p/, /t/,

or/k/ are aspirated (produced with extra puff of air) when they occur in word initial positions /p^h,/ /t^h/ /k^h/, but they are unaspirated (produced without extra puff of air) when they occur elsewhere. The following examples illustrate further.

3 peep [p^hi:p]
tank [t^haŋk]
cake [k^heɪ k]

4 spit [spit]
steal [sti:l]
skip [skɪ p]

The aspirated plosives [p^h], [t^h] and [k^h] occur word initially while the unaspirated counterparts can occur elsewhere (e.g. after an [s] sound). Therefore, both the aspirated plosives [p^h], [t^h] and [k^h] and the unaspirated ones [p], [t] and [k] are allophones of the same phonemes /p/, /t/ and /k/ in complementary distribution since each sound occurs in a different position.

Allophones in Free Variation

There are instances where you have a pair of words with a difference in one sound segment, but do not make for a difference in meaning. For example, in Ibibio, /ùrùà/ 'market and /ùdùà/ 'market' both have the same meaning even though they differ in one sound segment, /r/and /d/. This pair of words does not constitute a minimal pair and so the sounds are not different phonemes since they do not make for a difference in meaning. In Ikwerre (a variety of Igbo spoken in Rivers State, Nigeria), the sounds [s] and [ʃ] are in free variation. They occur in medial position and do not change the meaning of the words in which they occur risi [rísí] 'head'and rishi [rí́ʃí́] 'head'. These sounds are said to be in free variation that is, they can substitute for each other without making a difference in meaning.

SELF ASSESSMENT EXERCISE 1

1. Phonology is the study of sound systems and patterns of a language.
   True/False
2. Minimal pairs are words that contrast only by one sound in the same position.
   True/False
3. An allophone is a phoneme that makes for a difference in meaning.
   True/False
4. Allophones i n free variation occur in the same phonetic environment and bring about a change in the meaning of the words where they occur.
   True/False

3.2 Distinctive Features

In 3.1, we discussed phonemes that make for a difference in the meaning of words. Phonemes themselves are made up of features that distinguish them from one another. Distinctive features enable us to group sounds into classes that share similar features. These groups of sounds tend to undergo similar phonological changes. First, you have seen how sounds have been grouped into two general classes namely, consonants and vowels based on how they are produced. The two classes are furthered classified based on their place and manner of articulation. So you have stops, fricatives, affricates, liquids or glides based on the manner of articulation; and bilabial, labiodentals, alveolar, palatal, velar, uvular and glottal based on the place of articulation. Consonants are also distinguished according to voicing. They can also be classified based on certain features that distinguish a large class of sounds from another such as labials, coronals, anteriors, and sibilants. For example, we have already seen how consonants and vowels are grouped into two separate classes; stops are grouped separately from fricatives and so on based on the similarity of features each group shares. For example, /b/ and /p/ are the same in every feature except in voice. While /b/ is [+voice], /p/ is [-voice]. In English, the aspiration rule will apply to all [-voice] stops in word initial position. Such generalizations can be made when group of sounds that share certain distinctive features are identified. Fromkin et al (2003) defines a distinctive feature as 'when a feature distinguishes one phoneme from another, it is a distinctive feature (or a phonemic feature). When two words are alike phonetically except for one feature, the phonetic feature is distinctive since this difference accounts for the contrast or difference in meaning'. Distinctive features are indicated in binary terms with two values: plus (+) indicating presence or minus (-) indicating absence. Only distinctive features can be indicated, so aspiration will not be listed for English because it is a non distinctive feature, but it is distinctive in other languages like Thai. Also distinctive features are indicated only where they contrast with other sounds where it is absent.

Do you recall that we distinguished all sounds as either consonants or vowels? Now we want to look at more general classes into which sounds have been grouped by virtue of the features they share.

[+/-Continuants]

Continuants are produced with the stream of air flowing out of the mouth without obstruction. This group includes all consonants except stops and all vowels.

[+/- Obstruents]

Obstruents are sounds produced with obstruction. They include non nasal stops, fricatives, and affricates.

[+/-Sonorants]

Sonorants are produced with an obstruction of airflow in the mouth or nose. Sounds that are not obstruents are sonorants. They include nasal stops, vowels, liquids, and glides.

[+/-Consonantal]

All consonantal sounds are consonants but not all consonants are consonantal. Glides are non-consonantal. The following features are also used to further classify sounds within the consonantal group: labials, coronals, anterior, sibilants.

[+/- labial]: Sounds involving the use of the lips. They include all labial sounds.

[+/-Coronal]: Sounds articulated by the raising of the tongue blade. They include all

alveolars, palatals, affricates and liquids.

[+/- anterior]: Sounds articulated in the front part of the mouth. They are labials, dentals, and alveolars.

[+/-sibilants]: Sounds produced with friction. They are fricatives and affricates.

[+/-syllabic]: Sounds that function as a peak. They are syllabic liquids, syllabic nasals, vowels.

In addition to the syllabic and nasal features, other features for vowels include +/- high, +/-round, +/-low, and +/-ATR.

Based on the above descriptions, figure and are distinctive features for consonants and vowels respectively.

Figure 1: Distinctive features for Consonants

	p	b	m	t	d	n	k	g	ŋ	f	v	θ	ð	s	z	ʃ	ʒ	tʃ	dʒ	j	l	r	j
Cons	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
sonorant	_	_	+	_	_	+	_	_	+	_	_	_	_	_	_	_	_	_	_	_	+	+	_
syllabic	_	_	+/-	_	_	+/-	_	_	+/-	_	_	_	_	_	_	_	_	_	_	_	+/-	+/-	_
nasal	_	_	+	_	_	+	_	_	+	_	_	_	_	_	_	_	_	_	_	_	_	_	_
voiced	_	+	+	_	+	+	_	+	+	_	+	_	+	_	+	_	+	_	+	+	+	+	+
Cont	_	_	_	_	_	_	_	_	_	+	+	+	+	+	+	+	+	_	_	_	+	+	+
labial	+	+	+	_	_	_	_	_	_	+	+	_	_	_	_	_	_	_	_	_	_	_	_
alveolar	_	_	_	+	+	+	_	_	_	_	_	_	_	+	+	_	_	_	_	_	+	+	_
palatal	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	+	+	+	+	_	_	_	_
anterior	+	+	+	+	+	+	_	_	_	+	+	+	+	+	+	_	_	_	_	_	+	+	_
coronal	_	_	_	+	+	+	_	_	_	_	_	_	_	+	+	+	+	+	+	+	_	_	_
sibilant	_	_	_	_	_	_	_	_	_	_	_	_	_	+	+	+	+	+	+	+	_	_	_

	I	ɪ	i:	e	ɛ	æ	u	ʊ	u:	o	ɔ:	ɔ	a	ʌ	ə	ĩ	ɔ̃	ẽ	ɛ̃	ã	ũ	♡
syllabic	+	+	+	+	+	+	+	+		+		+	+	+	+	+	+	+	+	+	+	+
High	+	+	+	_	_	_	+	+	_	_	_	_	_	_	_	+	+	_	_	_	+	+
round	_	_	_	_	_	_	+	+	+	+	+	+	_	_	_	_	_	_	_	_	+	+
Low	_	_	_	_	_	+	_	_	_	_	_	_	+	_	_	_	_	_	_	+	_	_
ATR	+	_	_	+	_	_	+	_	_	+	_	_	_	_	_	+	_	+	_	_	+	_
nasal	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	+	+	+	+	+	+	+
Long	_	_	+	_	_	_	_	_	+	_	+	_	_	_	_	_	_	_	_	_	_	_

Figure 2: Distinctive features for Vowels

SELF ASSESSMENT EXERCISE 2

1. Distinctive features enable us to group sounds into classes. *True/False*
2. List the five major groups of distinctive features by which consonants are classified into general classes.
3. [m, n, ŋ, ɲ] do not share the same features, therefore they do not constitute a natural class of sounds. *True/False*

3.3 Suprasegmentals

Each sound segment that makes for a difference in meaning is recognised as a distinct sound in the language. However, there are other phonetic features of sound segments whose presence in addition to the segment's properties make for a difference in meaning. Sound segments that have the same properties, place and manner of articulation may differ in length of production, pitch (loudness), or stress (intensity/loudness and length of production relative to that of other sounds in a word). These features are called suprasegmentals because they occur over and above the basic phonetic features of the sound segment themselves and constitute a part of the parameters for their description. The domain of suprasegmentals is the *syllable* which we have defined as the smallest minimal unit of a word. The core of a syllable is the vowel segment which carries the loudness or length. It is important to understand the role the syllable plays in relation to suprasegmentals. English for example has stress-timed rhythm such that in connected speech, stressed syllables occur at regular intervals; the suprasegmental feature is stress and its domain is the syllable. Suprasegmentals are also known as 'prosodic' features because they reflect rhythm and autosegments. We will discuss the suprasegmental features of stress and intonation, pitch and tone, and vowel harmony.

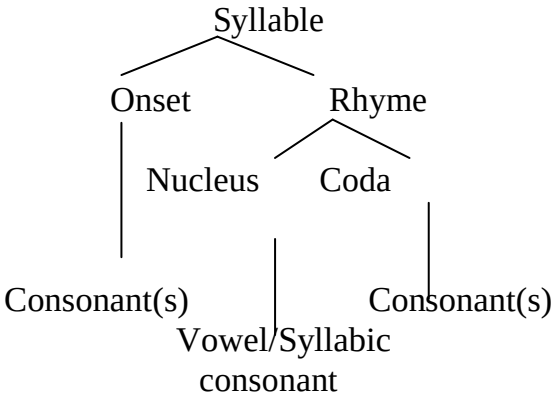
3.3.1 Syllable

From a phonetic point of view, a syllable is a unit of sound(s) consisting of a centre which is characterized by having little or no obstruction of airflow in its production and is relatively louder than other sounds within the unit. For example, in the word [ki:] 'key', the vowel /i:/is the sound produced with little or no obstruction in the airflow and it is produced with relatively more loudness than /k/. The sound segment with the loudest peak is the most compulsory component of a syllable and it is usually a vowel or a liquid or nasal with vowel qualities. The syllable is the smallest minimal unit of language that can be pronounced in isolation. From a phonological point of view, a syllable is defined in terms of its structure that is, the number of syllables a language permits in a word and the number of consonants a language permits to occur with the vowel as well as where in a word combinations of consonants and vowels are allowed to occur. As a general principle, a syllable boundary (/) is inserted after every vowel in a word. Other language specific principles may apply to guide the number of consonants permitted per syllable. For example, English permits four syllable words like es/ta/blish/ment with a vowel as the centre of each syllable. English also permits syllables to have two or more consonants together in the word initial position and up to four consonants together in word final positions. However, there are restrictions as to the kind of consonants that can occur together in each case. In contrast, most Nigerian languages do not permit consonants to occur together. The syllable is a key feature of most languages of the world.

As a phonological unit, the syllable consists of three components: an **onset, nucleus** and a **coda**. These components are made up of sound segments. While the onset is an optional component comprising consonant sounds, the nucleus and coda are called the **rhyme** part of a syllable which comprises the vowel and final consonants. Words like 'I' [**aɪ**] and 'owe' [əʊ] consist of a single syllable that has no onset and with a rhyme that has no coda. On the other hand, words like 'splint' [**splɪ nt**] and 'stripes' **[straɪ ps**] consist of single syllables that have onsets comprising three consonants, and codas comprising two consonants. The word 'come' [kʌ m] is another e x a m p l e o f a one-syllable word with three sound segments [k], [ʌ] and [m]. The most prominent in loudness of the three sound segments is the vowel [ʌ] and is the nucleus of the one syllable word. The initial consonant [k] is the onset while the rhyme is [ʌ m]. The rhyme is further divided into the nucleus [ʌ], the vocalic part and the final consonant [m] following the vowel is the coda.

From the examples given, it is obvious that the only obligatory component of the syllable is the nucleus which can be a vowel or syllabic consonant. Both the onset and the coda are optional components of a syllable. The structure of a syllable is shown in figure 3 below:

Figure 3: Components of a syllable



Languages differ in the structure of their syllables. While languages like English can permit more than one consonant in the onset: 'splint' [splɪ nt] and 'stripes' [straɪ ps]; other languages like Hausa and Yoruba permit only one consonant in the onset position as the following examples show:

Hausa	**Gloss**		**Yoruba**	**Gloss**	
ɓarke	burst	2 syllables	bẹ̀mbe	drum	3 syllables
sifiri	zero	3 syllables	pon	ripe	1 syllable

The basic principle of syllable division is guided by the general structure of a syllable. In addition, there are other language specific principles to address problems of syllable division. Languages also have their own principles of distribution which enables us to

know for instance, where the phonemes of a language can occur in a word which of course, has to be in accordance with the phonological pattern of the language. Such descriptions of the distribution of the phonemes which are reduced to generalisations include:

(i) Consonants which can occur at the beginning or at the end of a syllable. In English for example, the phoneme /h/ always occurs syllable initial position. In most Nigerian languages, consonants can occur at the beginning, in the middle but not at the end of a syllable.

English	Gloss	Yoruba	Gloss
əbrʌpt	abrupt	durò	wait
haɪbrɪd	hybrid	kpaŕi	finish

(ii) Consonant clusters that can occur at the beginning, in the middle or even at the end of a word. In English for instance, we can never get more than three consonants at the word final position. Also, if there are three consonants in word initial position, the first consonant must be an /s/, the second may be a /t/, /k/ or /p/ as 'spray' /spreɪ /,'stray' /streɪ / or 'screw' /skru: /. If the second is a /t/, the third must either be /r/. If the second is /p/, the third must either be an /r/ or an /l/. In contrast, most Nigerian languages do not permit consonant clusters.

(iii) Vowels which can occur in different syllable types, in different positions within words, in cluster and in a particular position within a cluster. In English as well as in Nigerian languages, vowels can occur as single syllables, and in any of the word positions.

English	Gloss	Igbo	Gloss
aɪ	I	ọ	he
əweɪ	away	akwukwọ	book

Statements on the distribution of syllables help to confirm the validity of linguistic analysis. They are also relevant for language learning by enabling us to identify and compare languages with distribution of sounds that are different from those of learners. Through the knowledge of how syllables and phonemes are distributed in a language, new words which will conform to the language's structure can be formed.

SELF ASSESSMENT EXERCISE 3

1. A syllable is the smallest minimal unit of a word. True/False.
2. Identify the component parts of a syllable.

3.3.2 Stress

Stress is the most studied of all the suprasegmentals. Stress is the force with which a syllable is produced. Perceived loudness accompanied with muscular effort in the lungs region is an important feature. Depending on the strength with which a syllable is produced, the following types of stress can result:

(i) Primary Stress

The primary stress is the type of stress that is produced with a maximum breath force. Every English word, no matter how many syllables it is made of, carries only one primary stress. For example, in the word 'again' [əgeɪ n], the primary stress is on the second syllable. The common characteristic feature of a syllable bearing a primary stress is prominence realized as loudness, length and pitch, e.g. /edʒˈkeiʃn/ (primary stress is usually indicated with a super script)

(ii) Secondary Stress

Secondary stress is placed on a syllable made with less breath force. It is referred to as weak stress. For instance, the first syllable in word əgeɪ n] carries a secondary stress (secondary stress is indicated with a sub- script)

(iii) Tertiary Stress

This is produced with a still weaker breath force. Normally both the secondary and tertiary stresses are ignored except in words of more than two syllables and in compound words.

Lexical Stress

In English, stress on lexical items is predictable and is assigned according to grammatical functions. For example, the placement of stress can show whether similar forms are nouns or verbs as the following examples show:

Nouns	**Verbs**
'export	ex 'port
'import	im ' port
'contrast	con ' trast

3.3.3 Pitch

Pitch is the auditory phonetic property of a sound that enables a listener to place it on a scale from low to high or vice versa. Pitch is related to the rate of vibration of the vocal cords (Ladefoged: 1993). Certain factors influence the pitch of the sound produced by a speaker. Some of these factors include the tension of the vocal cords and the rate of the airflow from the lungs. An increase in the flow of air from the lungs will automatically lead to an increase in the pitch of the voice. Also different states of the glottis may affect the pitch of the sound segments. There is likely to be a rise in pitch when the vocal cords are vibrating than when they are not. The pitch of the voice is linguistically used to convey such information as stress, tone and intonation. All languages in the world make use of at least two of these phenomena to convey linguistic information.

English for example, has several word pairs that differ only in which syllable is stressed or produced loudest. In words like *escort, import, perfect, record* and so on, they are nouns if the first syllable is stressed, and are verbs if it is the second syllable that is stressed. Like stress, pitch also can make a difference in some languages.

3.3.4 Intonation

Pitch patterns (low and high) which stretch over phrases and sentences are known as intonation. It is the pitch contour or pitch variation of a phrase or sentence realized through the vibrations of the vocal cords. The various changes in pitch of the voice in the same utterance give rise to different intonation patterns. The various intonation patterns of utterances in any language are significant. This is because; they carry part of the meaning of the utterances. Every language has its own characteristic intonation patterns (contour) just as every language has its own sound system. Some intonation patterns are used for making statements; o t h e r s are used for questions, w h i l e others are for commands. A variety of meanings can be given to a particular utterance depending on the intonation pattern that is used. This means that the meaning of an utterance is derived not only from its changing sound or tone pattern but also from the associated variations of pitch. The phenomenon of intonation has been extensively studied especially in languages such as English, which are referred to as non-tonal languages.

Before now, the assumption had been that tone languages do not have intonation. This assumption is however wrong given the latest findings from languages such as Isoko (Donwa-Ifode 1995) and Essien 1990, Urua 2000, Esan (Ejele 2003) which are tonal languages with intonation. In English for instance, a falling intonation starts from a high pitch and glides to a low one. Generally, the falling intonation implies finality or completion. It is used among other things to indicate a statement, a command and an exclamation as the following examples show.

(a) I am ↘ there (Statement)
(b) Come ↘ here! (Command)
(c) What a ↘ beauty! (Exclamation)

A rising intonation (tune) is used in:

(d) expression of items on a list except the last one (books ↗ pencils ↗, ruler ↗ and a piece of chalk)

(e) Non WH Questions, i.e., without Wh-word such as ‘How’ (e.g. Did you see him?) ↗

(f) Statement –turned Question (e.g. you are coming?) ↗ e.t.c

3.3.5 Tone

Tone is the distinctive and relative pitch on each syllable. Pike (1948:3) defines a tone language as one which has 'significant, contrastive, but relative pitch on each syllable'. Unlike stress, different tones can contrast lexically in given phonological contexts. Tone languages are found in sub-Saharan Africa, South – East Asia, Australia and Mexico. Such languages are said to have syllable-timed rhythm such that syllables occur at regular intervals in connected speech. In many African languages, the suprasegmental feature of pitch of individual vowels or syllables is used to make a difference in meaning of words that have the same segmental properties. When this happens, tone is said to perform a **lexical function**. Such languages are called tone languages. Tones are indicated by diacritical marks, the acute mark for high tone (´); the macron for mid tone (-); and the accent grave for low tone (`). Yoruba for example, has three tones, high, mid and low while Igbo and Hausa have two tones:

Yoruba	**Igbo**
ígbá HH 'calabash'	ákwá HH 'cry'
ìgbà LL 'time'	àkwà LL 'bridge'

Efik
Obong HH Mosquito
Obong HL King

ígbà HL 'locust bean' ákwà HL 'cloth'
igba MM 'two hundred àkwá LH 'egg'

Hausa
[wa**:**ri**:**] HH waarii 'bad odour'
[wa**:**rì**:**] HL waarìì 'one pair of shoe'
[wà**:**ri**:**] LH wààrii 'age mate'

Source: Yusuf, 2007

These level tones can also combine to give contours, like *rising* and *falling*. In Hausa for example, the high tone combines with the low tone across morpheme boundaries to form a falling tone:

nàzo /na+à zò /	I will come	nàzó	I came
kàzo/ka+à zò /	You will come	kàzó	You came
yàzo/ya+à zò /	He will come	yàzó	He came
tàzo/ta+à zò /	She will come	tàzó	She came

Tone also performs a **grammatical function** when it distinguishes between sentences that are the same except for the tones they bear. Again, tone performs grammatical function in Igbo as the following examples show.

(a) Ojèrè ulọ̀ 'S/he went home'
(b) Òjèrè ulọ̀ 'Did s/he go home?'

The difference in meaning between sentences (a) and (b) is in the placement of tone.

3.3.6 Vowel Harmony

Vowel harmony is a phonological feature in which all vowels within a defined unit agree in one phonetic value. The phonetic value can be any one of the vowel features, vowel height or position of the tongue root that is advanced tongue root (ATR). The vowels of a language that show harmony with respect to one phonetic feature are classified into harmonic sets. Vowel harmony is a feature unique to African languages, thus English does not have vowel harmony. There are two types of vowel harmony, incomplete or partial and complete or full. Vowel harmony is found in Nigerian languages including Igbo, Yoruba, Ebira, Igede, Urhobo, and Idoma.

Complete Vowel Harmony

Complete vowel harmony refers to when the vowels of a language can be divided into two harmonic sets without any of the vowels from one set being found in the other. All the vowels of a word including affixes will come from only one of the sets. Languages with complete vowel harmony usually have nine or ten oral vowels. Igede for example, has nine oral vowels and they can be divided into two harmonic sets based on their occurrence in words and according to the phonetic feature of ATR that they share:

Set 1[+ATR]		Set 2 [-ATR]	
i	u	ị	ụ
e	o	ẹ	ọ
		a	

The vowels in Set 1are produced with an advanced tongue root, while those of Set B are produced with a retracted tongue root. All morphemes in the language will have their vowels from only one of the sets as is illustrated below:

[+ATR]		[-ATR]	
i'go	calabash	'itsá	arrow
roʾnḿe	run	falẹ	to refuse
ùbè	room	dzẹ̀ruÞ	to walk
oʾkụ̀i	nose	uʾvọʾh̩i	cat
udő	basket	uʾtẹ	root

Source: Yusuf, 2007

Igede has only prefixes as affixes and they also obey the vowel harmony rule such that the root vowel assimilates the [+/- ATR] feature of the prefix vowel. The examples below illustrate this in the formation of verbal nouns. The prefix is o or ọ, the root reduplicates and the vowel assimilates the [ATR] feature of the prefix:

[+ATR]				
Hò	to fly	ò+hòhò	òhòhò	flying
jẹ	to get	o+jeje	ojeje	getting
gbú	to die	o+gbugbu	ogbugbu	dying
[-ATR]				
rù	to come	ọ̀+ rùrù	ọ̀rùrù	coming
dzẹ́to	know	ọ+ dzẹ’dzẹ́ọdzẹ’dzẹ́		knowing
wà	to count	ọ̀+ wàwà	ọ̀wàwà	counting
đi	to beat	ọ+ diḍi	ọdidi	beating

Partial Vowel Harmony

A system with partial harmony is one in which some vowels of one set can co-occur with vowels of the other set within a word. Languages with partial harmony usually have seven vowels or less. Yoruba is an example of a Nigerian language that operates partial vowel harmony based on the [ATR] feature:

Set 1 [+ATR]		Set 2 [-ATR]	
i	u	i	u
e	o	ẹ	ọ
a		A	

Do you observe that [i], [u] and [a] occur in both sets? They are called neutral vowels, that is they can co occur with vowels from both sets.

Here are some examples:

Set 1		Set 2	
ìró́	wrapper	irọ	lies
ìwé́	book	ọti	liquor
òwe	proverb	ẹrù	load
ètò	plan	awọ	skin
eku	rat	ẹ̀ri	witness

Another rule is that, although [e, o] and [ẹ, ọ] belong to separate sets; they can co-occur only if one of the neutral vowels is between them. Let us see how they co-occur in the following examples:

[+ATR]	[-ATR]
ewúrẹ́	òwúrọ̀
odídẹrẹ́	àkùkọ
orúkọ	abúrò
òrùka	òbúkọ
ewúro	òrìsà

SELF ASSESSMENT EXERCISE 4

1. How is pitch marked in your language? List a pair of words that have the same sound segments but have different meanings as a result of different tones.
2. The difference between intonation and tone is that intonation is syllable based while tone is stress based. *True/False*
3. In Nigerian languages, vowel harmony is based on the feature [+/-nasal] *True/False*
4. Vowel harmony can operate partially or fully *True/False*

3.4 Phonological Processes and Rules

In connected speech, sounds are produced in form of a long string of sounds rather than in isolation. Sounds in the environment of other sounds, across morpheme and word boundaries tend to undergo various phonological changes referred to as phonological processes. A sound can change to look like a close by sound through a process called assimilation; or a sound can be dropped in the presence of another through a process called deletion; a sound can be inserted through an insertion process and so on. Because these processes occur to segments with similar features and in similar environments, rules are generated to account for the changes. In English for example, a process of assimilation occurs when vowels that occur before nasal consonants within the same syllable become nasalized:

/bænd/ [bæ̃nd] ⟶

The nasalisation rule states that oral vowels become nasalized before nasal consonants within the same syllable. The rule can also be written as a formula using distinctive features thus:

$$\begin{matrix} & V & & & C & \\ +\text{syllabic} & \left[\begin{matrix}+\text{nasal}\\ \\ \end{matrix}\right] & \longrightarrow & \text{nasal} & \left[\begin{matrix}\$\\ \\ +\text{voice}\end{matrix}\right] \\ -\text{nasal} & & & +\text{consonantal} & \end{matrix}$$

The arrow stands for 'becomes'; the features under V distinguish oral vowels; [+nasal] stands for the feature to be assimilated; the slash demarcates the environment in which the assimilation is to take place; the features under C distinguish nasal consonants'; and the dollar sign indicates a 'syllable boundary'.

Only the phonological processes and rules that occur in English and Nigerian languages will be discussed here with examples, and they are Assimilation, deletion, epenthesis, and nasalisation.

Assimilation

The process of assimilation is one by which the features of a segment or suprasegment spreads to surrounding segments. We have already seen one example from English earlier on in which the nasal feature of a nasal consonant spreads to the vowel before it. Since it involves just one feature of a segment, it is called partial assimilation. In full assimilation, the segment assimilates all the features of the other as in this example from Yoruba:

ilé+iwe	→ ilèèwé	school
owo + ilé	→ owòolé	rent

Deletion

The process of deletion involves the loss of a sound segment or suprasegment when morphemes or words are combined together. The deletion process occurs in English and many Nigerian languages. In English, different phonetic forms can be derived from the same morpheme by deletion:

Sign [sa**i**jn] → signature [sɪgn ətʃ ər]
Paradigm [p^{h}ærəda**i**jm] → paradegmatic [p^{h}ærədɪ gmætik]

The rule governing this process states to delete a /g/ when it occurs in word initial position before a nasal consonant or before a word final nasal.

In this example from Ebira, the vowel of the verb is deleted:

verb + noun

mɛ̀	+ ore	→ mòre	'to cook water yam'
nà	+ uye	→ núye	'to sell meat'
tú	+ ɛvú	→ tɛvú	'to hit a goat'

The rule governing this process will state to delete a vowel in word final position before another vowel.

In connected speech in Yoruba, consonants are deleted within a word:

dara daa good
jọ̀wọ́ jọ̀ọ́ please
duró duó wait

Epenthesis

The process of epenthesis is one by which sound segments are inserted into a word to make the structure of the word conform with the language's syllable structure. In many Nigerian languages, epenthesis is employed when words are borrowed from other languages. For languages that do not permit consonant clusters, a vowel segment will be inserted to break the cluster. Here are some examples:

Loan word	**Edo**	**Yoruba**
Motor	emoto	mòtò
Bread	eburedi	bùrèdì
School	esukulu	Sùkùùlù

Nasalisation

The process of nasalization involves an oral phoneme becoming nasalized in the environment of a nasal segment. We have already seen in earlier example from English how an oral vowel became nasalized in the environment of a nasal consonant. The same process occurs in Nigerian languages. Here are examples from Yoruba:

ẹmu ⟶ ẹm̃ı̃ 'palmwine'
ọ̀nà ⟶ ọ̀ñã̀ road
ọmọ ⟶ ọm̃ọ̃ child

SELF ASSESSMENT EXERCISE 5

Assimilation involves the spread of a feature or segment unto another segment in the surrounding environment *True/false*
The term, Epenthesis is the same as ……
The process of deletion can apply only to vowels *True/False*
In English, nasal consonants can nasalize oral vowels in their environment *True/False*

4.0 CONCLUSION

Phonology is the part of the grammar of a language that enables us to combine sounds to produce larger units of morphemes, words, and sentences. This is also the reason why we are able to recognize sound sequences which do not adhere to sound sequences that are acceptable in the languages we are familiar with.

5.0 SUMMARY

In this unit, we discussed phonology, the aspect of linguistic study that is concerned with how sounds are patterned in particular languages. We learned that the aim of phonological study is to discover the sound system and patterns of a language by identifying its phonemes. The methods for distinguishing phonemes are by contrasting them through minimal pairs and complementary distribution. We also learned that the difference between phonemes and allophones is that allophones are variants of phonemes. We examined the components of the syllable as comprising of an onset, nucleus and coda. We discussed extensively suprasegmental features of languages namely stress, intonation, pitch, tone, and vowel harmony. Finally we looked at the various phonological processes and rules by which sound segments undergo changes in the environment of other sounds.

6.0 TUTOR-MARKED ASSIGNMENT

1. In what ways is a phoneme different from an allophone?
2. Discuss at least two suprasegmental phonological features providing examples from any language.
3. With some examples from English and one Nigerian language, discuss briefly the term 'phoneme'
4. Provide at least six examples of minimal pairs in your language.
5. Distinguish between allophones in complementary distribution and allophones in free variation.
6. Look at the following words in English and briefly explain the process and rule in operation:

prefix	+		adjective	
iN	+	→	possible	impossible
iN	+	→	tolerance	intolerance
iN	+	→	complete	incomplete

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UNIT 4 MORPHOLOGY

CONTENTS

1.0 INTRODUCTION

When learning a new language, the first items we learn are the names of things. Every language identifies things by naming them using words. Our focus in this unit is on the structure of words. Do you remember the first level of study we discussed? So far we have looked at the smallest unit of a language, speech sound. Then we looked at how sound systems are structured. Just like the other levels of linguistic study that we have discussed, morphology also has a basic unit of study, the morpheme. In this unit therefore, we will define morphology and what constitutes a morpheme; types of morphemes; allomorphs; roots and bases; clitics and affixes; process of affixation; the classification of affixes based on position and function; the structural classification of words and processes of word formation.

2.0 OBJECTIVES

At end of this unit, you should be able to:

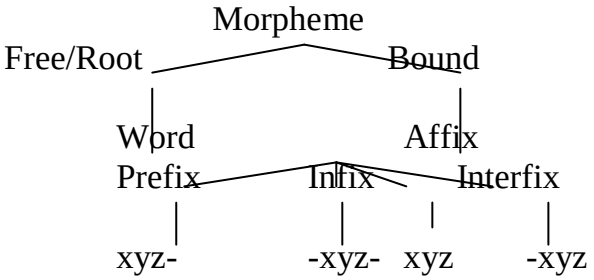
- define morphology and the morpheme
- describe morpheme types
- distinguish between morphemes and allomorphs
- identify and describe the components of the morpheme structure
- explain the process of affixation
- list and describe some strategies for word formation.

3.0 MAIN CONTENT

3.1 Defining Morphology and the Morpheme

Morphology is the level of linguistic study concerned with the internal structure of words and rules of word formation (Katamba, 1993). Morphology serves as "a bridge between the syntax of a language and its phonology" (Brown and Miller, 1980). It is devoted to the study of rules governing the formation of words in human language. The morpheme is the smallest meaningful grammatical unit. The morpheme is the basic unit that combines to form words. A word may be "defined as the minimum independent linguistic unit having an identifiable meaning and grammatical function with a fairly consistent phonological shape" (Aitchison, 1992, cited in Ndimele 1999:3). The word is the basis of the distinction that is always made between morphology (the study of the internal structure of words) and syntax (the study of sentence structure). There are two basic types of morphemes, **bound** and **free** morphemes. Bound morphemes cannot stand on their own, and make meaning. They attach to free morphemes to add meaning. Bound morphemes are further subdivided into affixes that comprise prefixes, infixes and suffixes. In English, morphemes like *-tion* as in *combination*, and *-ly* as in *kindly* are bound morphemes. Below is a diagram that illustrates the structure of the morpheme which makes up the word.

Figure 1: Structure of the morpheme



Source: adapted from Yusuf, 2007

3.1.1 Free Morphemes

Free morphemes are those morphemes that can occur in isolation without having to be attached to some other grammatical unit, they occur freely. All free morphemes are words that stand on their own. Free morphemes function as *lexical* or *grammatical* morphemes.

Lexical Morphemes

Lexical morphemes are free morphemes that have independent dictionary meaning of their own. That is, it is possible to look up these words and find their meaning. In English language, lexical morphemes include nouns (man, place, teacher, occasion, etc.), verbs (bring, come, take give, etc), adjectives (happy, slow, bright, etc), adverbs, (slowly, happily, quickly, etc.). In Nigerian languages as in English, lexical morphemes include nouns, verbs, adjectives and adverbs. We illustrate with examples from Ibibio:

Nouns: ówó ‘person; ìmé ‘patience; ányén ‘eye’.
Verbs: nyàm ‘buy’; bóp ‘build’; sé ‘look’.
Adjectives: àfiá ‘white’; àbúbít ‘black’.
Adverbs: ùtò ùtò ‘yellowish’; ńdoəm ńdóm ‘milky’.

Grammatical/Functional Morphemes

Grammatical/functional morphemes are those free morphemes that do not have independent dictionary meaning of their own. That is, for these kinds of morpheme, it is quite difficult to say exactly the meaning of such words when one looks them up in a dictionary. These words are merely used to join the lexical words together in structure.

Examples of grammatical/functional morphemes in English include pronouns (he, she it), determiner (a, the, some, that), preposition (on, at, in) and conjunction (and, or, but). Examples of grammatical morphemes in Ibibio include: ké ‘in, at, on’ and yè/m̀mè ‘and, with’.

3.1.2 Bound Morphemes

Bound morphemes are not complete words and cannot occur in isolation. They must be attached to other grammatical units. On their own, their meaning cannot be realised. Types of bound morphemes are affixes, and clitics. We shall discuss each of these in a moment.

3.1.3 Roots

Roots are another word for describing free morphemes. Like the term suggests, it is the part of the word to which bound morphemes can be added to make other meanings of a word. The root constitutes the core of the word which cannot be divided further. A root can be a *free* root or a bound *root*. Here are examples of free root morphemes in the following words:

demi –*god*-ess im-*proper*
un-*interrupt practic*-able

A bound root morpheme on the other hand, is the kind of morpheme that cannot occur in isolation. It always occurs with other word-building elements attached to it (Katamba, 1993). A bound root can be *contracted* or *non-contracted*. A contracted root is a type of root where one or more of its members have been deleted (Ndimele, 1999). The deleted part of the root can be indicated by the use of an apostrophe before attaching the contracted part to some other word in some writing systems. This is the case in English as the following examples show:

(a) I’**ll** (I will)
(b) We’**ve** (We have)

The contracted roots in the above examples are *will* and *have*.

Examples of non-contracted roots in English include –**mit** (as in permit, remit, submit), -**dent** (as in dental, dentist, dentition), **econom-** (as in economy, economic, economics). The non-contracted roots require other bound elements to occur before or after them.

SELF ASSESSMENT EXERCISE 1

1. A morpheme is the smallest ……..meaningful, grammatical unit of a word True/False
2. Another word for allomrophs is……..
3. Morphemes can be ……. or bound.

Types of Bound Morphemes

Bound morphemes can be clitics or affixes. A clitic seems to be a separate word but unlike a word cannot be stressed and must occupy a particular position in a sentence where it is bound to is host (Trask 1993). A clitic can attach to any free or root morpheme (whether noun or verb) as long as the free/root morpheme is located at the appropriate position. There are two types of clitics: a proclitic and an enclitic. Whereas a proclitic occurs before its host, an enclitic occurs after its host. Clitics are found in some indigenous Nigerian languages (e.g. Igbo). **kwa** and **nu** are examples of clitics in Igbo:

Igbo

‘rièkwá	‘eat also’
èzè kwá	‘Eze (personal name)also’
‘rièńú	‘eat (emphatic)
ezènù	‘Eze (emphatic)

Note that the clitics bear high tones.

3.2 Affixes in Inflectional and Derivational Morphology

Affixation is a morphological process of attaching an affix to the root or base of a word (Ndimele 1999). An affix is a type of bound morpheme that is always attached to the base or root of a word. Affixes are classified based on their position or the function they can perform. We shall discuss this classification shortly.

Positional Classification of Affixes

In terms of position, affixes are classified into the following:

(a) **Prefix:** A prefix is the type of affix that occurs before the root or base of a word. Examples in English *in-*, *un-*, *semi-*, *im-*, *dis-*, etc. (as in insensitive, unkind, impossible, disable).

(b) **Suffix:** This is the type of affix that occurs after the base or root of a word. Suffixes in English include –er, -ful, -less, -ish, -hood, etc. (as in teacher, helpful, boyish, heartless, fatherhood).

(c) **Infixes and interfixes:** These are morphemes to which prefixes and suffixes are attached. Infixes occur within a word. Interfixes occur between two identical or non- identical roots. An interfix interrupts the sequence of two roots. Unlike in English, Igbo has examples of interfixes:-m-,-r-,(as in ànù*m*ànu 'meat', èkwù*r*èkwu 'talkative'). The interfixes are in italics.

Functional Classification of Affixes

In terms of function, affixes are classified into *inflectional* and *derivational* affixes.

Inflectional Affixes

Inflectional affixes perform grammatical function. In English, inflectional affixes are used to show whether a noun to which they are attached to is the singular or plural form (e.g. boy*s*), or if the verb to which they are attached to is in the present or past tense (e.g. work*ed*), or if the adjective to which they are attached to is in comparative or superlative form (short*er* or short*est*). Inflectional affixes do not change the word class (part of speech) of the word to which they are attached. They are not used to create new words. All the inflectional affixes in English are suffixes. That is, they occur after their hosts.

Derivational Affixes

Derivational affixes are those affixes that can alter the meaning of the words to which they are attached. Some derivational affixes can change the part of speech of the words to which they are attached while others do not. Some class changing derivational affixes in English include: - ment, -tion, -er, etc (as in *entertainment*, a noun from the verb *entertain*, *correction*, a noun from the verb *correct*, *teacher*, a noun from the verb *teach*). Some class maintaining derivational affixes in English include: ex-, -hood, -ship, etc.(as in *ex-president*, a noun from the noun *president*, *boyhood*, a noun from the noun *boy*, *friendship*, a noun from the noun *friend*). We also illustrate with some examples from a Nigerian language, Ibibio.

Ibibio

Verb		**Noun**	
mа́	'love'	i-mа́	'love'
fàn	'befriend'	ù-fàn	'friend'
nô	'give'	è-nọ̀	gift'

3.3 Allomorphs

Just like for phonemes, morphemes also have alternants or variants, which are known as allomorphs. Allomorphs are the variants of a morpheme. In English, the past tense morpheme can be represented by various forms, including: /t/, /id/, /d/ as in talke**d**, defend**ed** and begge**d** respectively. Examples of allomorphs or morphemic alternants in Ibibio are illustrated with the negative morpheme, which has various shapes depending on the structure of the verb:

CV(V)(C)	CVC	CVVC	CVVCV	CVCCV
ɗa'stand'	dep 'buy'	meèk 'bend'	daа́rá 'rejoice'	ɗappa 'dream'
daа́-há	ɗép-pe	meè-hé	daа́rá-ké	ɗappá-ké
stand-NEG	buy-NEG	bend-NEG	rejoice-NEG	dream- NEG

You would have observed that the negative morpheme varies depending on the verb structure. CV(V) and CVVC verbs take the -hV NEG allomorph (where V is the vowel copied from the verb root); CVC verbs take the -CV allomorph (where C is a copy of the final consonant of the verb root and V a copy of the root vowel; while CVVCV and CVCCV take the -ke allomorph. All these are allomorphs or variants of the NEGATIVE morpheme in Ibibio.

3.4. Structural Classification of Words

Words can be classified into four different groups based on their internal structure or the constituents with which they are composed. These are simple, compound, complex and compound-complex words. Let us discuss them briefly.

3.4.1 Simple Words

A simple word is a free morpheme which consists of only one root without any bound element attached to it. Example of these words includes *boy, nation, culture, gully,* etc. We also provide examples from some Nigerian languages:

Ibibio		**Igbo**		**Yoruba**	
ɗi	'look'	bĭa	'come'	wа́	'come'
utom	'work'	olụ	'work'	iṣẹ	'work'

3.4.2 Complex Words

A complex word is that which comprises one root followed by one or more bound elements. Examples of complex words are ***boy****s*, ***teach****ers*, *en****slave****ment*, ***king****dom*, etc. The root in each of the examples above is in boldface. We now provide examples from two Nigerian languages:

Ibibio		**Igbo**	
ɗe**di**	'be coming'	**bià**wá	'be coming'
màná	'be born'	**nyè**rè	'be given'

Again the root in each case is in boldface.

3.4.3 Compound Words

A compound word is that which consists of two or more morphemes, which are capable of independent existence. Examples of compound words are briefcase, girlfriend, graveside, sister-in-law, etc. We provide examples from two Nigerian languages:

Ibibio		**Igbo**	
uf̀ok ib̀ok	'hospital'	ụlọ ọgwu	'hospital'
inemesit	'joy'	ụlọ enu	'storey building'

3.4.4 Compound-Complex Words

A compound- complex word is that which consists of two or more free morphemes and one or more bound elements. Examples of compound- complex words include *textbooks, overtaken, brothers-in-law,* etc.

SELF ASSESSMENT EXERCISE 2

(1) Discuss briefly some of the information which words can convey.
(2) What are the structural classifications of words?

3.5 Word Formation Processes

New words can be formed through the processes of affixation, borrowing, blending, back formation, conversion, compounding and reduplication. Let us discuss these processes briefly.

3.5.1 Affixation

Affixation can be defined as a morphological process of attaching an affix to the root or base to form *new* words. We have seen how prefixes and suffixes are used in English to create new meanings of words. Examples from Nigerian languages include the following with the affixes are in boldface.

Igbo		**Ibibio**	
ga	'go'	mem	'be soft'
ga-**ba**	'be going'	mem-**e**	'being soft'

3.5.2 Borrowing

Borrowing is simply the process of taking words from one or more languages to fit into the vocabulary of another. Examples of borrowed words into English include *alcohol* (from Arabic), *zebra* (from Bantu), *tycoon* (from Japanese), etc. Usually such borrowed items are integrated into the phonological structure of the target language. We illustrate with examples from Nigerian languages with items borrowed from English:

Ibibio		**Hausa**	
akras	'glass	asibiti	'hospital'
asuob	'soap'		
nkisi	'silk'		

3.5.3 Blending

Blending is a morphological process of creating a new word by combining parts of two or more already existing words in the same language. Examples of blends in English include *smog,brunch* (derived from breakfast and lunch), *telecast* (derived from television and broadcast), *Amerindian* (derived from Indian).

3.5.4 Back Formation

This is a process of creating a shorter word by removing an affix, which was thought to be part of the old word. It is a reduction process that involves change of part of speech. In English, words (verbs) such as *televise*, *donate*, *beg* and *edit* are derived from *television*, *donation*, *beggar*, and *editor* respectively.

3.5.5 Conversion

This is a process where a word undergoes a category change (from verb to noun) without any reduction. In English, words that can function as nouns and verbs include man, place, bottle, father, etc.

3.5.6 Reduplication

Reduplication involves the duplication in part or in whole of a morpheme to form a new word. In Yoruba for example, adjectivisation of verbs involves a partial duplication of the root:

Verb		**Adjective**	
pọ́n	to ripen	pi- pọ́n	ripe
jẹ	to eat	ǰi jẹ	edible
tóbi	to be big	ťi-tóbi	big

3.5.7 Compounding

This is a process of combining two or more independent words to form a single word. Words formed in this way are known as compounds. Some examples are blockhead, textbook, blackboard, etc. For examples from Nigerian languages, see 6.3 above.

SELF ASSESSMENT EXERCISE 3

Affixation is a process of word formation *True/false*

4.0 CONCLUSION

Morphemes are the building blocks of words. Morphology is the bridge between phonology and syntax (the study of sentence structure). Part of the knowledge of the languages we speak includes knowledge of morphology. It is at this level of language study that we notice that words consist of systematic internal structures that are meaningful and also contribute to the overall meaning of the structures where they occur. Every language has some internal mechanism for creating new words and those who speak the language naturally master such mechanisms.

5.0 SUMMARY

In this unit, we have examined the aspect of linguistics that is concerned with the study of internal structure of words. We have looked at its definition, its basic minimum unit (the morpheme), allomorphs, free and bound morphemes, roots and the classification of bound morphemes in terms of their position and function. The different structural classifications of words have been outlined and we have equally discussed some of the ways of creating new words in a language.

6.0 TUTOR-MARKED ASSIGNMENT

1. The following is data from Igbo. Identify and separate the free morphemes and the bound morphemes by inserting (-) in between them:

́Ijé	to go
jèrè	went
òjé	goer
jéghi̇	(did) not go
jè́e	go!

2. Discuss briefly three methods of creating new words in language.
3. Provide at least four examples of the following types of words

(i)	Simple word	(ii)	Complex word
(iii)	Compound word	(iv)	Compound-complex word

4. With good examples from English, illustrate different senses of the term 'word'
5. Explain with examples the process of affixation
6. Mention some strategies that can be used to create new words in a language
7. Briefly discuss borrowing and blending as strategies for the creation of new words.

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UNIT 5: SYNTAX

CONTENTS

1.0 INTRODUCTION

This unit will introduce you to syntax, another level of language study. You will learn some definitions of syntax and agree with the fact that it is at the level of syntax that one sees that language is a highly structured phenomenon. At this level of language study, you will also learn that words combine to form phrases, while phrases combine to form clauses/sentences. Thus, the sentence is a larger grammatical unit of expression, which can comprise phrases and words. In syntax, it is assumed that every normal native speaker of a language has the underlying competence to produce and as well comprehend unlimited number of sentences in his language, even sentences that he has never said or heard before.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- define syntax
- identify words according to word classes in a sentence
- define a phrase
- identify phrases and their types
- define a sentence
- identify sentences and their types in terms of structure and function.

3.0 MAIN CONTENT

3.1 Defining Syntax

So far we have studied speech sounds and the phoneme through phonetics and phonology, and we have examined the morpheme and the word through morphology. Now, we want to look at the largest unit, the sentence which is the object of study in syntax. The sentence is made up of words, phrases and clauses. Syntax, therefore is the study of how words are arranged to form sentences. Here are some definitions of syntax:

"Syntax is the branch of linguistics that is concerned with how words are arranged to build up longer expressions" (Ndimele, 1999).

"The term syntax as used in its broadest sense refers to both the arrangement and the forms of word. It is the part of language which links together the sound patterns and the meaning" (Aitchison, 1992).

"Syntax is the aspect of grammar of a language which deals with how words are put together to form sentences and how such sentences are interpreted in natural languages" (Yusuf, 1997).

Based on the definitions given, it is obvious that syntax uses words as the building blocks to produce phrases, clauses and sentences. The words themselves, when used in isolation will not make much meaning. Also when the words are combined in a haphazard manner, they will not make any sense. These points to the fact that a native speaker of a language will recognize when not properly arranged words in a sentence in line with the rules of sentence formation.

But where does syntax begin? For most scholars, doing the syntax of a language begins with the identification of the word classes, which are traditionally known as the 'parts of speech'. Word classes are conventional labels such as nouns, verbs, adjectives, etc. and are so classified on account of their syntactic behaviour/function (where they can occur in an expression), their form and meaning. However, of these three criteria (function, form and meaning) function is the most important since a particular word can be grouped into different word classes because of its function. In this unit, we shall begin the study of syntax by examining the different word classes since it is the words in these classes that are used to build phrases, clauses and sentences.

SELF ASSESSMENT EXERCISE 1

In your own words define syntax and illustrate with one example each from English and a Nigerian language.

3.2 Word Level Categories

The word level categories are classified into two major classes. These are the open class and the closed class. We shall examine each class in some detail.

3.2.1 Open Class

Words that belong to the open class include nouns, verbs, adjectives and adverbs. Let us look at each of these briefly.

(a) Nouns

Nouns are lexical items that refer to persons, places, things and terms/concepts. The noun can constitute a *noun phrase* (we shall explain this later) and therefore function as the *subject* of a sentence, *object* of a verb or *object* of a preposition. Consider the following sentence.

(1) John gave Mary a book at the shop

In sentence (1), *John* is a noun and functions as the *subject*, *Mary* is also a noun and functions as the *indirect object* of the verb *gave*, while the noun phrases *a book* and *the shop* (which are principally nouns) function as the direct object of the verb *gave* and complement of the preposition *at* respectively.

Nouns can be classified into *proper nouns* (nouns that refer to persons, places, occasions, special events (e.g. John, Lagos, Christmas, etc)) and *common nouns* (nouns, in which a name is used to refer to the members of a class; e.g. man, table, etc.). Common nouns are further divided into *concrete nouns* and *abstract nouns*. Concrete nouns can be seen and touched (e.g. table, dog, box) while abstract nouns (love, hatred, wisdom, etc.) cannot be seen or touched. Concrete nouns can be count or non-count. Whereas count nouns are separable and countable (e.g. book, plate, man, etc.), non-count nouns are conceived as uncountable except when they are measured in units (e.g. salt, water, etc.). Examples of categories of noun from Nigerian languages are as follow.

Proper Nouns			**Common Nouns**		**Abstract Noun**
Names of Persons		*Names of Places*	*Concrete Nouns*		
Hausa:	Danjumà	Kùŕa	zaki	'lion'	magana 'speech'
Igbo:	Àd́a	Àb́a	ewú	'goat'	ozioma 'gospel'
Igbo:	Àd́a	Àb́a	ewú	'goat'	iwaasu 'sermon'

(b) Verbs

Verbs are seen as the most important part of the predicate slot of a sentence (the predicate is the part of the sentence that says something about the subject of a sentence). Verbs express actions or states. Examples of verbs in some Nigerian languages include:

Hausa:*kàràntà* 'read'as in *kàrànta ìittàfi* 'read book'Igbo: *ri* 'eat' as in *ŕiéji* 'eat yam

Yoruba: *je* 'eat' as in *je isu* 'eat yam'

Ibibio/Annang: *tá* 'chew' in *taá íyák* 'chew fish'

Kana (Ogoni): n̋e 'give' as in *nye e kpùgì* 'give him money'

In some languages like English, verbs are classified on the basis of three major criteria; morphological, semantic and syntactic criteria.

Morphological Criterion

One morphological classification of verbs is the one that exists between regular and irregular verbs in English. Regular verbs are those whose past and past participle verb forms can be predicted (e.g. work ~ worked ~ worked, stop ~ stopped ~ stopped). On the other hand, the past and past participle forms of an irregular verb cannot be predicted (e.g. break ~ broke ~ broken, cut ~ cut ~ cut). Thus, regular verbs in English form their past and past participle forms with the *–ed* morpheme.

Semantic Criterion

Semantically, verbs can be dynamic or stative. Dynamic verbs are those verbs that express action/event that involve an entity. That is, dynamic verbs are divided into action verbs or event verbs. While the action verbs (e.g. eat, cook, buy, etc,) are used to express the conscious activity of a participant, the event verbs (e.g. die, leave, etc.) do not necessarily express any conscious activity of a participant. The stative verbs express states of affairs and do not involve overt action in their meaning. Examples of stative verbs include be, know, remain, etc.

Syntactic Criterion

One aspect of syntactic classification of verbs (e.g. in English) is the division into lexical main verbs and auxiliary/helping verbs. Auxiliary verbs cannot occur alone in a sentence unless they are followed by lexical/main verbs. The lexical verbs have independent dictionary meaning unlike the auxiliary ones, which are used to express

how the lexical verb is perceived. In English, there are two types of auxiliary verbs. These are the primary auxiliary and the modal auxiliary. The primary auxiliaries are HAVE (with its variants- have, has and had), DO (with its variants- do, does and did), and BE (with its variants-be, am, is, was, are, were, been and being) as used in the following sentences:

(2) John *has* eaten the food.
(3) John *does* eat food.
(4) John *is* eating rice.

It is important to note that a primary auxiliary can also function as the main verb of a sentence as the following examples show.

(5) John *has* a book
(6) They *do* play football.

Modal auxiliary verbs in English include *will*, *can*, *shall*, etc. and they are normally used to reflect the mood of the speaker as can be seen in the following expressions.

(7) Mary *must* leave the house now. [Obligation]
(8) *May* I see you? [Permission]

Another syntactic classification of verbs is into *transitive* and *intransitive* verbs. Transitive verbs are those verbs that obligatorily co- occur with object complements while intransitive verbs do not require any object complement. A transitive verb may be *monotransitive* or *ditransitive*. A monotransitive verb requires only one object complement while a ditransitive verb can take two object complements. Examples are as shown.

Intransitive Verbs: fall, shine, decay, etc. as in:
(i) The rain is *falling*.
(ii) The sun is *shining*.
(iii) The meat has *decayed*.

Monotransitive Verb: kill, kick, hit, etc. as in:
(iv) He *killed* the rat.
(v) John *kicked* the ball.
(vi) She *hit* the door.

Ditransitive Verb: give, buy, lend, etc. as in:
(vii) John *gave* Mary a book.
(viii) John *bought* Peter a bag.

(c) Adjectives

Adjectives denote qualities and they are words that are typically used to modify nouns or

some property referred to by the nouns. Examples of adjectives in English include *happy*, *bad*, *big*, *small*, *white*, *dark*, etc. Adjectives are found in some Nigerian languages as the following examples show.

Hausa: *gúntú*'short' as in *gúntú Bàháùsè* 'a short Hausa man' Igbo: *ọ́chá* 'white' as in *á́kwàọchá* 'white cloth'
Yoruba: *funfun* 'white' as in *aso funfun* 'white cloth'
Kana (Ogoni): *bí̩irá* 'black' as in *bí̩irá kọ́p* 'black cup'

An adjective can be used attributively or predicatively. An adjective is used attributively when it follows or precedes the noun it modifies. In English, attributive adjectives follow the nouns they modify as the following examples show:

(i) a *happy* man
(ii) a *bad* wife

A predicative adjective on the other hand, occurs as part of the predicate of a sentence after a linking verb (e.g. is, remain). Examples:

(i) He is *happy*
(ii) She is *bad*.
(iii) She is *dark*

Adjectives in English are gradable and thus, can admit degree modifiers (e.g. *very* happy, *too* bad, *very* dark). Some adjectives in English have *comparative* and *superlative* forms. To mark the comparative form, some adjectives admit the **–er** suffix while the superlative form is marked by the **–est** suffix (e.g. *short ~ shorter ~ shortest*). These adjectives that take the -er and -est suffixes are referred to as variable adjectives. Some other adjectives admit the words *more* and *most* to mark their comparative and superlative degrees respectively and they are referred to as invariable adjectives. Examples of invariable adjectives in English include *important* (*important ~ more important ~ most important*), beautiful (*beautiful ~ more beautiful ~ most beautiful*).

(d) Adverbs

Adverbs are words that provide specific information about place, time, or manner to the meaning of a verb, an adjective or even a whole sentence (Ndimele 1999). Adverbial notions are expressed in some Nigerian languages with words that are normally reduplicated as the following examples show.

Igbo: *ọsọ̀ọsọ* 'quickly'
ńgwáńgwá quickly

Yoruba: *kíákíá* 'quickly'
òsòòsè 'weekly'

Examples of adverbs in English include *slowly*, *quickly*, *suddenly*, etc. In most languages, adverbs are very mobile and can occu 68 tially, medially or at the final position in a sentence. This is also possible in English as the following examples show.

(i) *Quickly*, John ate the food.
(ii) John *quickly* ate the food.
(iii)John ate the food *quickly*.

Some adverbs are also gradable and can be modified by intensifiers (e.g. *very* quickly). Some are also gradable and can admit the **-er** and **-est** suffixes to indicate comparative and superlative degrees respectively (e.g. soon ~ sooner ~ soonest) Still, some adverbs are irregular in marking their comparative and superlative degrees (*little ~ less ~ least*).

3.2.2 Closed Class

A closed class of item is one of fixed and usually small membership (Lyons 1968:436). The membership of items in this category cannot be extended to accommodate new members and words that belong to this closed class set do not have very significant dictionary meaning. They include the determiners, pronouns, prepositions, conjunctions and intensifiers.

(a) Determiners

Determiners are words that signal the presence of nouns (Noun Phrases). A determiner limits or modifies the reference of a noun or Noun Phrase. The determiner (D) has become a cover term for a group of words that include articles (a, an, the), demonstratives (this, that, these, those), possessive pronouns (my, your, his, her), quantifiers (all, some most) and numerals (one, two, first, second, etc.). Examples of these types of determiners from some Nigerian languages are shown as follow.

(i) Demonstratives

Igbo: *à* 'this' as in *nwáànyìà* 'this woman'
áhu 'that' as in *éféré áh* 'that plate'

Yoruba: *yíi* 'this' as in *obirin yíi* 'this woman'
yẹn 'that' as in *àwoòyẹn* 'that plate'

(ii) Possessive Pronouns:

Igbo: úlọ*m* 'my house'
ulo*gí* 'your house'
ulo*yá* 'his/her house'
ulo*há* 'their house'

Yoruba: ìwé*mi* 'my book'
ìwé*rẹ* 'his/her book'

ìwéè *rẹ* 'your book'

(iii) Quantifiers:

Igbo: *ufodi* 'some' as in *ufodi ḿmáḍu* 'some people'

Yoruba: *gbogbo* 'all' as in *gbogbo ìwé* 'all books'

Hausa: *dàyáwà* 'many' as in *lìtàttàfáí dàyáwà* 'many books'

(iv) Numerals:

Hausa: dókì úkù 'three horses'
dókì bíyar 'five horses'
dókì gómà 'ten horses'

Igbo: ulo àto 'three houses'
ulo ìsé 'five houses'
ulo ìrí 'ten houses'

(b) Pronouns

Pronouns are words, which serve as substitutes to nouns (Noun Phrases). Pronouns normally refer to persons and things and they are divided into different sub-groups such as *personal pronouns* (I, you, we, they, he, she, me us, it), *reflexive pronouns* (myself, yourself, himself, ourselves, themselves), *reciprocal pronouns* (each other, one another), *relative pronouns* (who, which, that, whichever, whose, what, whoever), *interrogative pronouns* (what, which, where, when, who, how), *indefinite pronouns* (everyone, everybody, somebody, someone, nothing). Examples of personal pronouns, which can function as subject of sentences in Hausa and Yoruba, are shown below.

Hausa: ńi 'I (masculine/feminine)'
mú 'we'
káì 'you (masculine)'
ké you (feminine)'
shí 'he'
ìtá 'she'
kú 'you (plural)'
sú 'they'

Yoruba: èmi/mo 'I'
ìwọ/o 'you (sg)'
òun/ó 's/he'
àwon 'they'
ẹ̀yin 'you (plural)'

(c) Prepositions

Prepositions are words that express some kind of relation with respect to time or space between things and events (Hurford, 1994). Prepositions typically occur before a noun phrase complement (e.g. *on* the table, *in* the house, *with* John, *across* the road, *outside* the classroom). In Hausa, Igbo and Yoruba (just as in some other Nigerian languages), the prepositions occur before a noun phrase.

Hausa: *à*Legas as/in Lagos'
*à*Àbá as/in Aba'

Igbo: *nà*Legos as/in Lagos'
n' Àbá as/in Aba'

Yoruba: ńi Èkó (l'Èkòo) as/in Lagos'
ńi Àbá (l'Àba) as/in Aba'

(d) Conjunctions

Conjunctions refer to words, which function to join expressions such as phrases and sentences. A conjunction can be a coordinator or a subordinator. A coordinating conjunction is used to join expressions of equal ranks while subordinating conjunction is used to link expressions of unequal ranks. Examples of coordinating conjunctions (coordinators) in English are *and* (e.g. John *and* Mary, John washed the dishes *and* Mary cooked the food), *or* (e.g. John went to the bank *or* He went to the market), but (Peter washed the dishes *but* Mary cooked the food). Examples of subordinating conjunctions (subordinators) in English include *because* (John left the room *because* of Mary), *while* (John washed the clothes while at home). Examples of coordinating conjunctions from Hausa, Igbo and Yoruba are shown below.

Hausa: ńi *dà* kàî 'I and You'
Igbo Àdá *ná* Ǹgọ́zî 'Ada and Ngozi'
Yoruba: *èmi* àti ìwọ 'I and You'

(e) Intensifiers

Intensifiers (degree modifiers) refer to the class of words that modify adverbs and adjectives, expressing the degree to which a particular quality is found in an entity. Examples of intensifiers are *too*, *very*, *quite*, *extremely*.

SELF ASSESSMENT EXERCISE 2

1. Two basic characteristics of the open class of words are…………………… and ……………
2. Two basic characteristics of the closed class of words are…………………… and ……………
3. List the parts of speech that belong to open and closed class of words respectively.

3.3 Phrases

A phrase is a group of words (sometimes just a word) joined together according to rules of the grammar of a language. Normally a phrase has a *head* and every phrase type derives its name from the *head*. This means that the *head* of a phrase is the obligatory element in a phrase. Thus, if a phrase consists of just a word, such a word must be the *head* word. Other words that can occur with the *head* word within a phrase are mere modifiers to the *head*. There are different types of phrase: noun phrase (NP) verb phrase (VP), adjective phrase (AP), adverb phrase (AP), and prepositional phrase (PP).

3.3.1 Noun Phrase (NP)

Normally the obligatory element within the NP is the noun. The NP can function as the subject of a sentence, the direct or indirect object of a verb or the object of a preposition. In terms of structural composition, the NP can have the following patterns:

(i) A noun alone; NP ⟶ N (*John is here*)
(ii) A determiner and a noun; NP ⟶ D + N (The *book* is there)
(iii) A determiner, an adjective and a noun; NP ⟶ D + Adj + N (*The white plate* is there)
(iv) A determiner, an adjective, a noun and a clause; NP ⟶ D + Adj + N + S' (The *black lady who married John* is here)
(v) A pronoun; NP ⟶ Pro (*He* is here)

3.3.2 Verb Phrase (VP)

The obligatory element in the verb phrase is a verb and the verb phrase traditionally functions as the predicate in a sentence. Recall that the predicate is the part of the sentence that says something about the subject. Structurally, the VP can have the following patterns:

(i) A verb alone; VP ⟶ V (The dog *died*)
(ii) A verb and a prepositional phrase; VP ⟶ V +PP (The dog *played at the park*)
(iii) A verb and a noun phrase; VP ⟶ V +NP (He *killed the snake*)
(iv) A verb, a noun phrase and an optional prepositional phrase; VP ⟶ V +NP (PP) (He *killed the dog in the garden*)
(v) A verb and two noun phrases; VP ⟶ NP + NP (John *bought a Mary a bag*)
(vi) A copular verb and an adverb/ an adjective/an NP; VP ⟶ V_{cop}+Adv/ Adj/NP (He is well/ happy/ a teacher)
(vii) A verb and a full clause; VP ⟶ V + S (John *believes Peter stole the book*)

3.3.3 Adjective Phrase (AdjP)

In the adjective phrase the head is also the adjective. It is the most important word in this type of phrase. In English, the adjective phrase can have the following structural patterns.

(i) An adjective alone; AdjP ⟶ A (The man is *tall*)
(ii) A degree modifier and an adjective; AdjP ⟶ Deg Modifier + Adj. The man is *very tall*)
(iii) An adverb and an adjective; AdjP ⟶ Adv + Adj (The man is *remarkably intelligent*)
(i v) An adjective and a prepositional phrase; AdjP ⟶ Adj + PP
(The man is *fond of her*)
(v) An adjective and a clause; AdjP ⟶ Adj + S
(The man is *afraid that his dog will die*)

3.3.4 Adverb Phrase (AdvP)

In the adverb phrase, it is the adverb that functions as the most important word. Within the adverb phrase, there may be other elements that function as mere modifiers and these may occur before or after the head adverb. Examples of this type phrase in English include:

(i) He ate the food *quickly.*
(ii) He ate the food *very quickly.*

3.3.5 Prepositional Phrase (PP)

The prepositional phrase obligatorily comprises its head, a preposition and a complement. In English, it is possible to have the following structural patterns for the PP.

(i) A preposition and an NP complement; PP ⟶ P + NP
(He is *in the house*)
(ii) A preposition and a clause; P ⟶P + S'
(He is not sure *of what they will do today*)
(iii) A preposition and a gerundive noun; PP ⟶ P + Gerundive N
(He came *after eating*)

SELF ASSESSMENT EXERCISE 3

1. Define a phrase in your own words and illustrate with an example each from English and a Nigerian language.
2. Mention the different types of phrases.

3.4 Sentences and Clauses

A sentence is the largest grammatical unit and it consists of a group of words related to each other and is used to express a complete thought. Grammatically, a sentence is complete only when it has a subject and a predicate. The subject of a sentence is an NP (a noun, a pronoun or any other nominal expression) about which something is being said. The predicate (VP) on the other hand, is the part of the sentence that gives information about the subject.

A clause may be seen as a group of words that can form part of a larger sentence though it can stand on its own, having a subject, a predicate and a finite verb. In this sense, a clause can also be seen as a simple sentence. There are two types of clauses: a *main clause* and a *subordinate clause*. A main clause is not dependent on any other structure but stands on its own as an independent structure. The main clause is also known as the *principal* or *independent* clause. On the other hand, a subordinate clause does not stand on its own but must be subordinated within a main clause where it normally functions as the equivalent of a part of a word class. There are different types of subordinate clause and they include the *noun clause*, the *adjectival clause*, and the *adverbial clause*. A noun clause typically functions as a noun (can be used as a subject or object) (e.g. *That John came to the party* surprised everybody). An adjectival clause functions as an adjective by modifying a nominal (noun phrase) (e.g. The man *who came here* is my uncle). On the other hand, an adverbial clause functions like an adverbial. It normally gives information about *how, when, where* and *to what extent an action* is performed (e.g. Mary saw her *when she was coming*).

3.4.1 Classification of Sentences

Sentences are classified based on the criteria of structure and function. By structure, they are classified into simple, compound and complex. Based on function, sentences are classified into declarative, interrogative and imperative sentences.

Structural Classification

(a) Simple Sentence

A simple sentence comprises a subject (NP) and a predicate (VP) that contains a finite verb (e.g. *The man is a teacher*).

(b) Compound Sentence

A compound sentence consists of two (or more) independent simple sentences that may be linked by a coordinating conjunction (e.g. *John swept the house and Mary cooked the food*).

(c) Complex Sentence

A complex sentence consists of a main clause with one or more subordinate clauses (e.g. *John believed the story that Mary married Peter*).

Functional Classification

(a) Declarative Sentence

A declarative sentence states a fact or a proposition. It usually ends with a full stop (*The man is a teacher*).

(b) Interrogative Sentence

An interrogative sentence is used in asking questions. It demands a verbal response from the addressee. It ends with a question mark (*Where did you go?*).

(c) Imperative Sentence

Imperative sentences give commands or make requests (*bring the cup, buy them some gifts*)**.**

SELF ASSESSMENT EXERCISE 4

In your words, define a sentence and illustrate with one example each in English and a Nigerian language.

4.0 CONCLUSION

Syntax is very central to human communication. It mediates between sound and meaning. Knowing the syntax of a language entails knowing the rules of sentence formation in that language. Thus, when one knows his language, part of such knowledge is the syntax of his language.

5.0 SUMMARY

In this unit, we have examined the definitions of syntax and have noted that this level of language study is concerned with the arrangements of words to form grammatical and acceptable sentences in a language.

Words when used in isolation do not make much meaning and it is at the level of syntax that we notice that language is a highly structured phenomenon. We have also examined the various word classes, the phrases and the sentence. The different types of sentences (by structure and function) have also been highlighted.

6.0 TUTOR-MARKED ASSIGNMENT

(1) Discuss briefly **four** structural patterns of the VP in English.
(2) Divide the following expressions into their two immediate phrases.
(3) *The man killed the dog* (b) *Mary married John* (c) *go into the house* (d) *bring the plate*
(4) Distinguish between open and closed class systems.
(5) Mention the three major criteria for classifying verbs in English.
(6) Some of the following words belong to the noun class, some to verb class, some to the adjective class while others belong to the pronoun class. Assign each word into the appropriate word class. *Mary, plates, spoon, eat, him, happy, Lagos, white, yourself, buy, her, enslave, confuse, excellent, authentic.*
(7) Distinguish between a main clause and a subordinate clause.
(8) Provide examples of each of the three *different* types of subordinate clauses
(9) Discuss the structural classification of sentences
(10) Discuss the functional classification of sentences

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UNIT 6 SEMANTICS

CONTENTS

1.0 INTRODUCTION

In this unit, you shall be introduced to another level of language study, semantics, the level that is concerned with the study of meaning of expressions in human language. Here, you will learn the definition of semantics, the role of semantics in human communication, the notions of sense and reference, the various types of meaning and the meaning relations at both word and sentence levels.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- define semantics
- explain the role of semantics in human communication
- distinguish between sense and reference
- identify the different types of meaning
- describe the various meaning relations at both the word and sentence levels.

3.0 MAIN CONTENT

3.1 Definition of Semantics

Semantics is the level of linguistics that is concerned with the study of meaning of words, phrases and sentences in language. It examines the way in which language expressions convey meaning.

3.1.1 The Role of Semantics (Meaning) in Human Communication

As noted by Ndimele (1997), language is at the centre of human communication and essentially a vehicle, through which humans pass and receive information. Communication plays a very vital role in the day to day activities of humans. Since the essence of communication is to convey meaning from the speaker to the hearer, it follows that communication becomes effective when the receiver shares the intended meaning of an expression. Thus, understanding an intended meaning is a crucial part of the communication process. It is important to note that the act of understanding is a two way process where the speaker presents his message clearly while the listener has the responsibility to understand the message accurately (Hybels and Weaver 1989).

3.2 Sense and Reference

In semantics, words are usually divided into their sense and reference. The reference of an expression is the entity it refers to while sense refers to the ordinary linguistic meaning of an expression. Whereas reference is concerned with the physical object in the real world while sense refers to the system of linguistic relationship existing between words in a language. Reference deals with things, objects and entities or states of affairs in the external world while sense is intralinguistic.

SELF ASSESSMENT EXERCISE 1

Sense and Reference refer to one and the same thing True/False

3.2.1 Types of Meaning

It is very difficult to account for all shades of meaning because meaning is not stable, it is highly elusive. Factors such as individuals' experiences, contexts, beliefs, situations and so many other variables affect meaning. Despite the fact that there are different shades of meaning, linguists have categorized the various dimensions of meaning into three major classes: conceptual (denotative), associative and thematic meaning. Following Ndimele (1997), we shall briefly discuss each of these.

Conceptual Meaning

The conceptual meaning is also referred to as the denotative, cognitive, logical, central, or even the primary meaning of a word. It is concerned with the inherent linguistic meaning central to communication, which the speaker of a language associates with an expression. Contexts or emotions of either the speaker or the hearer do not affect the conceptual meaning of an expression.

Associative Meaning

The kind of meaning a word or an expression has over and above its conceptual meaning is referred to as the associative meaning. Experiences and beliefs of individuals, contexts, situations, and other factors affect the associative meaning. The associative meaning of an expression varies from person to person, place to place and culture to culture. There are sub-divisions of associative meaning. They are connotative meaning, social/stylistic meaning, affective meaning, collocative meaning and reflected meaning. Let us discuss these briefly.

Connotative Meaning

This is the meaning an expression has over and above its conceptual content. It is the additional communicative value an expression has and this includes the association of that expression with real world experiences. The connotative meaning comprises the conceptual meaning plus the individual's experience. It varies from individual to individual, from society to society and from culture to culture.

Social/Stylistic Meaning

The societal norms and conventions determine the social meaning of a word or an expression. This type of meaning reflects the social circumstances of its use, which may be dialectal, social or even geographical. Thus, the choice of words/expressions by an individual normally indicates his social background, his regional/geographical dialect or the social distance between him and his addressee in terms of the degree of formality.

Affective Meaning

Also referred to as emotive or attitudinal meaning, affective meaning is the type of meaning that reflects the personal feeling/attitude of the speaker towards his listener or a particular subject matter. The speaker's choice of words for expression can lead to the elicitation of favourable or unfavourable response from his addressee.

Collocative Meaning

Collocative meaning is the type of meaning, which a word acquires by virtue of the company the word keeps. Words that always co-occur are known as collocates of each other. In English, one can identify various collocates as the following examples show.

(i) **handsome** man/boy
(ii) **beautiful** woman/girl

Reflected Meaning

This type of meaning results from words/expressions that have more than one conceptual meaning. For such words/expressions, one of the meanings/senses is dominant while the other less dominant drop out with time. The sense of the word/expression, which remains, becomes the reflected meaning. Certain words such as *ejaculation, erection, intercourse, turgid* are hardly used in their 'innocent' sense without reflecting their sexual association.

Thematic Meaning

This is the kind of meaning a word/expression has in terms of how the speaker arranges his message in terms of the ordering of the constituents in his expression. The meaning here largely depends on the part of the sentence that the speaker chooses to make prominent over and above other constituents. One of the ways of achieving this kind of meaning is through focusing which can be done by passivization (*The dog was killed by John*).

SELF ASSESSMENT EXERCISE 2

Five types of meaning are ……..

3.3 Meaning Relations at the Word Level

The meaning relations at the word level include the following:

Synonymy

Synonymy is a sense relation between items that have the same meaning. Lexical items that are involved in this kind of relation are referred to as synonyms. Synonyms characteristically occur together in certain types of expressions, being often employed as explanations or clarifications of the meaning of other words (Cruse, 1986). Synonyms can be absolute or near (partial). Absolute synonyms are hard to find and this is probably due to the fact that there is little point for a language to have two or more words with exactly the same meaning (Cf. Hurford and Heasley 1983). Examples of synonyms in some Nigerian languages include the following.

Igbo: àmàm̀ihé ‘wisdom’

àkó ‘wisdom’

Ibibio: esśíen ‘outside’

ánwá ‘outside’

Examples of absolute synonyms in English include the following (Ndimele, 1997).
anybody/anyone, nobody/no one, everybody/everyone

Near synonyms are words very similar but not identical in meaning. Near synonyms have the same communicative effect in some contexts but not in all contexts. Take a look at the following examples.

(i) deep and profound
(ii) ripe and mature

Whereas both *deep* and *profound* can co-occur with *thought*, it is only *deep* that can co-occur with *well* (a deep hole in the ground from which people take water). Similarly, both *ripe* and *mature* can co-occur with *fruit* but it is only *mature* that can co-occur with *girl*.

Semantic Opposition

Semantic opposition is used to describe the relationship between words whose meanings contradict. Words that are involved in this kind of relation are known as opposites.

Within the general class of opposites, there are well-defined sub- divisions. The popular term ‘antonymy’, which was used in the literature to refer to all kinds of opposition, is no longer used in that sense. It is now used to refer to a sub-type of opposition, the binary gradable opposition (Cf. Lyons 1977, Kempson 1977, Leech 1981, and Cruse1986). Semantic oppositions are basically of two major types. These are the binary contrast and the non-binary contrast.

Binary opposition is a relation existing between words that come in pairs and which exhaust all the relevant possibilities to the extent that if one of the words in the pair is true, the other cannot. In a binary opposition, the presence of [+] value of a quality in an entity, entails the absence of a [-] value of the same value in the entity. Some binary opposites are gradable while others are not. A gradable opposition entails a kind of comparison such that there are two extreme positions with some intermediate positions. Polarity and hierarchy opposites are gradable.

On the other hand, a non-gradable opposition characterizes absolute contrast between words that do not have any sense of gradation. Complementary, relational and directional opposites are non-gradable. Let us provide examples of each type.

(a) Polarity Opposites: *cool, tepid, lukewarm* and *warm*
The words *cold* and *hot* are polarity opposites since they define two extremities of a scale (pole) with other possible intermediate temperature scales. The following examples from Igbo and Ibibio also illustrate polarity opposites.

Igbo: ụtọ ‘sweetness’
ị̀lụ́ ‘bitterness’

Ibibio: ǹdèdèǹ ‘cool’
ú̀yìè ‘hot’

(b) Hierarchy Opposites: (i) ***centimetre*** and ***metre*** (one centimetre is shorter than one metre while one metre is longer than one centimetre

There is a sense of ordering from the highest to the lowest or vice versa.

(c) Complementary Opposites: *true* and ***false***, ***dead*** and ***alive***, ***awake*** and ***sleep***, ***open*** and ***closed***, ***male*** and ***female***, etc. Similar examples can be found in Nigerian languages as the following examples from Igbo and Ibibio show.

Igbo: nwụ́-ánwụ̀ ‘be dead’
ḍì-ńdụ̀ ‘be alive’
Ibibio: ákpáńikọ̀ ‘true’
ǹsù ‘false’

The contrast between the words in each of these pairs is absolute and asserting one of them is to contradict the other.

(d) Relational Opposites: *employer* and ***employee***, ***mother*** and ***father***, ***buyer*** and ***seller***, ***above*** and ***below***, ***before*** and ***after.*** Examples are also found in some Nigerian languages.

Igbo: zụ́ọ́ ‘buy’
rẹ́e ‘sell’
Ibibio: ètḗ ‘father’
èkà ‘mother’

Relational opposites have an interdependence of meaning such that one member of the pair presupposes the other member.

(e) Directional Opposites: ***north*** and ***south***, ***east*** and ***west*** ***up*** and ***down.*** Also consider the following examples from Igbo.

éĺú 'up'

àlà 'down'

bĭ́a 'come'

j̆́e 'go'

Pair of words, which denote directional opposites, indicate potential paths, which, if followed two moving entities, would result in their moving in opposite direction.

A non-binary contrast is not perceived in terms of a binary contrast of [+] or [-] value but in terms of a semantic contrast in which lexemes that belong to a semantic field are analyzed with respect to several binary contrasts. A non-binary contrast can be cyclic or serial. Examples are shown below.

(**f**) **Cyclic Contrast:** the colour spectrum (***white***, ***red***, ***yellow***, ***blue***, ***green***, etc.) the months of the year (***January***, ***February***, ***March***, ***April***, etc).

In both the colour spectrum and the months of the year, there is more than one alternative choice of lexical item.

(g) **Serial Contrast:** Within serially ordered contrasts, scales and ranks can be identified.

(h) **Scales:** The rating pattern of students (***excellent***, ***good***, ***fair***, ***poor***,***bad***, ***horrible***)

The ordering in scales in terms of incompatibility is not too strict as in ranks.

Ranks: Scores of candidate in an examination, military hierarchy and numerals
Ranks exhibit serial ordering in a stricter sense and are organized in terms of hierarchy from the lowest to the highest or vice versa.

Homonymy

This is a phenomenon where two or more words have the same form but with unrelated meanings (Kempson 1977:80). Words, which are involved in this kind of lexical relation, are referred to as homonyms.

Examples include the following words.

$bank_1$ (side of a river)
$bank_2$ (financial institution)

The different senses of $bank_1$ and $bank_2$ are far apart from each other and not obviously related to each other in any way. Homonyms also exist in both Igbo and Ibibio as the following examples show:

Igbo: àgwà ‘character’
àgwà ‘beans’

àkwà ‘bed’
àkwà ‘bridge’

Ibibio: tèm ‘cook (v)’
tèm ‘babysit’

Hyponymy

This lexical relationship corresponds to the inclusion of one class in another. Inclusion implies class membership such that the meaning of the more general term includes the meaning of the specific term. The general term is referred to as the *hypernym* (superordinate term), the specific term is known as the *hyponym* or the *subordinate term* while all the members whose meanings are included in the meaning of the hypernym are referred to as *co-hyponyms*. Examples are shown below.

HYPERNYMS	**CO-HYPONYMS**
COLOUR	red, white, green, black, yellow
MEAT	beef, mutton, chicken, pork

Polysemy

Polysemy is used to describe the lexical relationship where a word has several very closely related senses (Hurford and Heasley 1983:123). The several related meanings of a polysemous word must belong to a common semantic field and one of its several senses is central while the other senses are metaphorical extensions of the core sense (Ndimele1997). Examples of polysemous words in English include the following.

(i) **mouth** - (as part of the body), (as a point in a river from where water flows into the sea), (as an entrance into a cave)

(ii) **head** – (leader of a group), (as part of the body), (as part of a coin)

(iii) **foot** – (as part of the body), (as part of a mountain), (as part of a bridge), (as part of a bed)

Examples of polysemous words in Igbo and Ibibio are shown below.

Igbo: íkɛ́ ‘strength’
íkɛ́ ‘power’
íkɛ́ ‘difficulty’

Ibibio: ḳ̣im ‘pierce’

ḳ̣im ‘sew’

ḳ̣im ‘stab’

SELF ASSESSMENT EXERCISE 3

State the type of relationship between each of these set of words:
Everyone/everybody; honest/sincere; sofa/couch; tale/tail; bear, eep/profound; awake/asleep; give/receive.

3.4 Meaning Relations at the Sentence Level

Meaning relations at the sentence level include the following:

3.4.1 Paraphrase

In paraphrase relation, two or more sentences have the same meaning. There are two types of paraphrase: lexical and structural paraphrase.

Lexical Paraphrase

In lexical paraphrase, two or more sentences have the same meaning because a word or phrase in one sentence has replaced a word or phrase in another sentence.

The following are examples of lexical paraphrase.

(i) John is *happy*. vs. John is *glad*.
(ii) He is an *unmarried* man. vs. He is a *bachelor*.

Ibibio: (a) Èsìt ́annèm ḿièn 'I am happy'
(b) Èsìt ́anndàd ḿièn 'I am happy'

Structural Paraphrase

In structural paraphrase, two or more sentences have the same meaning because of the way the words have been structured and not due to the presence of a word or phrase. Examples of structural paraphrase are shown below.

(i) *The dog killed the rat.*
(ii) *The rat was killed by the dog*.

Ibibio: (a) Ǹḱekà ́iḍim 'I went to the stream'
(b) Ìdìm ḱe ńḱekà 'I went to the stream'

Ambiguity

Ambiguity is a semantic relation whereby a grammatical expression can have more than one interpretation. Ambiguity can be lexical or structural.

Lexical Ambiguity

Lexical ambiguity results in a sentence because a word or a phrase in the sentence is ambiguous as shown by the following examples.

(i) John went to the ***bank*** (*John went to the side of a river* or *John went to a financial institution*

(ii) It is a wonderful ***table*** (*It is a wonderful item of furniture* or *It is a wonderful graphic design (on a paper).*

(iii) Ibibio: Èmèm ́ààḿa m̀brè (Let that (domestic) animal be there or Let that foolish person be there)

Structural Ambiguity

An expression is structurally ambiguous due to the fact that words in the expression relate to each other in different ways even though none of the words is ambiguous. Examples include.

(i) The chicken is ready to eat (*The chicken is ready to eat its meal* or *The chicken is ready to be eaten.*)

Anomaly

An anomalous sentence presents incompatible semantic features. For example, the following sentences are anomalous.

(i)? *John killed the book.*

(ii)? *Mary fried the idea*.

In sentence (i), the verb *kill* cannot co-occur or is incompatible with the noun *book,* while in (ii), the verb *fried* is also incompatible with the noun *idea.*

Contradiction

A contradictory statement contains two oppositions that contradict each other and is necessarily false because of the senses of the words in it.

Examples are shown below. (i) *The dead cat is alive.*

(ii) *The married man is a bachelor*.

Redundancy

Redundancy is a semantic relation that results when certain linguistic units that do not add to the semantic value of larger units are allowed to be part of such larger units. Examples of redundant units have been italicized in the following expressions.

(i) John repeated his actions *again.*

(i) John arrived by 9 p.m. in the *evening*

Meaninglessness

A meaningless construction is one, which expresses an idea that is not true. A typical example of meaningless construction is: *Colourless green ideas sleep very furiously.*

Entailment

Entailment is a semantic relation of inclusion where the truth of a second expression follows from the truth of the first. It is the converse of contradiction. Examples of the expression of entailment are shown below.

James killed the dog entails that *The dog died.*

John has a wife entails that *John is married***. Proposition**

The term 'proposition' is used to refer to the basic meaning of a declarative sentence that describes some state of affairs. It refers to the unit of meaning that constitutes the subject matter of a statement.

Examples are shown below.

(i) John bought Mary a book.

(ii) They killed the dog.

Analyticity

An analytic sentence is one that is necessarily true because of the senses of the words in it (Hurford and Heasley 1983). It is the type of expression that reflects the intuition of the native speakers about the senses of the words in their language. *All dogs are animals,* is an example of an analytic expression. An analytic construction contrasts with a synthetic construction that may or may not be true depending on the way the world is. For instance, in the sentence, *John is a thief,* there is nothing in it to make true or false.

Tautology

Tautology is a pragmatic deviance whereby an expression does not make the hearer's meaning clearer or forceful (Ndimele, 1997). It is an act of needless repetition, which only restates the obvious, without giving the listener any new information. A tautologous expression is uninformative and merely restates a fact.

(i) *He is his father's son.*
(ii) *Her bachelor brother is an unmarried man.*

4.0 CONCLUSION

Meaning is at the centre of human communication and any piece of information passed from the speaker to the hearer must aim to achieve the intended result for effective communication to take place. The various meaningful expressions we use to convey our messages consist of words and sentences and these words and sentences are involved in a network of relationship.

5.0 SUMMARY

In this unit, we have outlined the essentials of semantics; the level of linguistics concerned the meaning of linguistic expressions. We have dealt with the definition, noting the various types of meaning, the various meaning relations at the word level as well as the meaning relations at the level of the sentence.

6.0 TUTOR-MARKED ASSIGNMENT

(1) Discuss briefly *five* types of meaning
(2) What is the role of semantics in human communication?
(3) Distinguish between lexical paraphrase and structural paraphrase.
(4) Briefly discuss contradiction, entailment and redundancy as meaning relations at the sentence level.
(5) Outline five meaning relations at the word level.
(6) Briefly discuss paraphrase and ambiguity as meaning relations at the sentence level.
(7) Identify the meaning relation expressed by the following sentences.

(i) *Visiting relatives can be boring.*
(ii) *(ii) A circle is round.*
(iii) The incident should not recur again.
(iv) Mary has a husband entails that she is married.
(v) The married woman is a spinster.
(vi) All humans are mortals.
(vii) That short man is very tall.

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MODULE 2 LANGUAGE AND CONTEXT

UNIT 1 PRAGMATICS

CONTENTS

1.0 INTRODUCTION

In this module, you will be introduced to fields of linguistic study that analyses language in context of its use. Unit 1 addresses pragmatics which is about the interpretation of language in context. Unit 2 is on Discourse Analysis which is about how speakers combine sentences to form larger bodies of speech. In unit 3, you will be introduced to Contrastive linguistics which is an approach to linguistic analysis that is concerned with contrasting languages to highlight similarities and differences for practical purposes.

The two types of contexts which pragmatics concerns itself with are linguistic context that is, the broader discourse context within which a sentence can be interpreted, and situational context which is knowledge about the speakers, subject matter, and general information about the context. This unit will introduce you to another aspect of language study known as pragmatics. In addition to learning some definitions of pragmatics, you will appreciate the fact that this aspect of language study that concerns itself with language use should not be ignored or given a less prominent status. Specifically, you will learn from this unit the different roles utterances play with respect to the behaviour/attitude of speaker/hearer in interpersonal communication (speech acts). You will also learn the different acts a speaker can cause by making an expression (performed acts) and also the criteria that a speech act must fulfill in order to be successful (felicity conditions).

2.0 OBJECTIVES

At the end of this unit, you will be expected to:

- define pragmatics;
- know the different types of action which human beings can perform with language;
- explain the different acts that a speaker can cause through the use of language;
- know the criteria that must be satisfied by speech acts for them to be successful; and
- know the conversational maxims.

3.0 MAIN CONTENT

3.1 Definitions of Pragmatics

Some of the definitions of pragmatics include:

"A branch of study that is concerned with the ability of language users to pair sentences with the context in which they (the sentences) would be appropriate" (Levinson 1983: 24).

"The study of the rules and principles which govern language in use, as opposed to the abstract, idealized rules of grammar" (Malmkj∪r 1991:354).

It is obvious from the two definitions given that pragmatics studies the ways that context affects meaning. Pragmatics reveals that meaning affects the world and is also affected by the world. It shows that meaning is contextually determined.

3.2 The Scope of Pragmatics

Pragmatics describes languages from the point of view of the users of language with respect to the choices they make, the difficulties they face in their day to day social interactions and the effects their use of language have on other participants in speech events (Ndimele 1997:117). It primarily dwells on 'implicit' meaning; the aspect of meaning that is not clearly stated. Ndimele (1997) identifies three basic factors that enable the hearer to understand the implicit meaning. These are the situation in which the utterance is produced, the shared previous knowledge between the participants and the linguistic context in which a particular expression is used. To sum up, the scope of pragmatics "takes into account notions that include: the intentions of the speaker, the effects of the speaker's utterance on his listener(s), the implications that follow from expressing something in a particular way and the knowledge and beliefs about the world upon which both the speaker and his listener(s) rely when they interact" (Ndimele 1997:120).

3.3 Speech Acts

Simply put, 'speech act' is the process of communicating through the use of language. When we speak, we perform speech acts. The notion of speech act was introduced by a British language philosopher, J.L. Austin (1911-1960) and it is now used to refer to the *theory* that is concerned with the analysis of the roles utterances play with respect to the behaviour/attitudes of speakers/hearers in interpersonal interactions. Humans through the use of language perform certain types of action. Searle (1969 and1971) outlines five of such actions to include:

(i) ***Representative*****:** A speech act that describes or states processes and events in the real world through assertion, description, suggestion, prediction, conclusion, etc. Examples are shown below from Igbo.

(a) Òbí gbùrù ńkịta ́ahụ̀ 'Obi killed that dog'
(b) Òbí ́egbụghị ńkịta ́ahụ̀ 'Obi did not kill that dog'

(ii) ***Declarative:*** This is the type of speech act that changes a state of affair in the world as soon as it is uttered. These kinds of speech acts are made during baptizing, christening, passing sentence, marriage, etc. as shown by the following expressions.

(a) I pronounced you man and wife.
(b) You are hereby sentenced to life imprisonment.

(iii) ***Directive:*** This is the type of speech act that persuades an addressee to perform a verbal or non-verbal action. This is seen in expressions that inquire command, request, plead, etc. Take a look at the following examples from Igbo and Ibibio:

(a) Igbo: Bĭa ́ebéà! 'Come here!'
(b) Ibibio: Àká ́úḱe? 'Where are you going?'

(iv) ***Expressive:*** In this type of speech act, the speaker expresses his or her attitude towards a state of affair. This is seen in expressions usedfor apologies, condolences, greetings, appreciation, etc. Examples:

(a) I apologize for what happened.
(b) Igbo: Ìḿéélá 'Thank you'

(v) ***Commissive:*** This speech act commits the speaker so that he or she will do something in the future. This is manifested in expressions such as the following:

(i) I promise to be there.
(ii) I swear, I must deal with you.

SELF ASSESSMENT EXERCISE 1

A speech act is …….
Five types of action humans that can be performed through speech acts are ……..

3.3.1 Types of Performative Acts

There are basically three types of acts, which a speaker can cause in the course of making an utterance. These are locutionary act, illocutionary act and perlocutionary act. Let us discuss each of these briefly.

(a) Locutionary Act

A locutionary act is a statement that is uttered with its normal sense. That is, an expression fulfils the locutionary if its meaning follows from the meanings of the individual words that make it up. For example, the meaning of the following sentences are derived from the meanings of the words that make them and any hearer, to whom these sentences may be addressed to will also understand them to be so.

(i) Igbo: Èḿéḱa gàrà ụ́lọ̀ ‘Emeka went home’
(ii) May I borrow your pen?

(b) Illocutionary Act

Each time a speaker performs a locutionary act, he is also performing some illocutionary act such as stating a fact, making a promise, warning, betting, making a request, rendering an apology, etc. Put differently, the illocutionary act of an expression is the communicative purpose of the expression. The sentence: *I will be there tomorrow is* obviously a *promise* which puts one (the speaker) under obligation to be at the expected place. When a hearer, through the knowledge of the conventions of the language, grasps what one is saying then, there is *uptake* on his part of the illocutionary force of the utterance.

(c) Perlocutionary Act

The effect the illocutionary act has on the hearer is referred to as the *perlocutionary act*, such as persuading, deterring, surprising, misleading or even convincing (Malmkj∪r 1991). A request for instance has the illocutionary force of directing someone to do something. *Its perlocutionary effect may be the doing of the thing the person directed*.

As can be observed from the types of performed acts, expressions of different moods (declarative, imperative, interrogative, etc.) Perform speech acts of diverse kinds. However, in contexts, one may perform a different speech act using them than that for which they are normally used for. That is, it is possible to use a sentence such as: *It is hot here* not only to make an *assertion* but also to request that a *heater* be put off or that an *air conditioner* be put on. Thus, speech acts are performative utterances in which the speaker performs, normally by using the first person present tense sentence (e.g. I promise that…).

3.3.2 Felicity Conditions

For a speech act to be successful it must achieve its communicative purpose and this can happen only when certain conditions are met. These conditions are referred to as felicity or appropriate conditions (Austin 1962) and they are essential, sincerity and preparatory conditions. Let us examine them one by one.

(a) Essential Conditions

These are conditions, which measure the commitment of the speaker to the speech act performed in terms of the behavoiur/beliefs associated with that particular speech act. For example, if one makes a statement such as: *I arrest you*, the person is expected to go ahead and arrest the person addressed. A violation of these conditions is a *breach of commitment* (Ndimele 1997).

(b) Sincerity Conditions

Sincerity conditions measure the intentions of the speaker in a speech act as to whether the speech act is being performed sincerely or not. Violating these conditions is known as *abuse.*

(c) Preparatory Conditions

These conditions measure the appropriateness of the person performing a speech act, evaluating whether the person is qualified to do so or not. For instance, one *baptizing* must be empowered to do so, one *pronouncing man and wife* must have the power to do so, just as one *sentencing one to life imprisonment* must have the right to do so. Doing a speech act, which one is not, empowered to do leads to a *misfire*, a violation of the preparatory conditions.

SELF ASSESSMENT EXERCISE 2

1. Three types of performed acts are …….
2. A felicity condition is …….
3. Mention *three* felicity conditions you are familiar with.

3.3.3 Conversational Implicatures

As stated by Grice (1975) implicatures are used to refer to the 'implied' meanings of expressions rather than what such expressions explicitly say. Conversational implicatures on the other hand, are essentially concerned with general features of discourse. When participants are involved in a talk exchange, they tend to obey certain inherent rules of discourse (e.g. they must be rational, their talk exchanges must consist of utterances, which are in some way connected to each other). These inherent (unwritten) rules of a talk exchange are referred to as *conversational maxims* and their use to imply meaning is known as *conversational implicatures*. It is however by the *cooperative principle* that the participants obey the conversational maxims. The conversational maxims are further broken down into four subtypes. These are as followed.

(a) Maxims of quantity: These relate to the amount of information to be provided in a talk exchange. These maxims require that a participant should:

(i) make his/her contribution as informative as is required for the current purposes of the exchange;
(ii) not make his/her contribution more informative than is required.

(b) Maxims of quality: These relate to the quality of information to be provided in a talk exchange. These expect the participants to:

(i) say that which he/she believes to be true(one should not make a contribution that is false);
(ii) say that for which he/she has adequate evidence.

(c) Maxims of Relevance

Participants are by these maxims expected to make contributions that are relevant to the subject of discourse.

(d) Maxims of manner

These relate to how something is said in a talk exchange. Specifically, these maxims require participants to be as brief as possible, to be orderly and to avoid obscurity and ambiguity.

4.0 CONCLUSION

Language users know that words and expressions can have certain implications in addition to their inherent linguistic meanings. Obviously, so many factors affect meaning and participants are naturally in tune with such factors and they always respond appropriately. Some of the factors that affect meaning include contexts, situations, discourse setting, the participants involved, etc. These factors definitely govern the choice participants make as they take part in social interactions.

5.0 SUMMARY

We have been discussing pragmatics in this unit. We have given some definitions of pragmatics noting its scope. Other important concepts such as speech acts, performed acts, felicity conditions and conversational implicatures have also been discussed**.**

6.0 TUTOR-MARKED ASSIGNMENT

(1) Distinguish between illocutionary act and perlocutionary act.
(2) What are Conversational Implicatures?
(3) Discuss each of the following briefly.
    (a) Maxims of quality
    (b) Maxims of quantity
    (c) Maxims of relevance
    (d) Maxims of manner
(4) Mention and discuss briefly *three* types of performed acts

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UNIT 2 DISCOURSE ANALYSIS

CONTENTS

1.0 INTRODUCTION

In this unit, you will learn about the history of Discourse Analysis (DS) and the reason for the term, Discourse Analysis. You will also learn about the uses and advantages/disadvantages of Discourse Analysis. It will be observed that Discourse Analysis does not provide absolute answers to a specific problem but rather it enable us to understand the conditions behind a specific problem and make us realize that the essence of that problem and its resolution lie in its assumptions. Indeed, Discourse Analysis is meant to provide a higher awareness of the hidden motivations in others and ourselves and therefore enable us to solve concrete problems.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- define Discourse Analysis;
- discuss the history of Discourse Analysis;
- explain what you understand by Speech events, conversational interaction and background knowledge;
- know the distinction between cohesion and coherence; and
- list the uses and advantages/disadvantages of Discourse Analysis.

3.0 MAIN CONTENT

3.1 What is Discourse Analysis?

Discourse Analysis is the field of study analyses connected speech or writing beyond the limits of a single sentence at a time. For most people, it is difficult to give a single definition of Discourse Analysis as a research method. Indeed rather than providing a particular method. Discourse Analysis can be characterized as a way of approaching and thinking about a problem. Discourse Analysis is neither a qualitative nor a quantitative research method but a manner or questioning the basic assumptions of quantitative and qualitative research methods. When language users make sense of what they read in texts, understand what speakers discourse, and successfully take part in conversation they are undertaking what is known as Discourse Analysis.

3.1.1 Interpreting Discourse

Language users are capable of more than simply recognizing correct versus incorrect form and structure. Phrases such as 'trains collide, 'two die', a newspaper headline, can still be understood. One can know for example that a causal relation exists between the two phrases. Language users can also make sense of notices like 'No pay, no service', on shop windows, understanding that a conditional relation exists between the two phrases (if you do not pay money, you will receive no service').

Examples of texts, written in English, which appear to break a lot of the'rules' of the English language abound. But instead of rejecting such texts as containing ungrammatical forms, we try to make sense of it. That is we attempt to arrive at a reasonable interpretation of what the writer intended to convey. It is this effort to interpret (and to be interpreted), and how we accomplish it, that is the key elements investigated in the study of discourse. To arrive at an interpretation and to make our messages interpretable, we certainly rely on what we know about linguistic form and structure. But, as language users, we have more knowledge than that.

3.1.2 Cohesion

We know, for example, that texts must have a certain structure which depends on factors quite different from those required in the structure of a single sentence. Some of those factors are described in terms of **Cohesion**, or the ties and connections which exist within texts. A number of those types of cohesive ties can be identified in the following text:

My father once bought a Lincoln convertible. He did it by saving every penny he could. That car would be worth a fortune nowadays. However, he sold it to help pay for my college education. Sometimes I Think I'd rather have the convertible.

There are connections present here in the use of pronouns, which we assume are used to maintain reference (via anaphora) to the same people and things throughout: *father – he – he - he; my – my – I; Lincoln it.* There are lexical connections such as a *Lincoln convertible – that car – the convertible, etc.*

Analysis of these cohesive links within a text gives us some insight into how writers structure what they want to say, and may be crucial factors in our judgments on whether something is well written or not. It has also been noted that the conventions of cohesive structure differ from one language to the next and may be one of the sources of difficulties encountered in translating text. However, by itself, cohesion would not be sufficient to enable us to make sense of what we read. It is quite easy to create a highly cohesive text which has a lot of connections between the sentences, but which remains difficult to interpret. It becomes clear therefore that the connectedness that we experience in our interpretation of normal texts is not simply based on connections between words, but must be some other factor what leads us to distinguish connected texts which make sense from those that do not. This factor is usually described as coherence.

3.1.3 Coherence

The key to the concept of coherence is not something which exists in the language, but something which exists in people. It is people who 'make sense' of what they read and hear. They try to arrive at an interpretation which is in line with their experience of the way the world is. Indeed, our ability to make sense of what we read is probably only a small part of that general ability we have to make sense of what we perceive or experience in the world.

We are continually taking part in conversational interactions where a great deal of what is meant is not actually present in what is said. Perhaps, it is the ease with which we ordinarily anticipate each other's intentions that makes this whole complex process seem so unremarkable. Yule (1996) provides an example from Widdowson (1978):

Her: *That's the telephone* Him: *I'm in the bathroom* Her: *Ok*

There are certainly no cohesive ties within this fragment of discourse. How does each of these people manage to make sense of what the other says? They do use the information contained in the sentences expressed, but there must be something else involved in the interpretation. It has been suggested that exchanges of this type are best understood in terms of the conventional actions performed by the speakers in such interactions. Be that as it may, it is clear that language users must have a lot of knowledge of how conversational interaction works which is not simply 'linguistic' knowledge.

3.2 Speech Events

In exploring what it is that we know about taking part in conversation, or any other speech event e.g. debate interview etc., we quickly realize that there is enormous variation in what people say and do in different circumstances. In order to begin to explain the sources of that variation, we would have to consider a number of criteria. For instance, we would have to specify the roles of speaker and hearer, or hearers, and their relationships, whether they were friends, lovers, young, old and many other factors. All of these factors will have an influence on what is said and how it is said. We would have to describe the topic of the conversation, and in what setting or context it took place.

3.3 Conversational Interaction

Language users in a particular culture clearly have a lot of knowledge of how conversation works. In simple terms, English conversation can be described as an activity where, for the most part, two or more people take turns at speaking. Typically, only one person speaks at a time and there tend to be avoidance of silence between speaking turns. (This is not true in every culture).

More often, participants wait until one speaker indicates that he or she has finished usually by signally a completion point through asking a question, for example, or by pausing at the end of a phrase or a sentence. Other participants can indicate that they want to take the speaking turn in different ways. They can start by making short sounds, usually repeated, while the speaker is talking and often use body shifts or facial expressions to signal that they have something to say. These different strategies of participation in conversational interaction are in a sense, part of what makes conversation work. One of the most noticeable features of conversational discourse is that the features of conversational discourse are that it is generally very co-operative.

An underlying assumption in most conversations seems to be that the participants are in fact, co-operating with each other. This co-operative principle, together with four maxims was first set out by Grice (1975). The co-operative principle is stated in the following way:

Make your conversational contribution such as is required, at the stage at which it occurs by the accepted purposes or direction of the talk exchange in which you are engaged.

Supporting this principle are the four maxims:

Quantity: Make your contribution as informative as is required, but not more or less than is required.

Quality: Do not say that which you believe to be false or for which you lack evidence.

Relation: Be relevant.

Manner: Be clear, brief and orderly

3.4 Background Knowledge

Investigating how we use our background knowledge to arrive at interpretations of what we hear and read is a crucial part of doing Discourse Analysis. In order to describe a conversational implicature (an additional conveyed meaning) in a statement, one has to appeal to some background knowledge that must be shared by the conversational participants. In order words the participants concerned must be conversant with the topic of discussion in order to interpret discourse appropriately.

3.5 History of Discourse Analysis

The term Discourse Analysis was first employed in 1952 by Zellig Harris as the title of a paper he published, although that paper did not yet offer a systematic analysis of linguistic structures beyond the sentence level.

Harris advocated the use of a distributional method which would discover which elements occurred next to each other, or in the same environment. In order to broaden the concept of equivalence, Harris employed the notion of the grammatical transformation, now well known from the study of transformational-generative grammar.

As a new cross-discipline, Discourse Analysis began to develop in the late 1960s and 1970s in most of the humanities and social sciences, more or less at the same time and in relation with other new disciplines such as semiotics, psycholinguistics, sociolinguistics and pragmatics. Whereas earlier studies of discourse, for instance text linguistics often focused on the abstract structures of written texts, many contemporary approaches, especially those influenced by the social sciences favour a more dynamic study of conversational interaction. Discourse analysis is chiefly associated with John Sinclair, Malcolm Coulthard and members of the English Language Research group at the University of Birmingham.

3.6 Uses of Discourse Analysis

Discourse analysis can be applied to any text, that is, to any problem or situation. Again, the purpose of discourse analysis is not to provide definite answer but to expand our persona horizons and make us realize our own shortcomings and acknowledged agendas/motivations as well as that of others. In short Discourse Analysis reveals what is going on behind our backs and those of others and which determines our actions.

Discourse Analysis provides accounts of the production, internal structure and overall organization of texts.

3.7 Advantages/Disadvantages of Discourse Analysis

Discourse Analysis, which can be applicable to every situation and every subject allows for personal growth and a high level of creative fulfillment.

No technology or funds are necessary and authoritative discourse analysis can lead to fundamental changes in the practices of an institution, the profession, and society as a whole.

If offers the opportunity to adopt a social perspective in the cross- cultural study of media text. However, Discourse Analysis does not provide definite answers as has already been stated. It is not a 'hard' science but an insight/knowledge based on continuous debate and argumentation.

SELF ASSESSMENT EXERCISE

1. What do you understand by speech event?
2. Explain the relevance of background knowledge in analyzing discourse.

4.0 CONCLUSION

Discourse Analysis involves deconstructive reading and problem interpretation in which a reader gives to a text depending on his method of analysis in doing discourse analysis, reasonable interpretation is given to what people say (all forms of conversation) or the message a writer is trying to convey in a text whether or not they contain grammatical forms.

5.0 SUMMARY

In this unit, we have had an understanding of discourse analysis that it does not provide tangible answers to problems but rather it reveals the hidden motivations behind a text or behind the choice of a particular method of research to interpret that text. In taking part in conversations or speech events, we have discussed that the role of speaker-hearer relationships amongst other things have to be specified. We have also seen how useful some linguistics structures (such as cohesion and coherence) are in making messages interpretable. Conversational interactions and background knowledge of participants have also been observed to be necessary for a proper analysis of discourse.

6.0 TUTOR-MARKED ASSIGNMENT

(1) Discourse refers to what? Explain with examples
(2) Differentiate between cohesion and coherence.
(3) Discuss briefly how Grice's maxims make discourse more coherent.

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UNIT 3 CONTRASTIVE LINGUISTICS

CONTENTS

1.0 INTRODUCTION

Contrastive linguistics, also known as contrastive analysis (CA) is an approach to linguistic analysis which shows the similarities and differences between two or more languages or dialects. CA is the systematic comparison of two or more languages, as it aims to describe their similarities and differences. In addition, contrastive analysis is an "inductive investigative approach based on the distinctive elements in a language". CA could also be defined as "a systematic study of a pair of languages with a view to identifying their structural differences and similarities" (Wikipedia, 2006). It provides principles that are applicable to solving problems in language teaching and translation. Contrastive linguistics studies deals with issues like language interferences, transfer and equivalents. According to Fries, (1945, cited in Lado, 1957) 'the most effective materials are those that are based upon a scientific description of the language to be learned carefully compared with a paralleled description of the native language of the learner'.

From the foregoing, it is the comparison of an element or a class of elements of L_1 (mother tongue/first language) with equivalent element or a class of elements in L_2 (second language). In the traditional sense, CA compares specific elements of L_1 and L_2 that to the same elements, however we shall come back to this later. It is also concerned with structural conditions as well as semantic considerations. Based on these considerations, the systems and subsystems (phonological, morphological, syntactic; plosives, fricatives, passive or relative constructions) can be compared.

2.0 OBJECTIVES

At the end of this unit you should be able to:

- define contrastive linguistics/analysis;
- identify the uses CA;
- differentiate between the traditional and contemporary directions in CA; and
- explain the concepts of language interference and transfer.

3.0 MAIN CONTENT

3.1 Aims of Contrastive Linguistics/Analysis

Contrastive analysis has several aims and some of them are enumerated here. One of the aims of contrastive analysis is to improve the methods and results of language teaching. Another aim is to help in machine translation and linguistics typology. It is also useful for pedagogical purposes and contributes to the planning of second/foreign language teaching. Within the field of teaching, contrastive analysis helps language teachers to teach the structure of the target language by highlighting the differences between the target language and the language of the students.

3.1.1 Uses of Contrastive Analysis

Contrastive Analysis has a number of practical applications for example in lexicography, language teaching, and translation. Historically, CA is used to establish language genealogy. It enables one to present what is general and what is language specific in the individual languages compared. It gives inventories of differences and similarities between the compared items. It is very essential in the field of second language Acquisition (SLA). It provides theoretical framework in language learning. It shows hierarchies of learning. CA advocates a means of predicting and/or explaining difficulties of second language learners. It influences curriculum design and language teacher education.

Contrastive analysis is a very important branch of linguistics, which affects language learning; therefore, it has to grow with the times in order to meet the needs of the learners, the teachers and the entire society. It is therefore necessary to study its record of development hence, this section will briefly record some questions raised by James (1980) that reflect both the traditional and contemporary directions in CA.

3.1.2 Directions in Contrastive Analysis

In this section, we will discuss traditional and contemporary directions in contrastive analysis.

Traditional

The traditional approach to CA is concerned with the consonant phonemes in languages X and Y, and how they differ in inventory, realization and distribution. It also examines the tense system of languages X and Y as well as the verbs. Note that in addition to the above areas Lado, who is the chief proponent of CA, was also interested in the comparison of the cultures of the people of the two languages under study.

Contemporary

In contrast, a contemporary approach to CA inquires about how cohesion is expressed in languages X and Y; how the speech acts of apologizing and requesting expressed in languages X and Y; and how conversations are opened and closed in languages X and Y. From these questions, James (1980) asserts that the concerns of CA can be categorized into micro-linguistic CA (traditional) and macro-linguistic CA (contemporary).

SELF ASSESSMENT EXERCISE 1

1. Contrastive analysis is about language comparison True/False
2. Which are the two directions of CA?

3.2 Contrastive Analysis of English and Ibibio Vowel Systems

Before we discuss the core areas of CA, we need to know the meanings of these basic terms in CA: Source language (MT/L_1) and target/second language (L_2).

Source language – In language teaching, the source language is the native language, mother tongue or language of the immediate environment (NL, MT, or LIE) from which the instruction of the foreign (FL) or second language (L_2) is drawn.

Target language – It is the second (L2) or foreign language being taught.

This section will provide a brief analysis of the Ibibio and the English language vowel systems. To make our study meaningful, let us examine the contrastive analysis of the vowel systems of English (target language) and Ibibio (source language).

	English Language	Ibibio
Long vowels	i: a: ə: ɔ : u: (5)	i: e: a: ɔ: o u (6)
Short vowels	i e æ ʌ ə ɔ u (7)	i̩ i ẹ ə ạ o u u̩ (10)
Diphthongs	ei əu ai au ɔ i (8) iə ɛə uə	ei ai oi ɔi ui (5)

A critical look at the vowel systems of the two languages shows some areas of similarities and areas of differences.

Areas of Similarities

Both languages have the linguistic universal features of vowels. Both languages have short and long vowels.

Both languages have diphthongs.
Specifically, both languages have the vowels /i e ʌ ə ɔ ʊ/

Areas of Differences

English language has 7 short vowels whereas Ibibio exhibits 10 short vowels.

Whereas English language has 5 long vowels; Ibibio has 6 long vowels. There is a difference in the number of diphthongs in the two languages.

A contrastive analysis of the vowel systems will help both the teachers and the learners to know where to lay more emphasis. For example, though these two vowels /ʌə/ are found in English and Ibibio, some Ibibio learners/speakers of English still find it difficult to produce these sounds in words like

/ ʌ /	/ ə /
mother	father
come	about
cup	doctor

Contrastive analysis is not restricted to the study of vowels only, but it can also be applied in all other levels of language study namely: the consonants, rhythm, syllable structure, grammatical levels, among others.

SELF ASSESSMENT EXERCISE 2

1. Distinguish between source language and target language
2. List the different levels of linguistics in which CA can be applied.
3. Contrast the consonant system of your native language (NL, MT/L_1) with that of the English language (L_2).

3.3 Interference

Interference is also described as L1 interference, linguistic interference or cross – linguistic interference. Interference is the effect of a speaker's or writer's first language on the production or perception of his/her second language. It is sometimes seen as errors made by carrying over the speech habits of the native language or dialect into a second language or dialect. Also features of "pronunciation, grammar and vocabulary may cause interference when a person is learning to master the patterns of a second language (Hartmann & Stork 1972:115). Weinreich (1974:1) argues that interference is

The rearrangement of patterns that result from the introduction of foreign elements into the highly structured domains of language, such as the bulk of the phonemic system, a large part of the morphology and syntax, and some areas of the vocabulary (Kinship, Color (KC), weather, etc.)

When two languages come in contact, there is bound to be interference because new elements will be introduced into one of the languages, that is, from the source language (MT/L_1) into the target language (L_2) or vice versa. This introduction is as a result of the difference between the languages and as Weinreich further comments:

*The greater the difference between the systems [languages], i,e, the more numerous the mutually exclusive forms and patterns in each, the greater is the *learning problem and the potential area of interference.*

We had earlier stated that in 1.0 that interference occurs at different levels of linguistics (cf. 1.0), and some of these levels are: phonic interference, grammatical interference, lexical interference, semantic interference, etc.

3.3.1 Levels of Interference

This section will examine phonic interference with examples from works by some scholars.

Phonic Interference

Phonic interference deals with how a speaker perceives and reproduces the sounds of one language (L_2) as a result of the influence of another language (L_1). Phonic interference as Weinreich (1974:14) observes that 'arises when a bilingual identifies a phoneme of the secondary system (L_2) with one in the primary system, and in reproducing it, subjects it to the Phonetic rules of the primary language' (MT/L_1).

This type of interference in which a sound is replaced is sometimes called "sound distribution." A few examples from researches carried out on the contrastive analysis of English and two Nigerian languages: Efik and Yoruba are cited below:

English	**Efik**
Thing [™in]	[tin]
Thin [™in]	[tin]
Bathroom [ba:™ru:m]	[batrum]

Source: Offiong 2004:47

English	**Yoruba**
Come [kʌm]	[kɔmu]
Cup [kʌp]	[kɔp]
Father[fa:ð ə]	[fada]

Source: Adelabu 2001:84-85

From these examples, we have observed that sounds in the English language (L_2) are replaced by sounds from the mother tongue/first language (MT/L_1). Note that interference is not only from one language into another. It is a bi-polar process, that is, it can occur from language A into language B or vice versa. Interference can be classed into two: Direct interference and Reverse interference.

Direct Interference

This refers to the influence of one of the linguistic systems of an individual on the other linguistic system of that individual, whereas reverse interference is a situation where a bilingual allows his control of his second language (L2) to interfere on his mother tongue (L_1) [MT].

3.4 Language Transfer

Another concept that emanates from contrastive analysis is called language transfer. Language transfer occurs in the learning and teaching of another language. For example, transfer can occur in the learning and teaching of English as a second language (L2). It can also occur when translating from L2 into L1, (that is, from English into Ibibio or vice versa). Language transfer can be categorized into two viz: positive and negative transfers.

3.4.1 Types of Transfer

Positive Transfer

This transfer is found when the unit or structure of both languages is the same. It yields "correct" (acceptable) language production.

Negative Transfer

This type of transfer occurs when speakers and writers transfer items and structures that are not the same is both languages. Note that, where there are greater differences in the two languages, the more negative transfer will be discovered. Sometimes, negative transfer, which is an "off-shoot" of interference, can be studied under sources of errors (cf. Okon 2001).

Language transfer can be a conscious or an unconscious activity. For a conscious effort, the speaker or writer may guess when producing L_2 speech or text. The reason is that the writer or speaker has not learnt the unit or has forgotten the L_2 usage. On the other hand, they may not consider that the structures and internal rules of the languages are different. However, note that, the closer the two languages, the results will be positive transfer. We want to conclude this concept of transfer thus: since it is a cross-linguistic influence, it can be classed into two: the superstrate transfer where L_2 influences L_1 and the substratum transfer where L1 influences L_2 (Unit 12, 6.1.1).

SELF ASSESSMENT EXERCISE 3

1. What is interference? Give examples from any two languages of your choice.
2. What do you think is the benefit of negative transfer to L_2 learners?

4.0 CONCLUSION

Contrastive Analysis is a branch of linguistics that is very essential in the learning and teaching of a second language. It is as a result of language contact where two languages or speakers of two different languages come together. There are different issues that are results of Contrastive Analysis, such issues as language interference, language transfer among others.

5.0 SUMMARY

In this unit, we have shown that CA deals with the comparison of two languages in order to show the similarities and the differences. We have defined CA as well as shown that CA can be studied at the different linguistic levels: Phonology, syntax, semantics, pragmatics, etc. We have also distinguished between L_1 (source language) and L_2 (target language).

6.0 TUTOR-MARKED ASSIGNMENT

1. What are the benefits of CA to you as a student of Linguistics?
2. In what ways is Contrastive analysis of use to language teachers?

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MODULE 3 LANGUAGE AND PSYCHOLOGY

UNIT 1 PSYCHOLINGUISTICS

CONTENTS

1.0 INTRODUCTION

This module is about language and the brain. The brain plays a very important role in the processing of language. Indeed, it is generally believed that the human ability to make use of natural language is sequel to the possession of a highly developed and sophisticated brain. Animals are unable to use language as we know it because their brains are not as developed as that of humans. Damage to any part of the human brain that plays a part or performs a function in the processing of language will result in some linguistic difficulty. In unit 1 you will be introduced to the field of linguistics that analyses the cognitive processes underlying language use. Unit 2 will focus on another aspect of cognitive processes, language acquisition and learning. In unit 3, you will be introduced to various attempts at creating technological simulations of these cognitive processes.

This unit will focus on Psycholinguistics, the study of the cognitive or mental processes and representations underlying language use. The role of the human brain in language processing; and other important concepts that relate to language acquisition by human beings, such as hemispheric dominance, language areas of the brain, language lateralization, aphasia, theories of language learning, etc, will be examined in this unit.

2.0 OBJECTIVES

At the end of the course, you should be able to:

- define Psycholinguistics and explain the main concerns of the field;
- discuss the concepts and terminology;
- describe the role of the brain in language acquisition and processing; and
- identify language centres of the brain their primary functions in language processing.

3.0 MAIN CONTENT

3.1 Definition of Psycholinguistics

Psycholinguistics, otherwise known as the *psychology of language*, is the study of language in relation to the human mind: the mental structures and processes, which are involved in the acquisition and use of language (Cook, 2003; Anozie, 2007). It involves the study of the psychological and neurobiological factors that enable human beings to acquire, use and understand language, and the cognitive processes that make it possible to generate a grammatical and meaningful sentence out of vocabulary and grammatical structures, as well as the processes that make it possible to understand utterances, words, texts, etc.

As the name implies, Psycholinguistics is an interdisciplinary field involving Psychology and Linguistics. Psychology studies the human mind scientifically in order to be able to predict human behaviour in society, while Linguistics, as earlier discussed, is the scientific study of language. Wade & Travis (1996) define psychology as "the scientific study of behaviour and mental processes and how they are affected by an organism's physical state, mental state, and external environment" (taken from Akpan, 2005:1). Psychology is basically concerned with human behaviour; it tries to provide a formal explication of how human beings acquire knowledge. But, a lot can also be learnt about human behaviour from the study of the behaviour of animals. As an interdisciplinary subject involving psychology and linguistics, psycholinguistics tries to formulate or describe explicitly how people acquire linguistic knowledge. Insights from both psychology and linguistics are used for a better understanding of how language is acquired by children, why people have certain language-related problems and how to solve these linguistic problems.

Psycholinguistics studies the human [linguistic] mental capacity or potentials, especially with respect to how these mental potentials are used for speech production, transmission and reception; all aimed at enabling man to comprehend language which he needs for interaction in the society (Anozie, 2007). It seeks to provide an explanation of how a better understanding of the human brain influences or affects the way language is acquired. Furthermore, psycholinguists attempt to investigate the relationship between language and thought to see whether there is any similarity between what people think (in their brains) and what they actually say (speak out), and whether it is possible for humans to speak without having thought about it first. They also try to examine the processes involved in the acquisition of language, especially by children, the causes of observed language difficulties or handicaps and the possibly solutions to such problems.

Psycholinguistics covers a very wide area of study, but we shall restrict ourselves in this unit mainly to the aspect of language and the brain.

3.2 Language and the Brain

The human brain consists of several anatomically distinct regions, which contain an average of ten billion nerve cells or **neurons**, each of which is linked to about a thousand other neurons. These neurons participate in numerous electrical microcircuits which render thought, perception, communication and other types of mental activities (e.g. language) possible. The largest part of the brain is the **cerebrum**; this is divided into two roughly symmetrical regions or **cerebral hemispheres** – the right hemisphere and the left hemisphere (also called the right brain and the left brain). The two hemispheres of the brain are connected to the spinal cord by the brain stem and their activities are coordinated by a number of interconnecting nerve pathways (Cho, 1989; Crystal, 1997).

Neurological studies have shown that each hemisphere of the brain performs specialized functions. In other words, each side of the brain is actively involved in the performance of some activities and less involved in the performance of other activities. A hemisphere is thus said to be the **dominant** or leading one for certain types of activities or mental functions. The development of these functions within a particular cerebral hemisphere is known as **lateralization** (Cho, 1989).

An interesting fact about the human brain is that each cerebral hemisphere controls movements in and receives sensory impulses from the opposite side of the body. Many nerve fibres from the two hemispheres cross one another as they descend through the brain stem, so that the left hemisphere controls movements in the right side of the body and vice versa (Crystal, 1997). Thus, the right side of the brain or cerebral hemisphere controls movement of the left hand, arm, leg, etc, while the left brain or cerebral hemisphere controls the right hand, arm, leg, etc. This control of one side of the body by the opposite side of the brain is known as **contralateralization** (Cho, 1989). Contralateralization is believed to be the reason why damage to one side of the brain often results in bodily malfunctioning in the opposite side. It is also believed to be necessary for proper human coordination and balancing.

In the generality of cases, the language centres are located in the left cerebral hemisphere for most right-handed persons. Thus, the left brain is seen to be dominant for language for most right-handers. But this does not imply that all left-handed persons have their language areas located in their right cerebral hemispheres. Apart from language, reading and writing, the left cerebral hemisphere is also dominant for arithmetic, temporal ordering and analytic reasoning, while the right cerebral hemisphere is dominant for perception of non-linguistic sounds, music, visual and spatial skills and orientation, holistic reasoning and pattern recognition, emotional expression and creative sensibility (Cho, 1989; Crystal 1997).

SELF ASSESSMENT EXERCISE 1

1. Which part of the cerebral hemisphere controls language functions?
2. What do you understand by contralateralization?

3.3 Language Centres of the Brain

The neurological structures involved in language are not all situated in a single area of the brain. Evidence has shown that the language centres are located in different parts of the left brain, and that each of them has its own specialized function. These language centres of the brain are the **Broca's area**, and the **Wernicke's area**, located in the anterior (front) and posterior (back) parts of the left brain respectively. Broca's area and Wernicke's area is connected to each other by a bundle of nerve fibers called the **arcuate fasciculus**.

Diagrams of the human brain showing the relative positioning of Broca's and Wernicke's areas as well as other parts of the brain, and the arcuate fasciculus are presented below:

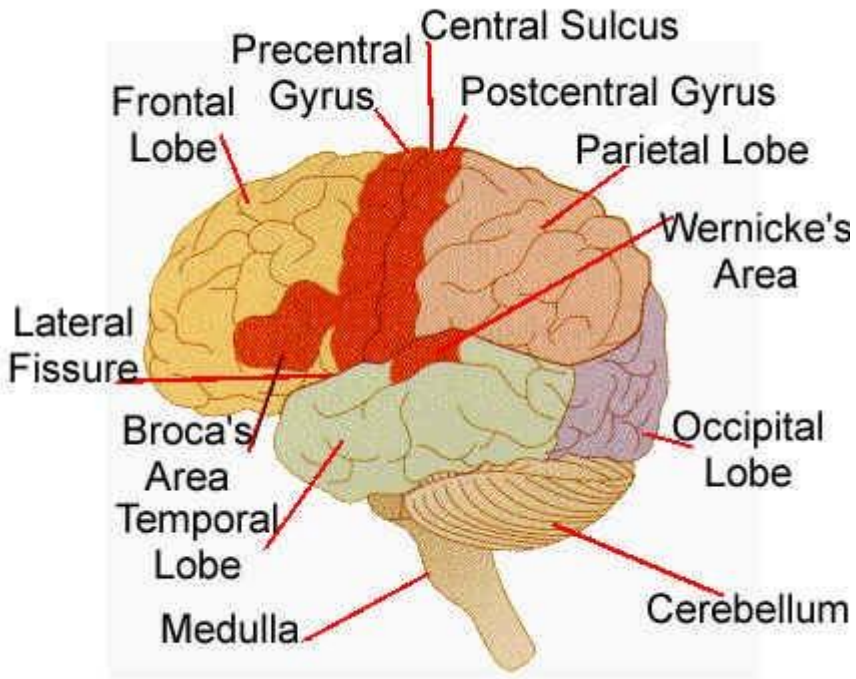
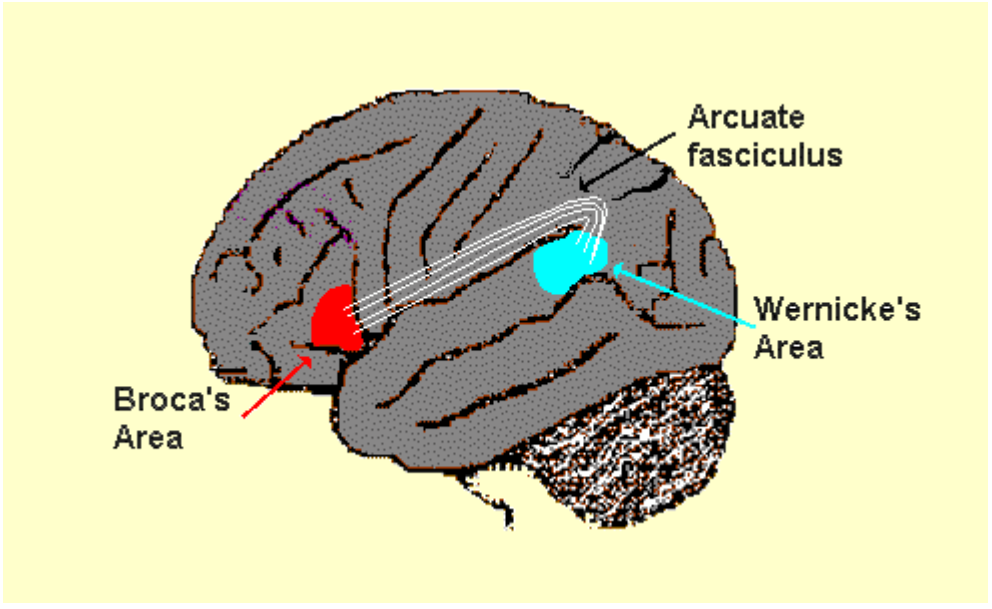


Diagram of the human brain

(Source http://www.ling.udel.edu/colin/courses/ling101/lecture23.html)



(Source: http://faculty.washington.edu/chudler/lang/html)

3.3.1 Broca's Area

The Broca's area was identified in 1861 by the Parisian neurologist (or brain surgeon) Paul Pierre Broca (1824 – 1880), after whom the area is named. It is located in the front part of the left hemisphere of the brain cortex (brain surface) and is responsible for organizing the articulatory patterns of speech (i.e. it is mainly involved in articulation or speech production). This may have something to do with the fact that it lies very close to the cortex that controls the muscles of the face, jaw, tongue, palate and larynx. Dr. Paul Pierre Broca identified this section of the brain after examining the brain of one of his patients, after the death of the patient. While alive, the patient could only utter one word "Tan", even though his language comprehension was relatively unaffected. For this reason, Dr. Broca called the patient Tan. When Broca examined Tan's brain, he discovered that the left frontal cortex had been damaged.

3.3.2 Wernicke's Area

The Wernicke's area was identified in 1873 by the German neurologist Karl Wernicke (1848 – 1905), after whom the area is also named. This area of the brain is further back and lower in the brain compared to Broca's area. In fact, Wernicke's area is in the posterior part of the temporal lobe. In 1873 (some people say 1876) Karl Wernicke found that damage to a different part of the brain could also cause language problems. Wernicke had a patient who was able to produce reasonably

good speech, but whose language comprehension was very poor. After the death of this patient, Wernicke examined his brain and found that the rear parietal/temporal region of left cerebral hemisphere had been damaged.

In most people (97%), both Broca's area and Wernicke's area are found in only the left hemisphere of the brain. Broca's area and Wernicke's area are connected by a bundle of nerve fibers called the arcuate fasciculus.

The often observed involuntary acts of scratching/gently hitting our foreheads when we have difficulty saying what we have in mind, and the back of our heads when we have difficulty understating what we have been told may not be unconnected to the fact that the Broca's area (responsible for articulation) and the Wernicke's area (responsible for comprehension) are located in the front and back parts of the brain respectively.

3.4 Aphasia or Language Disorder and the Causes

Aphasia is a communication disorder. It's a result of damage or injury to language parts of the brain. And it's more common in older adults, particularly those who have had a stroke Aphasia gets in the way of a person's ability to use or understand words. Aphasia does not impair the person's intelligence. People who have aphasia may have difficulty speaking and finding the "right" words to complete their thoughts. They may also have problems understanding conversation, reading and comprehending written words, writing words, and using numbers.

Aphasia is usually caused by a stroke or brain injury with damage to one or more parts of the brain that deal with language. According to the National Aphasia Association, about 25% to 40% of people who survive a stroke get aphasia.

Aphasia may also be caused by a brain tumor, brain infection, or dementia such as Alzheimer's disease. In some cases, aphasia is a symptom of epilepsy or other neurological disorder.

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3.5 Types of Language Disorder

3.5.1. Broca's Aphasia (Expressive Aphasia)

When a stroke injures the frontal regions of the left hemisphere, different kinds of language problems can occur. This part of the brain is important for putting words together to form complete sentences. Injury to the left frontal area can lead to what is called Broca's aphasia. Broca's aphasia is characterised with: great difficulty forming complete sentences, the patient often saying something that doesn't resemble a sentence, can have trouble understanding sentences, Can make mistakes in following directions like "left, right, under, and after."

3.5.2 Wernicke's Aphasia (Receptive Aphasia)

People with serious comprehension difficulties have what is called Wernicke's aphasia and is characterized with: the patient often saying many words that don't make sense, may fail to realize he/she is saying the wrong words, may string together a series of meaningless words that sound like a sentence but don't make sense.

3.5.3. Global Aphasia

When a stroke affects an extensive portion of the front and back regions of the left hemisphere, the result may be global aphasia characterized with the patient haveing great difficulty in understanding words and sentences, great difficulty in forming words and sentences, severe difficulties that may prevent him/her from effectively communicating.

SELF ASSESSMENT EXERCISE 2

1. Which parts of the left brain are Broca's and Wernicke's areas located?
2. What are the specific functions of the Broca's and Wernicke's areas?
3. What are the causes of aphasia?
4. List and discuss the types of aphasia you have studied in this unit.

3.6 Theories of Language Learning

A major concern of Psycholinguistics has been to provide formal descriptions of how people acquire and learn language. This concern had led to the formulation of different theories of language learning. Two of such theories are the **Behaviourist** theory of language learning and the **Mentalist** theory of language learning.

The behaviorist theory sees language as a set of habits gradually built over the years. It denies the involvement of complicated mental mechanisms in language, but claims that all that is necessary is the systematic observation of the events in the external world (stimuli) which prompt the speaker to utter sounds (responses). Language is therefore said to be stimulus-bound, being permanently under the control of a stimulus: utterances are learned responses to "controlling" stimuli. Behaviorists viewed language learning in terms of stimulus- response associations, reinforcements, shaping, generalizations, imitation and repetition. Thus, a child was assumed to learn his or her first language by imitating and repeating sounds and patterns heard around him or her, and by having his or her efforts rewarded by praise, approval, correction, etc., from other people. In order to obtain more of these rewards the child repeats the sounds and patterns so that they become habit. In so doing, the child's verbal behaviour is conditioned or shaped until the habits coincide with adult models or patterns. Skinner argued that as children continually associate words with events, objects or actions, they learn what words mean. A fallout of the behaviourist theory was John Locke's idea of ***tabula rasa*** which proposed that the minds of newborn infants are blank slates that will be differentiated and altered only through sensory experience. The belief in infants being born *tabula rasa* (in particular) and in the behaviourist theory (in general) was informed by the prevailing empiricist view of that time, but contemporary linguistic wisdom no longer maintains that view. Notable proponents of behaviourism were B. F. Skinner and Leonard Bloomfield.

On the other hand, the mentalist scholars believe that the ability to use language is innate. That is, infants are born with a significant pre-wired knowledge of how languages work and how they do not work. Chomsky, who is the main proponent of the mentalist view, posits that a child is born with an innate genetic capacity or **Universal Grammar** (UG) – initially called **L**anguage **A**cquisition **D**evice – LAD, which predisposes him or her to acquire language. In other words, humans are genetically or biologically imprinted (or endowed) with knowledge about language and its structures. This belief is otherwise known as the **Innateness Hypothesis**. In his 1959 article entitled "Review of Verbal Behaviour by B. F. Skinner" Chomsky criticized the behaviourist theory of language learning by pointing out that extrapolation from animal behaviour in laboratory conditions cannot explain the complexities of language and its acquisition, and that the sequence of events observed in boxes of rats is not applicable to language. He also argued that the terms *stimulus-response, habits, reinforcement, imitation, generalization* and *repetition* are vacuous (vague) outside the laboratory. As such, utterances are not learned responses to stimulus: we do not say things because of past reward. Chomsky maintains that language is **creative** since

humans have the capacity to understand/produce novel sentences which they have never heard/uttered before. Another strong evidence in support of the mentalist stance is the fact that all normal children acquire language in the same way. Infants begin babbling not too long after birth, and the sounds produced during this period contain the basic sounds they hear spoken around them as well as phonemes not present in their native tongue. This is strong evidence for an innate language faculty (LAD, or UG). By the time the child is two years old he or she will speak single words in the native language, and soon thereafter, will begin to form very simple, two-word "sentences". These word pairs are meaningful and often novel combinations of words known by the child. By the age of three, these two-word utterances grow in length and complexity, so that the three-year-old child can utter sentences of several words long, even including questions, negations, and clauses. These sentences often have grammatical errors (which can be explained by overgeneralization and remain consistent throughout speakers of a single language). By the time the child is four or five years old, he no longer makes these grammatical mistakes, but s/he can speak with considerable fluency in ways that closely approximate adult speech (Gardner 1983, cited in Knezek's article).

In summary, the mentalist view is that the human capacity for language is not a product of general intelligence or learning ability, but an innate, genetically determined feature of the human species who are born with considerable pre-programmed knowledge of how language works, and require only minimal exposure to activate our connection to a particular language around us. In this view therefore, the newborn infant brain already contains a universal grammar which forms the basis of competence in the particular language the child goes on to speak. The mentalist theory was informed by the prevailing rationalist view of the era.

The theories discussed above and their basic assumptions have given rise to different (foreign) language teaching methods or approaches and their corresponding syllabuses, such that language teaching methods have evolved from the **grammar-translation language teaching method** (where grammar rules were explained to students in their own language(s), with vocabulary lists learned with translation equivalents, and sentences constructed to contain the grammar and vocabulary treated and then translated into and out of the students' first language); through the **direct language teaching method** (which banished the students' own language(s) from the classroom, and had everything inside the language classroom done through the language of instruction); and **natural language teaching approach** (which postulated that the adult learner follows the same 'natural' route to proficiency as the native speaker, did not have to 'learn too hard' and so abolished all forms instruction, and correction of errors); to the current **communicative language teaching approach** (which considers learners' success in any language as being the effective use of that language in context to *communicate*, and thus insists on inculcating *communicative competence*, similar to that of the native speaker). Communicative competence here refers to the knowledge that is necessary to use a language effectively, and the ability to put that knowledge into action (Cook, 2003; Hymes 1972). It is a combination of both linguistic knowledge and pragmatic knowledge.

SELF ASSESSMENT EXERCISE 3

Discuss the basic assumptions of the behaviourist and mentalist language learning theories.

1. Which of the two theories do you subscribe to and why?
2. How have these theories influenced language teaching?

3.7 The Critical Period Hypothesis

Closely related to the theories of language learning is the Critical Period Hypothesis, which assumes that there is a certain 'critical' period when normal language acquisition or learning and development can take place, after which time language learning could only be accomplished with great difficulty. This period was considered to be the critical **period** for language learning and it extended from about age two to puberty. The assumption here is that if people learn any language after they have passed their puberty, it would not be possible to acquire the competence of a native speaker. Eric Lennerberg, the major advocate of the critical period for language learning hypothesized that the end of the critical period corresponds to the completion of the lateralization process– the location and development of language functions in the left brain. Prior to that time, he suggested, both hemispheres of the brain are involved to some extent in language and the right side of the brain can take over from the left side if the left brain got damaged. The term **cerebral plasticity** or (**neural plasticity**) was used to refer to this flexibility in brain or neurological organization. After puberty, the argument continues, there is no longer neural plasticity, which would enable the right hemisphere to take over language functions from the left hemisphere (i.e. in the event of damage to the left hemisphere).

The critical period hypothesis has been a very controversial issue. There is evidence both for and against it, such that nowadays, it is no longer rigidly held onto as was previously the case.

4.0 CONCLUSION

Psycholinguistics is the study of language in relation to the human mind, with emphasis on the mental structures and processes, which are involved in the acquisition and use of language. It uses experimental methods to investigate the cognitive processes behind language comprehension and production, their development, and the mental representations of linguistic knowledge in children as well as adults. The brain, especially the left cerebral hemisphere, plays a pivotal role in language processing. The Broca's area of the left brain controls speech production while the Wernicke's area controls comprehension. Damage to any of these sites or their surrounding regions would cause difficulty in speaking or comprehension. Brain damage may also result in an inability to read and write. Insights from psycholinguistics have been shown to influence practice in the field of language teaching.

5.0 SUMMARY

The definition of psycholinguistics has been provided in this unit. We have also examined the role of the brain in the production and comprehension of language. The specific functions of the Broca's and Wernicke's areas have been highlighted and different language disorders or aphasias that could result due to their being damaged have been discussed. Some other language problems that may develop from brain damage have equally been discussed. We have looked at the different theories of language acquisition and how their assumptions have informed decisions in the area of language teaching and learning. From all the foregoing it is quite obvious that psycholinguistics is an aspect of *applied* linguistics.

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain the role of the brain in language processing.
2. Which part of the brain is dominant for language processing?
3. Mention the language centres of the brain and their precise locations
4. Elaborate on the different theories of language acquisition/learning and their impact on language teaching practice.
5. Explicate the critical period hypothesis.

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UNIT 2 LANGUAGE ACQUISITION AND LEARNING

CONTENTS

1.0 INTRODUCTION

Possessing a language is one of the characteristics of humans. All normal humans speak, no non-human animal does. Language is the main vehicle by which we know about other people's thoughts and each time we speak we are revealing something about language. In this unit, we will learn about Language Acquisition with particular reference to First and Second Language. We will also see how acquiring a first language differs from that of a second language. Error analysis and language transfer will be examined too.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- explain language acquisition in relation to first language and second language;
- explain error analysis and language transfer;
- know the differences between L_1 and L_2 acquisition;
- identify the basic requirement for first language acquisition;
- know the acquisition process; and
- establish the role of interlanguage in second language learning

3.0 MAIN CONTENT

3.1 First Language Acquisition

First language acquisition is usually associated with children and it refers to a situation whereby a child acquires first his/her mother tongue or the language of the immediate environment after birth.

First language acquisition is a unique process in human development. It takes place under conditions that cannot be duplicated later in life. Acquiring a first language is something every child does successfully in a matter of few years and without the need for formal lessons. In fact one of the first things that should strike any parent is the speed and apparent accuracy in which a child proceeds to learn his or her own language.

There is a general consensus that every normal child is endowed with some linguistic knowledge to acquire language. The endowment of this linguistic ability has been described as Universal Grammar (UG). Universal Grammar is a common inheritance and every normal human child has this natural endowment no matter where the child is born or the language its parents speak. This explains why a child of Yoruba parents will be able to speak Ibibio as far as the Ibibio language surrounds him.

A child growing up in the first two or three years requires interaction with other Language – users in other to bring the 'Language-faculty' into operation with a particular language, such as English. The child also must be physically capable of sending and receiving sound signals in a Language. All infants make 'cooing' and 'babbling' noises during the first few months, but congenitally deaf infants stop after six months. So, in other to speak a Language, a child must be able to hear that Language being used. By itself, however, hearing Language sounds is not enough. One reported case has demonstrated that, with deaf parents who gave their normal-hearing son ample exposure to television and radio programs, the child did not acquire an ability to speak or understand English. What he did learn very effectively, by the age of three, was the use of American Sign Language-the language you use to interact with his parents. A crucial requirement appears to be the opportunity to interact with others via language.

Normal children can differ by a year or more in their rate of language development, though the stages they pass through are generally the same regardless of how stretched out or compressed since we could say the same thing for sitting up, standing, walking using the hands, etc.

First language acquisition begins very early in humans and begins logically enough with the acquisition of a language's sound patterns. Shortly before their first birthday, babies begin to understand words, and around that birthday, they start to produce them. Words are usually produced in isolation; this one-word stage can last from two months to a year.

It is observed that children's first words are similar all over the world. About half the words are for objects, food, clothing, vehicles, toys, household items and people. Around 18 months, language changes in two ways: vocabulary growth increases, the child begins to learn words at a rate of one every two waking hours and will keep learning that rate or faster through adolescence. Children's two-word combinations are highly similar across cultures.

Between the ages of late two's and mid-three's children's language blooms into fluent grammatical conversation so rapidly. Sentence length increases steadily, doubling every month reaching the thousands before the third birthday.

3.1.1 The Acquisition Process

As the Linguistic repertoire of the child increases, it is often assumed that the child is, in some sense, being 'taught' the language. This view seems to underestimate what the child actually does. For the vast majority of children, no one provides any instruction on how to speak the language. Nor should we picture a little empty head gradually being filled with words and phrases. A much more realistic view would have children actively constructing, from what is said to them, possible ways of using the language. The child's linguistics production is mostly a matter of trying out construction and testing whether they work or not. It is simply not possible that the child is acquiring the language through a process of consistently imitating (parrot-fashion) adult speech. Of course, the child can be heard to repeat versions of what adults say and is in the process of adopting a lot of vocabulary from their speech. However, adults simply do not produce many of the types of expressions which turn up in children's speech. Nor does adult 'correction' seem to be a very effective determiner of how the child speaks. A lot of very amusing conversational snippets, involving an adult's attempt to correct a child's speech, seem to demonstrate the hopefulness of the task. Even when the correction is attempted in a more subtle manner, the child will continue to use a personally constructed form, despite the adult's repetition of what the correct form should be. Note that in the following dialogue (quoted in Cazden, 1972, cited in Yule 1996), the child, a four- year old, is neither imitating the adult's speech nor accepting the adult's correction.

Child:	*My teacher holded the baby rabbits and we patted them*
Mother:	*Did you say your teacher held the baby rabbits?*
Child:	*Yes*
Mother:	*What did you say she did?*
Child:	*She holded the baby rabbits and we patted them*
Mother:	*Did you say she held them tightly?*
Child:	*No, she holded them loosely*

One factor which seems to be crucial in the child's acquisition process is the actual use of sound and word combinations, either in interaction with others or in word-play, alone. One two-year old, tape-recorded as he lay in bed alone could be heard playing with

words and phrases; I go dis way…way bay…baby do dis bib…all bib…dere (from Weir, 1966). It is practice of this type which seems to be an important factor in the development of the child's Linguistics repertoire. The details of this development beyond the telegraphic stage have been traced, in a number of studies, via the Linguistic elements which begin to turn up, on a regular basis, in the steady stream of speech emerging from the little chatterbox.

3.2 Second Language Acquisition

Second Language Acquisition, or SLA is the process by which people learn other languages in addition to their native language(s).

According to O' Grady and Dobrovolsky (1989), "The term second language is used to mean a language that is learned after the first or native language is relatively established…". The term second language may refer to a second, third, fourth or even twentieth language. The language to be learnt is often referred to as the target language.

Although some linguists make the distinction between acquisition of second language and second language learning, the two will be used interchangeably here.

Second language acquisition is predominantly determined by environmental conditions and by the objectives of the learner. It is often marked by the absence of an environment in which the language is constantly used. The pupil usually does not live in the world of the language he is trying to master. He is not surrounded by it. The second language learning environment is most often restricted to the classroom. Since the student already has a language with which to communicate and think, the motivation has to be external for second language acquisition.

In trying to learn or acquire a second language the learner's L_1 exercises influence on his performance in the L_2. This will be treated in detail later.

3.3 Error Analysis

The field of error analysis in SLA was established in the 1970's as an alternative to contrastive analysis (an approach through which applied linguists sought to use the formal distinctions between the learner's first and second languages, to predict errors). A key finding of error analysis has been that learners making faulty inferences about the rules of the new language produce many learner errors.

Error analysis distinguishes between errors, which are systematic, and mistakes, which are not. They often seek to develop a typology of errors. Errors can be classified according to basic types: emissive, additive, substitutive or related to word order. They can be classified by how apparent they are: overt errors such as "I hurt" are obvious even out of context, whereas covert errors are evident only in context.

Since in the world of knowledge, no theory goes without criticisms, error analysis was not an exception. The theory had methodological problems since it is often impossible to ascertain what kind of error a learner is making. Also, error analysis can deal effectively only with learner production (speaking and writing) and not with learner reception (listening and reading). Furthermore, it cannot control for learner use of communicative strategies such as avoidance, in which learners simply do not use a form with which they are uncomfortable.

3.4 Language Transfer

Language transfer typically refers to the learner's trying to apply rules and forms of the first language into the second language. The term can also include the transfer of features from one additional language to another (such as from a second to a third language), although this is less common.

Contrastive analysis, which was replaced, by error analysis sought to predict all learner errors based on language transfer. Transfer is an important factor in second language learning at all levels. Typically learners begin by transferring sounds (phonetic transfer) and meanings (semantic transfer), as well as various rules including word order and pragmatics from their L_1 into the L_2, the implication here is that the L_1 can hinder progress of L_2 learners if there are little or no similarities between the two languages since the learner will tend to transfer his L_1 to the L_2. It should be noted that this transfer causes interference. L_2 learning can be facilitated when there are more similarities between the two languages (i.e. L_1 and L_2). In other words, where the features of the L1 are similar to those of the L_2 the L_1 will thus be a good foundation for the L_2. The role of transfer however diminishes as learner's progress and gains more experience with the target language.

3.5 Inter-language

However, on close inspection, the language produced by learners contains a large number of 'errors' which seem to have no connection to the forms of either L1 or L2. For example, the Spanish speaker who says in English '*She name is Maria'* is producing a form which is not used by adult speakers of English, does not occur in English L1 acquisition by children, and is not found in Spanish. Evidence of this sort suggests that there is some in-between system used in L2 acquisition which certainly contains aspects of L1 and L2, but which is an inherently variable system with rules of its own. This system is called an **Interlanguage** and it is now considered to be the basis of all L2 production.

If some learners develop a fairly fixed repertoire of L2 forms, containing many features which do not match the target language, and they do not progress any further, their interlanguage is said to have 'fossilized'. The process of **fossilization** in L2 pronunciation is one obvious cause of a foreign accent. However, an interlanguage is not designed to fossilize. It will naturally develop and become a more effective means of communication, given appropriate conditions. Discovering just what count as the appropriate conditions for successful L_2 learning is an ongoing area of study.

3.6 Differences between First Language (L_1) and Second Language (L_2) Acquisition

Feature	L_1 acquisitions	L_2 (foreign language acquisition)
Overall success	Children normally achieve perfect L_1 mastery	Adult L_2 learners are unlikely to achieve perfect L_2 mastery
General failure	Success guaranteed	Complete success rare
Goals	Target language competence	L_2 learners may be content with less than target language competence or more concerned with fluency than accuracy
Fossilization	Unknown	Common, plus backsliding (i.e. return to earlier stages of development)
Instruction	Not needed	Helpful or necessary
Negative evidence	Correction not found and not necessary	Correction generally helpful or necessary
Affective factors	Not involved	Play a major role determining success

Source: Ellis 94 (based on Bley-Vroman 1988

Looking at the above column for L_2 (foreign language acquisition), it could be said that children L_2 learners also do not achieve a perfect L_2 mastery since they will be influenced by their L_1.

SELF ASSESSMENT EXERCISE

1. What do you understand by first language acquisition
2. Why do you think the role of transfer can affect second language acquisition?
3. Differentiate between L_1 and L_2 acquisition.
4. What do you understand by interlanguage?

4.0 CONCLUSION

Language acquisition is unique to humans as it is obvious that it begins very early in the human life span. Acquiring a second language is difficult when compared to the acquisition of first language. This is partly due to the fact that L_1 children mostly acquire language unconsciously in different settings with different exposure to language than L_2 learners.

Following the role of transfer in second language acquisition, it is observed that learning a second language would be made easier if the learners are made aware of the similarities and differences between the first language and target language. Interlanguage however has been seen to be the basis for all L_2 production.

5.0 SUMMARY

In this unit, we have dealt with language acquisition in relation to first and second languages. We have showed that first language acquisition has to do with the language a child acquires after birth while second language acquisition is the process of acquiring one or more languages after the first have been acquired. It has also been shown that there are differences between L_1 and L_2 acquisition and that second language learners find problems with interference due to transfer of features from their first language, a situation that is never experienced by a first language learner. The study has also observed some in-between system (Interlanguage) used in L2 acquisition.

6.0 TUTOR-MARKED ASSIGNMENTS

1. What do you understand by second language acquisition?
2. Mention 3 differences between first language and second language acquisition.
3. What are the necessary requirements for L_1 acquisition?

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UNIT 3 LANGUAGE AND MACHINE

CONTENTS

1.0 INTRODUCTION

Our knowledge of language can be used to develop systems that recognize speech and writing, understand text well enough to select information, translate between different languages and generate speech as well as the printed word. The interest here is on the result of natural language processing by a machine, or more specifically a computer. It is necessary to specify that it is a natural language (e.g. English) rather than an artificial language (e.g. BASIC), since it is the human capacity to use language that is being modeled. We will specifically look at language machine, speech synthesis and recognition and artificial intelligence (AI) in this unit.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- explain what you understand by language machine;
- understand what is meant by artificial intelligence;
- explain what you understand by speech synthesis and speech recognition; and
- know the workings of some understander-systems.

3.0 MAIN CONTENT

3.1 Language Machine

The term language machine is an umbrella term for several developments in computer technology. Such developments will provide us with opportunities to carry out familiar tasks in new ways. For example we will be able to do the following:

- Talk to machines and have them transcribe accurately what we have said (speech recognition).
- Talk to machines and have them understand the basic content of what we have said, so they can respond appropriately to a question about information that they contain, or to which they can provide access (speech understanding);
- Use machines that translate words automatically from one language to another (whether we input words by speech, handwriting, by scanning text or using a keyboard), or use machines to translate our words to several languages (machine translation);
- Produce a draft of our words in another language for subsequent refinement (machine-assisted translation);
- Read out loud screen-based text such as email, web pages or word-processed documents (speech synthesis);
- Search through databases of multilingual documents without needing the ability to speak, type or read all of the languages involved;
- Issue commands to 'intelligent devices' – such as a car radio or a mobile phone – using only our voices;
- Speak to a computer and get feedback on the 'corrections' of pronunciation or the appropriateness of lexical choices and grammar style;
- Use computers interactively in the teaching of language.

At the heart of each of these lies a model of language that understands not simply the vocabulary of one or more languages, but also grammar, syntax and semantics.

A language machine is therefore a computer that is capable in one way or another, of extracting and acting on the meaning of words.

3.1.1 Speech Synthesis and Recognition

One of the first aspects of natural language to be modeled was the actual articulation of speech sounds. Early models of talking machines were essentially devices that mechanically simulated the operations of the human vocal tract. More modern attempts to create speech electronically are generally described as speech synthesis, and the resulting output is called synthetic speech. In many speech recognition systems, programmes allow computers to follow simple spoken commands (e.g. open file name) that the computer has stored as sound units in memory. These programmes can replace many keyboard functions. More complex programmes can have much larger recognition vocabularies and can create written text from speech at a fast rate.

Typically such systems require very clear speech and have to be trained to recognize the user's voice. They often only recognize spoken words when produced by the same voice. However, there are problems of making synthetic speech systems more flexible. There is more to speech production than the pronunciation of words. Intonation and pausing, for example, have to be included, as well as synthetic rules for the formation of natural language sentences. Care has also to be taken that the natural processes of assimilation and elision are not ignored. As a result of research in this area, increasingly sophisticated models of speech production have been developed and more natural sounding speech has been achieved. However, the development of synthetic speech would only produce a model of articulation and not model of speaking since the human activity of speaking involves having something to say and not just a means of saying it. Having something to say is an attribute of the human's mental processes and attempting to model that attribute is in effect, the modeling of intelligence.

3.1.2 Artificial Intelligence (AI)

The investigation and development of models of intelligent behaviour is generally undertaken in the field of artificial intelligence. Artificial intelligence has been defined as "the science of making machines do things that would require intelligence if done by men" (Minisky 1968). The field has always taken language production and understanding as a major area of investigation. One ultimate goal of the field is to produce a computer, which can function as a conversational partner though most of the research has been devoted to developing models to cope with language interaction which can take place at a computer terminal.

Think how much more easily you could use your computer, by simply telling it what to do. Suppose also that many of the features of your car were voice-operated, such as using the telephone, selecting a CD, opening the windows and learning about traffic conditions ahead. Consider how much time you could save if a computer could find exactly the information you are looking for, from multilingual sources and do it much more efficiently than you.

Imagine picking up the telephone to speak to someone in another country. You have no common language but you are still able to communicate; each of you speaking and hearing your own language.

3.1.3 Parsers

One of the first developments in the AI approach to the workings of a natural language like English was to produce a means of parsing English sentences. This is basically a process of working from left to right along an incoming English sentence, predicting which elements will come next. A number of different types of parsers have been developed, but we will present a brief description of one very elementary version which should serve to illustrate basic processes involved in analyzing a simple sentence like 'the boy hit a ball'.

The parser begins by assigning 'sentence' status to the incoming string of linguistic forms and predicts that the first major constituent will be a 'noun phrase'. The first element encountered is 'the' which is checked in the dictionary to see if it fits the category article (i.e. the predicted first element in a noun phrase. Since it does, it is assigned this description and the parser predicts that the next elements may fit the category 'adjective'. The word boy is checked and turns out not to be an adjective. This word is then checked against the next predicted category of 'noun' and is identified as such and this completes the specification of noun phrase (which can be assigned the functional label of 'subject'). This is just and oversimplified version of what a parser does and it provides an illustration of how a computer, with a limited grammar, a dictionary and a set of procedures, can produce a linguistic description of some simple sentences it receives.

3.2 Machine Translation

What is Machine translation? Machine translation (MT) is the application of computers to the task of translating texts from one natural language to another. One of the very earliest pursuits in computer science Machine Translation (MT) has proved to be an elusive goal but today a number of systems are available which produce output which, if not perfect, is of sufficient quality to be useful in a number of specific domains. Like many Artificial Intelligent (AI) tasks translation requires an immense amount of knowledge about language and the world.

Speech-to-Speech Translation – The goal of the speech-to-speech translation research is to enable real-time, interpersonal communication via natural spoken language for people who do not share a common language.

The multilingual automatic speech-to-speech translator (MASTOR) system is the first speech-to-speech system that allows for bidirectional (English-Mandarin) free-form speech input and output.

3.3 Speech and Language Technology (SALT)

Speech and language technology is a term used to describe the growing inter-disciplinary field which brings together theory and practical applications of Linguistics, computing, Engineering and a host of related areas. SALT is only one of several rival names and acronyms for the field. Human Language Technology (HLT), and Speech and Language Engineering (SLE) are others.

From children's toys which respond to spoken instructions, to a digitized voice giving a telephone caller push-button choices. It is clear that many current computing technologies have acquired the ability to handle natural language in some way. Indeed, we can see technology and language meeting in an ever-growing number of domains – the internet facilitates transmission of e-mail messages and publication of texts in world wide web pages; word processors are ubiquitous in the production of print, Computer – Assisted Language Learning (CALL).

Systems can augment traditional modes of language teaching and learning through exercises in vocabulary, grammar, reading, and writing, listening and speaking skills. As these technologies develop and converge, we may even anticipate the usefulness of the language machine in practical contexts such as language, teaching and learning.

The same technologies apply not only to English but to other languages such as Ibibio, Yoruba, Hausa, etc. E-mail messages need not be in English: technology can be used to transmit and receive any sequence of characters and the world wide web allows a variety.

Recent word processors may provide spell-checkers and guidance on grammar and points of style, but incorporate only rudimentary 'Artificial Intelligence' models of English. Likewise, the software of most Computer Assisted Language Learning (CALL) systems would work just as effectively if it were equipped with drills of chemical formulae or historic dates and events

3.4 Digital Character 'talk' to the Deaf

Using digital avaters like signing translators could significantly expand the ways deaf and hard of hearing people communicate with the hearing world. The avaters are computer animations designed to look and move like real people. A computer programmer takes spoken English and converts it in real – time to text. The digital avaters then take this English text and sign its meaning on a display screen, in effect becoming translator between spoken English and British sign language.

3.5 Understander - System

Under this sub-title, we will explore the working of three such systems and point out some of their relevant features. First let us consider a program called ELIZA.

The program ELIZA was intended to simulate or even to parody the psychotherapist's role in a particular type of non-directive psychoanalysis. The 'patient' would sit at a computer terminal, type in one side of the interaction, and receive appropriate responses. The resulting dialogue might contain exchanges like:

Patient: *I'm feeling a bit tired*
Analyst: *Why do you think you're feeling a bit tired?.*
With a very simple set of Linguistic structures, the program could give the impression of considerable thought behind its responses.

Although ELIZA provides an interesting view of how one type of psychotherapy may work, it yields very limited insights into the way language interacts with knowledge and understanding. Very simply, ELIZA does not 'interpret' the linguistic material it receives or produces. In essence, it has no understanding of what is taking place in the conversation.

As noted, ELIZA is not a very good example of an understander - system, it does demonstrate the possibility of working, computationally, with a very small subset of language and a very limited 'world' of reference. By giving the machine an extremely restricted number of things to be talked about, it is possible to carry the illusion of understanding quite far. One of the best known examples of this type of system is called SHRDLU.

SHRDLU is the second type of program we are considering. The machine can follow commands by a human to move objects around in its world. If the human is unclear in referring to an object, the machine is capable of asking for clarification.

The machine also keeps track of what is moved and can answer questions about what has happened (i.e. it has a 'memory') and about where objects are at any point, as in this extract:

Human: *What does the box contain?*
Machine: *The blue pyramid and the blue block*

The most impressive aspect of SHRDLU are related to its power of working out what the human's linguistic contributions 'mean' in terms of its world. It has the capacity to decipher complex linguistic expressions (via a syntactic parser and a semantics) in a way that ELIZA did not even attempt.

The great advantage in terms of comprehensive 'knowledge' of a small world like the one this program enjoys actually turns out to be its greatest limitation as a model of how humans handle linguistic interaction. Humans do operate in 'expert' roles within limited domains analogous to the blocks world, but they more commonly operate with complex plans and goals and bring wide-ranging aspect belief and knowledge to bear on their interpretation of language. Other programs have been developed which try to model many of these other aspects, but the problems created by Limited amounts of background knowledge remain.. It may be that the development of more sophisticated programs for modeling general human intelligence (as it relates to language) will be created via the integration of numbers of different subsystems, each operating over Limited domains of 'expert' knowledge.

The third type of program we are considering is PRAGMA. In order to use an expert knowledge in interaction, the machine has to be provided with a concept of what others know or wants to know. One way of doing this is through plan-based systems. Basically, such a system attempts to infer the user's plan behind the question asked. For example, many expert systems can provide knowledge in the following way:

User: *Where is Uyo?*
System: *It's in Akwa-Ibom state.*

However, a system that attempts to recognize that users plan will be capable of deciding that if a user asks about a location (Uyo), then that user may be planning to go to the location. So, additional information known about the location that may affect the plan should be given. That is exactly how PRAGMA works.

It is quite an advance in machine-human interaction when the machine can recognize plans that the human has, but the machine itself cannot have. At present (luckily), your computer isn't planning to grab your pizza. But that may be a clue to what is missing. The computer doesn't have any goals of its own. Unlike humans, it doesn't want to know what is going on, and it doesn't seem to want to learn. Perhaps the most interesting future direction in this area will be the development of a general computational capacity, not to work from a static store of background knowledge, but to 'learn' via linguistic interaction and to develop a dynamic network of knowledge structures. It would seem that the limits to this type of development are at least in part, occasioned by the limits which exists in our own understanding of how we operate as reasonably efficient linguistic machines. By studying the nature of language and trying to create models of what we think may be going on, we may eventually come to understand the workings of our own internal softwares.

SELF ASSESSMENT EXERCISE

1. What do you understand by speech synthesis and speech recognition?
2. What do you understand by the workings of parsers?

4.0 CONCLUSION

Machines or computers that in some sense simulate human language and human language behaviour are used daily around us. Indeed, such machines already have a long history and have acquired a place in our culture and our expectations.

5.0 SUMMARY

In this unit, we have seen how available language machines (computers) recognize natural language, process it in some intelligent way and communicate the result in natural language. It has also been shown that machines that talk – what we now know as speech synthesizers – are the oldest of the technologies that make up the language machine.

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain in your own way the meaning of artificial intelligence
2. What do you understand by the term language machine?
3. What is the advantage of PRAGMA over ELIZA and SHRDLU?

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MODULE 4 DIACHRONIC AND SYNCHRONIC LINGUISTICS

UNIT 1 HISTORICAL LINGUISTICS

CONTENTS

1.0 INTRODUCTION

This module introduces you to a field of linguistic study that is concerned with tracing language development back over a period of time (diachronic) as well as studying language within its current timeframe (synchronic). Unit 1 discusses historical linguistics as an approach to the study of language over time. Unit 2 introduces you to the various changes languages undergo and how these changes are accounted for. Unit 3 introduces you to a relatively new field of linguistics whose goal is to preserve languages by documenting them. This unit is aimed at introducing you to the field of historical/comparative linguistics. Historical study of languages helps us to undertake researches in areas relating to unwritten languages and historical/comparative linguistics.

According to Williamson (1988:3), historical linguistics originated in nineteenth century Europe, but owed much of its stimulus to sources outside Europe, in this case India. To their greatest surprise, Europeans discovered that Sanskrit, the sacred classical language of India, and the modern Indian languages were related to the European languages they already knew.

Historical linguistics seeks to investigate and describe the way in which languages change or maintain their structure during the course of time, because, according to Bynon (1977:1), all living languages change with time. Its domain therefore is language in its diachronic aspect. The term 'Diachronic' refers to linguistic processes that take place over time. However, it is fortunate that languages change rather slowly compared to the human life span, and many of the changes are revealed when languages have written records. The past states of the language subjected to comparative analysis may be either attested in written documents or the products of reconstruction based on the comparison of related languages or dialects. In a nutshell, the branch of linguistics that deals with how languages change, what kinds of changes occur, and why they occurred is called historical and comparative linguistics. It is historical because it deals with the history of particular languages, and comparative because it deals with relations between languages (Fromkin et al 2003).

The beginning of modern historical linguistics is usually dated to the famous statement made by Sir William Jones in 1786, that:
The Sanskrit language is of a wonderful structure; more perfect than the Greek, more copious than the Latin, and more exquisitely refined than either; yet bearing to both of them a stronger affinity, both in the roots of verbs and in the forms of grammar, than could possibly have been produced by accident; so strong that no philologer could examine the Sanskrit, Greek, and Latin, without believing them to have sprung from some common source which, perhaps, no longer exists.

This statement was the first clear expression of one of the basic tenets of historical linguistics concerning the fact that present-day languages are the varied developments or continuations of an older, original language, or proto-language. A proto-language, like any other language, differentiates into dialects, and these dialects, if left to them, gradually develop into independent languages. Nevertheless, so long as some original similarities between such daughter languages remain, and can be reliably distinguished from similarities due to chance or borrowing, they serve to trace the original relationship between the languages.

3.0 MAIN CONTENT

2.1. Relations between Languages

The nineteenth-century historical and comparative linguistics based their theories on the observations that there is a resemblance between certain languages, and that the differences among languages showing such resemblance are systematic and there are regular sound correspondences. They also assumed that languages displaying systematic differences, no matter how slight in resemblance, must have descended from a common source language or were genetically related. The chief goal of the nineteenth-century historical-comparativist was to develop and elucidate the genetic relationships that exist among the world's languages. They also aimed to establish the major language families of the world and to define principles for the classification of languages. Their principles and methods are what we are going to use here to reconstruct the proto-language of some Akwa Ibom speech forms, and reclassify them according to feedback from a thorough lexicostatistical analysis of cognate forms from these randomly selected Akwa Ibom speech forms.

In 1786, one Sir William Jones, a British scholar who found it best to reside in India because of his sympathy for the rebellious American colonists, delivered a paper in which he observed that Sanskrit bore to Greek and Latin a stronger affinity than could have been produced by accident. In fact, Jeffers and Lehiste (1982:64:), called Jones an eminent Sanskrit's. About thirty years after Jones delivered his important paper, the German linguist Franz Bopp pointed out the relationships among Sanskrit, Latin, Greek, Persian and Germanic. At the same time, a young Danish scholar named Rasmus Rask corroborated these results, and brought Lithuanian and Armenican into the relationship as well. Rask was the first scholar to describe formally the regularity of certain phonological differences between related languages.

It should also be noted that Wardhaugh (1972:18) asserted that the historical and comparative linguist deals with the historical relationship between languages. The techniques in this field were developed with languages whose history can be traced through written records. These techniques have progressed to the point where they can be reliably used for establishing the relationships and reconstructing the history of unwritten languages. A systematic pattern of phonological correspondence across many words is unlikely to have arisen by chance, whereas completely unrelated languages often develop surprising similarities in particular words, entirely by chance. Given systematic patterns of this type, we can then start to apply the comparative method to reconstruct the parent language. This in turn allows us to examine relationships among reconstructed languages.

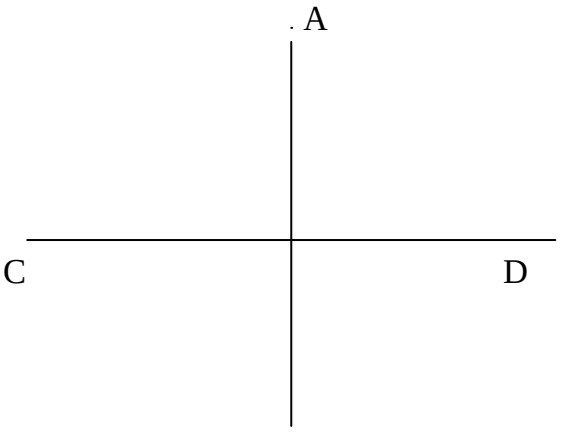
However, establishing patterns of this type is difficult. It requires a large vocabulary in all the languages or speech forms being compared, in order to find enough cognates. It also requires a deep knowledge of the grammar of each of the speech forms, in order to see cognate relationships that might be obscured by morphology and contextual phonological change, and not to be fooled into seeing false cognates where morphology or phonology have created chance similarities.

Another approach, pioneered by the American structuralist linguist Morris Swadesh, is called lexicostatistics. For a set of languages or speech forms of interest, we get a small vocabulary list of common, basic words (typically 100 – 200 items). For each pair of speech forms or languages, we determine the percentage of words on this list that appear to be cognate. It should be noted that the determination of cognation is dependent on the subjective judgment of the linguist, and we expect some errors, especially if the scholar does not know the languages or speech forms very well, but we hope that the error rate will be small enough not to affect the results. We can then arrange these cognate percentages in a table, from which we draw some conclusions about the degree of relationship among the languages involved.

There has been a great deal of controversy about whether family trees based on lexicostatistics are reliable. Those who doubt it point to the possibility that cognate percentages might be strongly affected by vocabulary borrowing, either in a negative or positive direction. For instance, Japanese borrowed many words from Chinese without becoming a Sino-Tibetan language. It has also recently borrowed many words from English without becoming an Indo-European language. Those, like us, who favour lexicostatistics argue that this sort of borrowing is less common in the basic-vocabulary wordlists that they use.

2.2. Comparison of Synchronic and Diachronic Studies

The field of linguistics may be divided in terms of three dichotomies: Synchronic versus diachronic, theoretical versus applied, micro versus macro linguistics. A synchronic description of a language describes the language as it is at a given time, while a diachronic description is concerned with the historical development of the language and the structural changes that have taken place in it. Synchronic studies is a term used to characterize linguistic processes and states describable at a given moment in time. A diachronic study is a term used to characterize linguistic processes continuing through time.



Diachronic

Tools and Date for Diachronic Linguistics.

Data: a) Written text: where language (s) enjoy (s) long history of literary Culture – like most Indo-European (I E) languages.
b) Oral texts.
c) Word lists and lists of other units of description.

Tools: For Data Collection.

For Data Analysis E.g. Grammatical models and Instructional Materials.

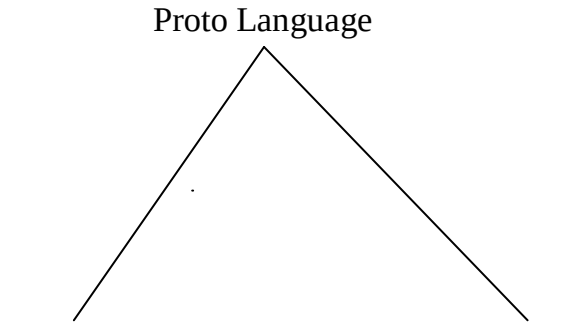
Tools for Data Collection

a) Hard and Soft ware
b) Recording sheets

Tools for Data Analysis

a) Descriptive models
b) Text Statistics – where data is quantified
c) Charts, graphs, etc.
d) Dialectal Analysis
e) Internal Reconstruction
f) Comparative Reconstruction

2.2.1. Basic Concepts of Diachronic Linguistics



A and B are sisters

Criteria for classifying speech forms as dialects or languages, (see Gleason Ch. 18)

		Language	Dialect
1.	Mutual intelligibility	x	
2.	Common Elements (in %)	Low %	High %
3.	Bundles of Isoglosses		
4.	Use of Overall Pattern	x	

2.2.2. *Proto/Parent Language*

The term Proto language or parent language is used to refer to the earliest form of a language established by means of the comparative method of reconstruction.

2.2.3. Daughter/Sister Language(s)

A daughter language is a language, which descended from a proto language. Sister language is related language, which descended from a common ancestor.

2.3. Comparative Reconstruction

Comparative Reconstruction is the procedure for reconstructing a proto- language by comparing cognate words in daughter languages. The objectives of a comparative reconstruction are to i) discover sound correspondences between cognate forms; ii) reconstruct proto-forms; and iii) determine degrees of genetic relationships. Certain assumptions are made prior to conducting a reconstruction and they are:

i) **The Relatedness Hypothesis:** Languages or dialects to be compared are assumed to descend from a common parent language.

ii) **Regularity Hypothesis:** Sound changes are regular. Each sound of a given dialect will be changed similarly at every occurrence in like circumstances if it is changed at all.

3.3.1 Sound Correspondences

Sound Correspondences are sounds occurring in a particular place in a particular morpheme in cognate words found in related dialects or languages. For example, the initial consonants in a set of words suspected of being cognates are compared with one another. Cognates usually have similarities in both form and meaning. After all sounds in analogous position have been examined and sound correspondences have been established, one may proceed to reconstruct the shape of the word in the protolanguage. On the basis of sound correspondences, one attempts to establish a reconstructed form from which all sounds in the daughter languages could have been derived. The term daughter language is used to designate each of any number of related languages as a historical descendant or continuation of some earlier language. The cognate relationship that exists among a group of daughter languages is characterized by the term sister language. According to Jeffers and Lehiste (1982), sound correspondences involve a situation where a set of heterogeneous languages come to share common features so that what was genetically different has now become typologically homogenous.

3.3.2 Proto-Forms and Reflexes

Protoforms are hypothetical forms, which have been reconstructed. Reflexes are opposite of protoforms. A reflex sound is a sound occupying a specific position in a particular morpheme, which appears to be a continuation of a sound occupying some position in the past
e.g. roud r ə u d : 'road'

Protosegment reflex a : b
(o : ə)

a) **Identify across cognate forms**

	Tongue	Ten	Body	Eat
Efik	edeme	duob	idem	dia
Ibibio	edeme	duob	idem	dia
Anaan	edeme	duob	idem	dia

b) Systematic Correspondences of un-identical Sounds

	hand	gather	chin
Eket	uba?	bo?	ebe?
Ibibio	ubok	bok	ebek

Where Ibibio has /k/ at work final positions Efik has a glottal stop, and /d/ in Ibibio also corresponds with /l/in Oro.

3.3.3 Distinguishing Borrowed forms

According to Jeffers and Lehiste (1982:174) borrowed forms occur due to language change due to language contact. Borrowed forms are also identified or distinguished due to the differences in phonology and morphology observed or noticed. Borrowed forms are seen to be strange in the vocabulary of the language also. It comes about through language contact and the interaction of people from different cultures.

3.3.4 Lexicostatistics and the Family Tree Hypothesis

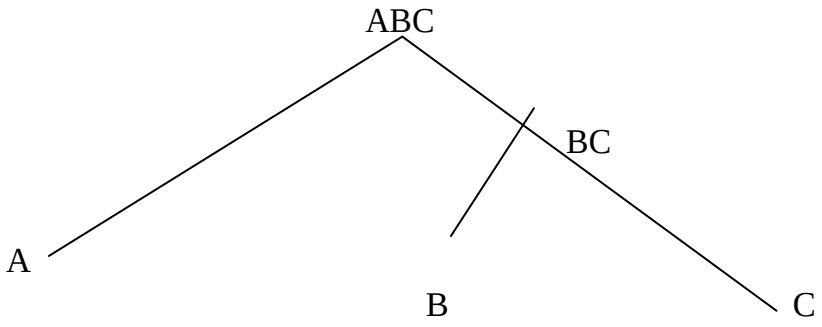
Lexicostatistics has been seen as a quick means of establishing genetic relationships among languages. According to Langacker (1972) lexicostatistics is the study of the vocabulary of languages statistically for historical inference. One method that is usually used is glottochronology. Lexicostatistics has been used for three main purposes in comparative linguistics:

To determine the time of separation of genetically related languages (glottochronology), to establish the existence of relationships among languages, and to sub-group related languages. The technique of lexicostatistics involves the comparison of basic vocabularies of languages. Lexicostatistics is also a device used in diachronic analysis to determine the degree of genetic relationship between speech forms, which are assumed to have descended from a common ancestor. Related to genetic relationship is the family tree hypothesis, which has to do with the setting up of a branching out of daughter languages from the ancestor, a branching out that has led to the current state in which the languages or speech forms have been found. By family three is meant here as the application of the hypothesis concerning the development of different species to the evolution of daughter languages from an ancestor language.

The notion that similar languages are related and descended from an earlier, common language (a protolanguage) goes back to the 18th century when Sir William Jones suggested that the linguistic similarities of Sanskrit to ancient Greek and Latin could best be accounted for by assuming that all three were descended from a common ancestral language. This language is called **Proto-Indo-European**. The Family Tree theory, as formulated by August Schteicher in 1871, assumes that languages change regularly or in regular, recognizable ways and that because of this, similarities among languages are due to a "genetic" relationship among those languages.

In keeping with the analogy of language relationships to human families, the theory makes use of the terms mother (or parent), daughter, and sister languages. In the family tree of Indo-European, French and Spanish are sisters; both are daughters of Latin. Germanic is the mother of English, and so on. The model clearly shows the direction of change and the relations among languages, the older stages of the languages being located higher in the tree and direct descendants being linked to their ancestors through the straight lines or "branches".

Languages compared are assumed to have descended from a common ancestor. Genetic relationship between some subset of the daughter languages of a larger family is defined in terms of the family tree hypothesis and is established by means of the comparative method.



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UNIT 2 LANGUAGE CHANGE

CONTENTS

1.0 INTRODUCTION

All spoken languages change over time, albeit more slowly than the human life span. When speakers to their offspring culturally transmit a language over many generations, it can become so different that it is given a different name. Thus, for example, the Latin spoken in parts of the Iberian Peninsula changed over time and became Spanish, Proto-Germanic became English in England, etc. The history of English which spans a period of over 1000 years shows that old English which was spoken between 449-1066 is unintelligible and unrecognisable to a speaker of modern English of the 21st century. Over time also, Latin slowly became Spanish, Portuguese, Italian, French, and a number of other languages spoken by groups currently without national status. We call such groups of languages, according to Johnston (1919:126), related languages, because they are related to each other by virtue of paths of parent-to-offspring cultural transmission that trace back to a common source language. In this unit, you will learn about the changes that take place in language over time which include phonological, morphological, syntactic, and semantic changes.

2.0 OBJECTIVES

At the end of this unit you should be able to:

- explain Language change;
- describe various processes of change; and
- describe the various results of change like the great vowel shift.

3.0 MAIN CONTENT

3.1 Language Change

When linguists describe the current phonological processes of a particular language, isolate that language's morphemes, or discover that languages syntactic rules, they analyze that language synchronically; that is, they analyze that language at a particular point in time. Languages, however, are not static; they are constantly changing entities. Linguists can study language development through time, providing diachronic analyses.

Historical linguistics is concerned with language change. It is interested in what kinds of changes occur and why, and equally important, what kinds of changes don't occur, and why not Historical Linguists attempt to determine the changes that have occurred in a language's history, and the relationship of languages historically.

To see how English language has changed over time, compare the following versions of the Lord's Prayer from the three major periods in the history of English. A contemporary version is also included. It should be noted that the symbol p, called thorn, is an old English symbol for the voiceless interdental fricative [θ], as in three, called edh (or eth), is the symbol for the voiced interdental fricative [ð], as in then. Let us now look at more practical example of language:

Old English text

Faeder ure pu pe eart on heofonum, si pin nama gehalgod. To becume pin rice Gewurpe pin willa on eordan swa on heofonum. Urne gedoeghwamlican half syle us to daeg. And forgyf us ure gylfas, swa swa we forgyfa e urum gyltedum. And ne gelaed pu us on costnungen ac alys us of yfele. Soelice.

Middle English text

Qure fadir that art in hevenes halowid be thi name. Thi kingdom come to, be this wille don in erthe es in hevene, yeve to us this day oure breaqd ouir othe substance, & fory eve to us oure dettis, as we forgiven to oure dettouris, & lede us not in to temptacion; but delyver us from yuel, amen.

Early Modern English Text

Our father which art in heaven, hallowed be thy name. They kingdom come. They will be done, in earth, as it is in heaven. Give us this day our dayly bread. And forgive vs our debts, as we forgive our debters. And leade vs not into temptation, but deliver vs from evill: For thine is the kingdome, and the power, and the glory, forever, Amen.

Contemporary English Text

Our Father, who is in heaven, may your name be kept holy. May your kingdom come into being. May your will be followed on earth, just as it is in heaven. Give us this day our food for the day. And forgive us our offences, just as we forgive those who have offended us. And do not bring us to the test. But free us from evil. For the kingdom, the power, and the glory are yours forever. Amen.

3.1.1 Phonological Change

One of the causes for language change is geographical dispersion. As groups of people spread out through Europe, for instance, they lost communication with each other, so that the language of each group went its own way, underwent its own changes, and thus came to differ from the others. Another cause for language change is language contact, with the effect that languages become more alike. English for example, has borrowed many Spanish words from contact with Mexican and Cuban immigrants. Language contact does not, of course, explain why Proto- Indo-European subdivided as it did, but it does help to explain a number of shared characteristics – especially lexical items, among the world's languages. Language contact, like any other explanation for language change, does not provide a complete explanation. A major phonological change in English that resulted in a change in how vowel phonemes were represented took place in 1400-1600. Commonly referred to as the Great Vowel Shift, the high long vowels of middle English [i:] and [u:] became diphthongs [aj] and [aw] in Modern English; and the long
vowels [e:] [o:] [ɛ:][ɔ :] [a:] increased in tongue height to [i:] [u:] [e:]
[o:] and [e:] respectively. Examples are:

Middle English	**Modern English**	
[mi:s]	[majs]	mice
[ge:s]	[gi:s]	geese
[brɛ:ken]	[bre:k]	break
[brɔ :ken]	[bro:k]	broke
[na:mə]	[ne:m]	name

Prescriptive grammarians who resisted change proposed rules based on classical Latin from the first century B.C., viewing it as the perfect, model language, since it did not change. Consider the word comprise. Traditionally, the "whole" comprises its "parts" as in:

A chess set comprises-thirty-two pieces
Increasingly, however, people say:
Thirty-two pieces comprise a chess set in which the "parts" now comprise the "whole". Strict prescriptive grammarians regard this second utterance as ungrammatical. Despite these social views toward change, linguists still regard language change as neither good nor bad, but simply that as a fact of life, it is a fact of language.

The Phonological change, as an aspect of language change, can affect the phonology of a language because of contact. For example, the Uyo dialect of Ibibio has affected the Ibiono dialect of Ibibio because of close contact. One major cause of phonological change or sound change is the motivation to avoid the difficulty in the pronunciation of a particular form and to reject that form for the alternative that lacks that difficulty.

3.1.2 Lexical Change

Lexical change, which is the replacement or substitution of one lexical item or word for another, sometimes happens as a result of borrowing. Hence, borrowing is a very important source of lexical change. Sometimes the borrowed item can come to replace the original one/item. It is this kind of borrowing that gives rise to synonyms – E.g. start, begin, commence. One of the reasons for borrowing is lack of items in the vocabulary. Contact between two cultures can have the senior culture introducing another object and name. And when the pronunciation is not comfortable, the borrowing language assimilates it. Lexical change is also evidenced when some items in the lexicon disappear because the objects or concepts they stood for are no longer there. Sometimes too, new items come into a language and cannot be accounted for because they were not originally in the lexicon. For example, lexical items like 'akoob' 'cup' and 'ikibe' 'spoon' have are no longer used because speakers have replaced them with the English equivalents, 'cup' and 'spoon'. In English, lexical items like 'service' which used to be used a nouns is now being used also as verbs as in 'Can I service your car?' Borrowing from other languages is a source of new words. The study of the history of words that have been borrowed over a very long period of time is called etymology. English has borrowed extensively from various languages including French and Latin. Examples of French words borrowed into English include 'estate, jury, saint, royal, attorney'; Greek words borrowed into English include 'drama, comedy, scene, botany, physics'. When borrowing occurs, the pronunciation of the borrowed word changes to fit the word structure of the language. The following examples show the alteration that has taken place on the borrowed word:

Ibibio	Abodisi	Police
Efik	Bodisi	Police
Ejagham	Burusi	Police
Hausa	Assibiti	Hospital

SELF-ASSESSMENT EXERCISE

1. The Great Vowel Shift is an example of morphological change
   True/false
2. Borrowed lexical items undergo phonological changes
   True/False

3.1.3 Morphological Change

Morphological change may be motivated by the articulation of the morphemes of a language. Sometimes a whole syllable or morpheme is lost. In Indo-European languages, extensive changes have occurred such that Latin case endings are no longer found in Latin's derivative languages, the Romance languages. In English, only the genitive case ending, the apostrophe 's' as in John's book remains of the noun case. In French, a circumflex accent on a vowel indicates an 's' that is no longer there. E.g. 'estre' has become eþtre; and 'le hopital' has become "l'hopital" with an apostrophe (') indicating that 'e' that is no longer there.

3.2 Syntactic Change

In English, the loss of morphological case endings occurred at the same time as a change in the word order. Word order was more flexible in Old English because the case endings accounted for the meaning in the sentence. While Old English was both SVO (subject-verb-object) and SOV (subject-object-verb) language, modern English is now a SOV (subject-object-verb) language.

The rules for negative construction also experienced changes. In Old English, the negative marker was 'ne', while in Modern English it is by adding 'not' or 'do not'. Here is an example:

Old English: þæt he na siþþan geboren ne wurde
Gloss: that he never after born not would- be
Modern English: That he should never be born after that…
(Source: Fromkin, 2003)

Note that Old English uses two negatives which are now ungrammatical in modern English.

Linguistic change is not restricted to any particular level of language. Thus, in the same way that sounds, words, and meanings of a language are subject to change, so also are the patterns into which meaningful elements such as words and morphemes fit in order to form sentences. In syntactic change, therefore, the primary data that historical linguists deal with are changes in the variety of elements that go into the structuring of a sentence. These include changes in word order, changes in the use of morphemes that indicate relations among words in a sentence.

For instance, agreement markings on a verb caused by the occurrence of a particular noun or an adjective caused by the noun it modifies and changes in the type of elements that one word selects as being able to occur with it. The adjective "worthy" requires the preposition "of", as in "worthy of consideration". The verb "believe" can occur with a that- clause following it. All of these aspects of sentence structure are subject to change through time.

For example, in earlier stages of English, it was quite usual for a possessive pronoun to follow the noun it modified in the opposite order from what is the rule today. Thus, in earlier stages of English, in an imperative (command) sentence, the pronoun "you", if expressed at all, could appear either before or after the verb, while today, such a pronoun regularly precedes the verb, so that "You go!" is acceptable, while "Go you!" is not. In modern English also, a noun phrase such as "Our father" has the same form regardless of whether it is a subject or an object, as in:

Subject: Our father drinks a lot of coffee
Object: We love our father

The same syntactic change is also observed in Ibibio, as in:

Subject: Ete nnyin ama ibaan
Object: Ibaan ema ete nnyin
Subject: Ete nnyin ayaiya
Object: Nnyin imima ete nnyin

The change observed in Ibibio is very productive or recurring.

The examples given here have been drawn from the history of English and Ibibio, but they can be taken as illustrative of change in the syntactic component of any language. Moreover, they are representative of the nature of syntactic change in general and show ways in which syntactic change differs from sound change.

3.3 Semantic Change

We have seen that a language may gain or lose lexical items.

Additionally, the meaning or semantic representation of words may change, becoming broader, narrower, or shifted. This semantic change is sometimes seen in connotative terms brought about by passage of the language through times.

The semantic system of a language, like all other aspects of its grammar, is subject to change over time. As a result, the meanings of words do not always remain constant from one period of the language to the next. If we think of the meaning of a word as being determined by the set of contexts in which the word can be used, we can characterize the semantic change as a shift in the set of appropriate contexts for that word. Alternatively, we could view semantic change as a change in the set of referents for a word. That is, as a change in the set of objects the word refers to. Since context and reference are simply two aspects of what we call meaning, these two characterizations of semantic change are more or less equivalent.

The motivating factors behind semantic change is that sometimes such changes result from language contact, or accompany technological advancements or innovations, or migrations to new geographic regions. In each of these cases, the introduction of a new object or concept into the culture may initiate a change in the meaning of a word for a related object or concept, though this does not always occur. Semantic change can also result from changes in the relative status of the group referred to by the word. That is, the word will take on new aspects of the meaning to reflect the difference in social status. Sometimes, changes result from change in the status of the word itself, as is the case with taboo words.

In the case of Ibibio language case, for instance, examples of semantic change are observed in the following:

Old forms	**Contemporary forms**	**Gloss**
kpọ̀ọ̀k	kóód	call
ákóób	kọ́p	cup

3.3.1 Amelioration

This describes a word which used to carry a pejorative connotation but which now carries a complimentary connotation. For instance, formerly, the word ‘fanatic was uncomplimentary because it meant being zealous, but today when football enthusiasts are called football fans/fanatics, nobody takes offence. There is therefore amelioration in the meaning of the word ‘fanatic’. ‘Farmhand’ formerly meant slave labour. Farmhand today gives no negative semantic connotation and people do not take offence if they are addressed so because people know that they are not slaves but people working to get some form of remuneration. Some people refer to this as meaning shifts, which is a kind of semantic change that a lexical item may undergo. The word ‘bead’ originally meant ‘prayer’. During the middle Ages the custom arose of repeating prayers (that is, beads) over and over and counting them by means of little wooden balls on a rosary. The meaning of bead shifted from ‘prayer’ to the visible sign of a prayer. The word ‘knight’ once meant “youth” but was elevated in meaning in time for the age of chivalry. Lewd was merely ‘ignorant’ and immoral meant “not customary”. Silly used to mean “happy” in old English.

By the Middle English period it had come to mean "naïve" and only in modern English does it mean "foolish". The overworked modern English word 'nice' meant 'ignorant' a thousand years ago. When Juliet tells Romeo "I am too fond", she is not claiming she likes Romeo too much. She means, "I am too foolish".

3.3.2 Deterioration

This is a kind of semantic change where a word, which used to have positive semantic denotation, now comes to acquire negative semantic connotation. A word like 'lust' formally meant a wholesome desire or liking for something, but today; it has deteriorated and means an unwholesome desire especially for sex. In the past, the word "cunning" had a positive/neutral meaning, but now it has a negative semantic force, meaning 'crafty'. In the past, the word 'notorious' used to have a positive meaning – well known and popular, but today, it means well- known for evil deeds.

3.3.3 Widening

When the meaning of a word becomes widened or broader, that word means everything it used to mean, and then some more. The word 'holiday' originally meant 'holy day', a day of religious significance. Today, the word signifies any day on which we do not have to work.

The word picture used to mean "painted representation," but today you can take a picture with a camera. A 'companion' used to mean someone with whom you shared bread, but today it is a person who accompanies you. The word 'junk' used to mean a sailor's slang for 'old rope' but today it means rubbish, old useless food/things, or slang for dangerous drug like heroin. Widening of meaning as a kind of semantic change applies when a word that used to have a smaller meaning becomes used to mean a bigger idea. For example, the word "horn" originally meant some protrusion of the head of an animal, but now since the shape of the horn is used to produce music, or sound, etc. it has a better connotation and a larger one too.

3.3.4 Narrowing

This is a kind of semantic change where a word with a wide application now has a restricted application. In the King James version of the Bible, God says of the herbs and trees, "to you they shall be for meat" (Gen. 1:29). To a speaker of seventeenth-century English, "meat" meant 'food', and flesh meant 'meat'. Since that time, semantic change has narrowed the meaning of meat to what it is in modern English. The word 'deer' once meant "beast" or "animal" as its German related word Tier still does. The meaning of deer has been narrowed to a particular kind of animal.

3.4 Reasons for Language Change

One of the major topics of interest to historical linguists is why languages change. Unfortunately, this topic is not very easy to discuss coherently because there are so many different and seemingly independent reasons. Speaking very broadly, however, we may recognize three general categories of causation:

a) **Social reasons:** - change through imitation of forms that are considered prestigious.

b) **Psychological reasons –** Misanalysis of unfamiliar morphemes in terms of familiar ones, replacement of forms that have become taboo.

b) **Physiological reason –** For instance, the assimilation of one sound to another for ease of articulation, the elimination of consonant clusters that are difficult to pronounce. It should be noted that each large category may cover a great number of different reasons for change, and that each large category is not entirely independent of the others.

d) The way children acquire language is one plausible cause of change. Since no one teaches children the rules of a language, they construct their own rules and accumulate various differences from existing forms over several generations (Fromkin, 2003).

4.0 CONCLUSION

All languages, including Nigerian languages change over time. But how they change, what drives these changes, and what kinds of changes we can expect are not very obvious. By comparing between languages and within a language, the history of a group of languages can be discovered. Historical linguistics considers the ways languages change through time and some of the factors that influence these changes. In this work, we have looked at what language change means, and the different kinds of language change, and their causes.

5.0 SUMMARY

In this unit, we examined processes of language change. We have seen how change affects language at various levels. At the phonological level, a sound shift in the vowels of English took place between 1400 and 1600 called the great vowel shift. At the morphological level,

6.0 TUTOR-MARKED ASSIGNMENT

The following problems are designed to get you to think about some of the reasons for language change, as well as some of the ways language can change. This work, in order to help you provide answers to the following questions, has provided a reasonable introduction to possible sources of language change.

Read each problem carefully and then answer the questions that follow the problem.

1. English has borrowed the word memorandum from Latin. The plural is memoranda. Some English speakers have replaced memoranda with memorandums. Suggest a reason for this change.

2. English speaking tourists in Finland are often introduced to an after-dinner drink called jalovi-ina [yalovi:na]. This drink is not yellow and it is not wine, but most of the tourists call it "yellow- wine", why?

3. Middle English borrowed the word 'naperon' from old French. The modern descendant of this word is apron. What reason can you give for the disappearance of the initial 'n'?

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UNIT 3 DOCUMENTARY LINGUISTICS

CONTENTS

1.0 INTRODUCTION

This unit aims to introduce you to documentary linguistics, a relatively recent but very exciting subfield of linguistics. You will learn the meaning of documentary linguistics and its relationship with and difference from descriptive linguistics. The rationale for considering documentary linguistics as a separate field of study in its own rights as well as the concepts and terminology that are used in any discussion of documentary linguistics or language documentation will also be examined.

2.0 OBJECTIVES

At the end of the unit, you are expected to have a thorough understanding of the meaning of documentary linguistics and the concepts surrounding its discussion. You should also be able to distinguish between language documentation and description and to know that documentation actually precedes any form of language description. You will also gain an awareness of the issue of language endangerment and its implications.

3.0 MAIN CONTENT

3.1 Definition of Documentary Linguistics

Documentary Linguistics is a branch of linguistics that is primarily concerned with the making and keeping of records of the world's languages and their patterns of use (Woodbury, 2003). In other words, it is a branch of linguistics that is concerned with the proper documentation of all aspects of a language. It is a recent development in Linguistic studies and emerged within the last fifteen to twenty years as a distinct branch of linguistics, following an increasing focus on the threats to global linguistic diversity occasioned by the endangerment of an unprecedented number of languages in the world (Woodbury 2003). The term is often used interchangeably with **Language Documentation** (**LD**), which Himmelman (2006) defines as "a field of linguistic inquiry in its own right which is primarily concerned with the compilation and preservation of linguistic primary data and interfaces between primary data and various types of analyses based on these data" (Gippert, et al. 2006:1). The concept of language documentation as a field of linguistic research and activity in its own right is based on the assumption that the linguistic practices and traditions in a given speech community are worthy of documentation in the same way as material aspects of its culture (arts and crafts) are generally deemed worthy of documentation (Himmelmann, 1995). The aim of documenting a language, therefore, is to provide a comprehensive record of the linguistic practices characteristic of a given speech community. Woodbury (2003) observes that practitioners of documentary linguistics or (LD) have always operated in an atmosphere of urgency and impending language loss, making lasting records and often taking part in community efforts at language preservation, teaching and revival.

Sherzer (1990) asserts that Documentary Linguistics is discourse centered in so far as its primary object oftentimes is a direct representation of naturally occurring discourse (Woodbury 2003). The primary data, which constitute the core of a LD include audio-visual recordings of a communicative even as well as the notes taken in an elicitation session, or a genealogy written by a literate member of the speech community. These primary data are compiled in a structured corpus and have to be made accessible by various types of annotation and commentary, usually referred to as the "apparatus".

The use of certain concepts and terminology become inevitable in the discussion of language documentation or documentary linguistics. For instance, Himmelmann (2006), in Gippert, et al (2006:1–2) sees language documentation "as a lasting, multipurpose record of a language". This definition immediately raises the question of what is meant by *lasting*, *multipurpose* and *record of a language*. The qualifier *lasting* adds a long-term perspective to documentation which goes beyond current issues and concerns. The goal is not a short-term record for a specific purpose or interest group, but a record for generations yet unborn and user groups who may want to explore questions not yet raised at the time when the language documentation is compiled. By *multipurpose* is meant that the net for language documentation should be cast as widely

as possible so that as much information as is possible can be compiled from as many areas of the linguistic community as possible or practicable. In other words, a language documentation exercise should strive to include all aspects of the set of interrelated phenomena called language. Ideally therefore, good language documentation would cover all registers, and varieties of the language – (social, regional and temporal). It would also contain evidence for language as a social phenomenon, and as a cognitive faculty, as well as include specimens of spoken and written language.

3.1.1 Documentary vs Descriptive Linguistics

Himelmann (1995) observes that much of what was labeled "descriptive linguistics" in the past actually consisted of two activities, namely, the collection, transcription and translation of primary data (documentation), and a low level descriptive analysis of these data (description). Himmelmann argues that although documentation and description are two closely related activities which sometimes overlap, yet, they are separate activities as evidenced by the different methods employed in each activity and their results. Documentary linguistics necessarily precedes descriptive linguistics in so far as the primary data must be collected first before ever it is analyzed. Language documentation aims at the record of *the linguistic practices and traditions of a speech community.* Such a record may include a description of the language system to the extent that this notion is found useful for collecting and presenting characteristic documents of linguistic behavior and knowledge. The record of the linguistic practices and traditions of a speech community, however, is much more comprehensive than the record of a language system since it includes many aspects commonly left unaddressed in language descriptions.

The concept of descriptive analysis is, in principle, applicable to any set of data, provided that these data represent the actual usage at a given time in a given speech community. In the case of well-known and well- documented languages, any kind of data will do, including examples overheard or created by the researcher. But in the case of little known or unrecorded languages, the actual (descriptive) analysis has to be preceded by a more effortful data gathering procedure. Given a set of data, however, no principled distinction exists between the descriptive analysis of a well-known language and that of a previously unrecorded language. The important point to be noted here is that the descriptive approach is neither restricted to little-known languages nor are such languages its central concern. Its central concern is the synchronic, non- prescriptive statement of the system of a given language. In fact, the majority of descriptive works are on well-documented languages such as European languages, Japanese, or Chinese. The fact that descriptive linguistics is currently closely associated with work on little-known languages is primarily because descriptive techniques have been found highly useful and effective when working on little-known languages. Consequently, most work done on these languages is done within the descriptive framework. This, however, does not mean that the descriptive approach is the only approach possible when working on little-known languages (Himelmann, 1995).

The table below provides a summary of some of the differences between collecting primary data and providing a descriptive analysis of these data:

	COLLECTION (DOCUMENTATION)	ANALYSIS (DESCRIPTION)
RESULT	corpus of utterances; notes on observations and comments by speaker and compiler on a particular form or construction	Descriptive statements, illustrated by one or two examples
PROCEDUR ES	participant observation, elicitation, recording; transcription and translation of primary data	phonetic, phonological, morphosyntactic, and semantic analyses (spectrograms, distributional tests, etc.)
METHODO-LOGICAL ISSUES	sampling, reliability, naturalness	definition of terms and levels, justification (adequacy) of analysis

(Himmelmann, 1995: 5).

SELF ASSESSMENT EXERCISE 1

1. What is documentary linguistics/language documentation?
2. How is language description different from language documentation?

3.1.2 Goals/Motives for Language Documentation

From the foregoing it should become obvious that language documentation has certain goals/motives. These goals/motives would now be discussed below.

3.2 Language Endangerment

Language Endangerment (**LE**) is a major reason for Language Documentation. By Language Endangerment is meant that the **indigenous** or **heritage** language of a group of people is being threatened in one way or the other by (a) dominant or more powerful "predator" language(s) spoken in or near to the community whose language is endangered.

According to Woodbury (2006) an endangered language is one that is likely to become extinct in the near future. Many languages are falling out of use and being replaced by others that are more widely used in the region or nation, such as English in the U.S. or Spanish in Mexico. In Nigeria, many languages spoken in the northern part of the country are falling out of use and are being replaced by Hausa, the dominant language (*lingua franca*) of the region. Unless current trends are reversed, these endangered languages will become extinct within the next century. Many other languages are no longer being learned by new generations of children or by new adult speakers; these languages will become extinct when their last speaker dies. In fact, dozens of languages today have only one native speaker still living, and that person's death will mean the extinction of the language: It will no longer be spoken, or known, by anyone.

The loss of a heritage language is often seen and described as the loss of identity and as a cultural, literal, intellectual, and spiritual severance from ancestors; and as an example or symbol of the domination of the more powerful over the less powerful (Woodbury, 2003). Because so many languages are in danger of disappearing, linguists are trying to learn as much about them as possible, so that even if the language disappears, all knowledge of the language would not disappear at the same time. Linguists therefore started engaging in multipurpose documentations (by making audio and videotapes, creating written records of language use in both formal and informal settings – with translations, in addition to analyzing the vocabulary and rules of language and the writing of dictionaries and grammar) because of the realization that a substantial number of languages still spoken today are threatened by extinction and would not be spoken anymore in the very near future. Creating lasting multipurpose documentation is thus seen as one major linguistic response to the challenge of the dramatically increased level of language endangerment observable in our time.

3.3 Linguistic Research Economy

Creating language documentations, which could be properly archived and made easily accessible to interested researchers, is in the interest of research economy. For example, if a researcher worked on a minority language in a remote part of the Niger-Delta region of Nigeria today, and say a hundred years from now another researcher wants to work on the same language, it would obviously be most useful and economical if this new research project (or researcher) could build on the complete set of primary data already available and not have to start afresh or rely solely on just a grammar sketch and a few incomplete texts published by the earlier researcher.

3.4 Accountability

Language Documentation strengthens the empirical foundations of other branches of Linguistics and related disciplines, which heavily draw on data of little-known speech communities (e.g. linguistic typology, cognitive anthropology, etc.) in that it significantly improves accountability (verification). Furthermore, it is in the interest of accountability and research economy if every language documentation project feeds all its primary data into an open archive and not limit itself to publishing only the analytical results or illustrative samples of the primary data.

3.5 Linguistic Diversity

Another goal of language documentation is to maintain global linguistic diversity. Just as ecological biodiversity is considered advantageous to the entire world due to its great potentials for a wealth of traditional and scientific knowledge and wisdom, the loss of linguistic diversity is equally seen as devastating for the entire world, for every last word means another lost world. From a scientific point of view, much is lost when a language disappears. A people's history is passed down through its language, so when the language disappears, it may take with it important information about the early history of the community. The loss of human languages also severely limits what linguists can learn about human cognition. By studying what all of the world's languages have in common, we can find out what is and is not possible in a human language. This in turn tells us important things about the human mind and how it is that children are able to learn a complex system like language so quickly and easily. By documenting languages, especially those on the brink of extinction, linguists try to preserve the remaining linguistics diversity in the world. This is especially so if their attempts at language revival and/or revivification are successful. The fewer languages there are to study, the less we will be able to learn about the human mind.

SELF ASSESSMENT EXERCISE 2

1. What do you understand by language endangerment?
2. List three goals/motives of language documentation.

4.0 CONCLUSION

Documentary Linguistics is concerned with proper language documentation. It is the field of linguistics which studies the linguistics practices and traditions of speech communities. Such a record may include a description of the language system to the extent that this notion is found useful for collecting and preserving characteristic documents of linguistic behavior and knowledge. The record of the linguistic practices and traditions of a speech community, however, is much more comprehensive than the record of a language system. Documentary linguistics is quite different and separate from descriptive linguistics, even though they are closely related. Documentation involves the actual collection of whatever primary data the researcher considers necessary or useful from the field, and precedes the descriptive analysis of these data.

5.0 SUMMARY

This unit has looked at the field of documentary linguistics and has explained most of the terminology and notions that are common currency in that branch of study. Effort has been made to explain the difference between language documentation and description and terms such as language endangerment have been expatiated. The major goals of language documentation have also been examined.

6.0 TUTOR-MARKED ASSIGNMENT

(1) Explicate your understanding of the term 'Documentary Linguistics'.
(2) Distinguish between 'Documentary linguistics' and 'Descriptive linguistics'.
(3) Language endangerment is an important issue in Documentary linguistics. Discuss.
(4) What in your opinion are the advantages of having linguistic diversity in the world?

7.0 REFERENCES/FURTHER READING

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