NATIONAL OPEN UNIVERSITY OF NIGERIA

COURSE CODE : ENG 341

COURSE TITLE: THE PHONOLOGY OF ENGLISH

Course Guide

Course Code:	ENG 341 (ENG 302)
Course Title:	THE PHONOLOGY OF ENGLISH
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Introduction

ENG 302: The phonology of English is a one-semester 3-credit unit course. The course is available toward the award of first degree in English. The course materials can also be useful for students pursuing other degrees in linguistics. Postgraduate students specialising in English and linguistics may also find the course useful.

This course is made up of 20 units. It begins with a general introduction to phonetics and phonology. The distinction between the two is often the problem of some students. This is why a whole module is dedicated to the explication, with ample illustrations, two different but related concepts in the English language.

The Course Guide tells you briefly what the course is about, what you are expected to know in each unit, what course materials you will be use and how you can work your way through the materials. It also emphasises the need for student's Self-Assessment Exercises (SAEs) and Tutor – Marked Assignments (TMAs). Detailed information on SAEs and TMAs is found in a separate file, which will be sent to you later. There are periodic tutorial classes that are linked to this course.

What You Will Learn in this Course

The general aim of this course is to serve as a follow-up to the courses you have previously learnt such as: test of orals, spoken English and introduction to general phonetics and phonology of English. It is also meant to improve both your perceptive and receptive skills in the sound system of the English language.

Course Aims

- The aim of this course is to assist you to learn the theories of the sound system of the English language

- It is also meant to help you acquire the skills necessary to use the sounds of English as competent speakers through practical exposures and practices.

Course Objectives

To achieve the aims set out above, there are set overall objectives. Besides, each unit has its specific objectives. The unit objectives will be included at the beginning of each unit. You should read them before you start working through the unit. It is advisable that you refer to them during your study of the unit to check on your progress. At the end of every unit, you should also revise the unit objectives. In this way you can be sure that you have done all you are expected to do in the unit.

Listed below are the broader objectives of this course. It is expected that by meeting these objectives, the overall aims of

the course must have been achieved. At the end of this course, you should be able to:

- Acquire some skills in practical phonetics as a background and hardware for explaining most parts of the English phonology:
- Identify, describe and use the English vowel sounds:
- Identify, describe and use the English consonant sounds:
- Competently identify, describe and use the English autosegmental features.
- Explain and apply some rules that guide the correct usage of the sounds of English in isolation and in groups:
- Use and understand spoken Standard English in any environment where it is the medium of communication.

Working through this Course

To complete this course, you are required to read the study units, read the recommended books and the other materials provided by the National Open University of Nigeria (NOUN). As explained in an earlier paragraph, each unit contains Self-Assessment Exercises, and at points during the course you are required to submit assignments for assessment purposes. At the end of this course there is a final examination. Below, you will find listed all the components of the course and what you have to do.

Course Materials

Major components of the course are:

1. Course Guide
2. Study Units
3. Textbooks
4. Assignments file
5. Presentation schedule

You must obtain these materials. You may contact your tutor if you have problems in obtaining the text materials.

Study Units

In this course, there are twenty study units of six modules. They are listed below.

Module 1 ENGLISH PHONETICS AND PHONOLOGY

Unit 1 Phonetics
Unit 2 Phonology

Module 2 ENGLISH VOWELS

Unit 1 English Monophthongs I
Unit 2 English Monophthongs II
Unit 3 English Diphthongs and Triphthongs

Module 3 ENGLISH CONSONANTS

Unit 1 The Plosives
Unit 2 The Affricates and Fricatives:
Unit 3 The Nasals, Lateral, Continuants

Module 4 ENGLISH PHONEMES AND ALLOPHONES

Unit 1 Phonemic Description by Contrast
Unit 2 English Sound Change I
Unit 3 English Sound Change II

Module 5 DISTINCTIVE FEATURES

Unit 1 Generative Phonology
Unit 2 Major Class features/ Cavity features
Unit 3 Manner of Articulation features
Unit 4 Distinctive features Matrix

Module 6 ENGLISH SYLLABLE, STRESS AND INTONATION

Unit 1 Syllable Structure and Strength
Unit 2 The Phonotactics of English
Unit 3 Stress in English
Unit 4 Intonation in English I
Unit 5 Intonation in English II

Set Textbooks

These textbooks are recommended for your study in this course. You will also find some useful ones under the reference list in the course book.

Ashby, Michael & Maidment, John. (2005). *Introducing phonetic science*. Cambridge: Cambridge University Press.

Gimson, A.C. (1980). *An introduction to the pronunciation of English*. London: ELBS & Edward Arnold.

Jones, Daniel (2006). (Eds.) Peter Roach, James Hartman, & Jane Setter. *Cambridge English pronouncing dictionary 17th Edition*. Cambridge: Cambridge University Press.

Jolayemi, 'Demola. (2006). *The stress pattern of Nigerian English: An empirical phonology approach*. Göttingen, Germany: Cuvillier Verlag.

Roach, Peter. (2000). *English phonetics and phonology* (2nd Ed.). Cambridge: Cambridge University Press.

O'Connor, J.D. (1973). *Phonetics*. Harmondsworth: Penguin.

Other Learning Aids

In addition to the set books above, you should try to secure some recorded cassettes or CDs on the Received Pronunciation of English. Some of them come with some of the set textbooks. You may also request your class facilitator, who is better informed than you on this highly technical course, to procure some of the oral aids. If you are able to procure a CD of, for instance *Daniel Jones pronouncing dictionary*, you may be able to install it in your desktop, or laptop if you have one, attached to a pair of loud speakers or ear piece. This will, particularly, be helpful for the mastery of the aspects of the English phonology, especially, as outlined in this course. It will afford you the opportunities to:

- listen to the RP rendition of a large number of English words;
- listen to the GA rendition of a large number of English words;
- record rendition of any English word or group and listen to it;
- compare your recording with either of RP or GA; and
- see and practise the correct transcription of a large number of English words in RP or GA.

You will also need a mirror of the size of your palm. This is mandatory for tutorial attendance.

Set Textbooks Postscript

- The above books are classical reading materials, not just for this course but also for other courses in the phonetics and phonology of English and other English related courses that you may wish to pursue in the future; the university should encourage all the students to procure them.
- Jolayemi (2006) was published in December, 2006 by a German publisher. A copy is presently sold at €29.00, but the price may reduce if the university would assist the students to purchase copies *en masse* by contacting the publishers directly through: www.cuvillier.de
- Bulky purchase of Daniel Jones' *Cambridge English pronouncing dictionary* will also make copies less costly. And more importantly, if they are purchased from a good source, pronouncing software in a CD that come with the book will be very, very useful to you. The CD you often get in some of the pirated copies of the book you buy just anywhere are mere imitations. They cannot be installed, thereby, robbing you of a huge body of knowledge on the phonology of English that you can self-assess from the pronouncing dictionary.

Assignment file

In this file you will find all the details of the work you must submit to your tutor for marking. The marks you obtain from these assignments will count toward the final mark you obtain for this course. Further information on assignment will be found in the assignment file itself and later in this Course Guide in the section on assessment.

Presentation Schedule

The "presentation schedule" included in your course materials gives you the important dates for the completion of your tutor-marked assignments and attending tutorials. Remember, you are required to submit all your assignments as and when due.

Assessment

There are two aspects to the assessment of this course. First are the tutor-marked assignments; second, there is a written examination. While working on your assignments, you are expected to apply information and knowledge acquired during this course. The assignments must be submitted to your tutor for formal assessment in accordance with the deadlines stated in the assignment file. The work you submit to your tutor for assessment will count for 30% of your total course mark. At the end of the course, you will need to sit for a final three-hour examination. This will also count for 70% of your total course mark.

Tutor Marked Assignments (TMAs)

There are twenty tutor assignments in this course. You need to submit all the assignments. The best three (that is, the three with the highest grades of twenty assignments) will be counted. The total mark of the best three will be 30% of your total course mark.

Assignments for the units in this course are contained in the Assignment File. You should be able to complete your assignments from the information and materials contained in your set textbooks, reading and study units. However, you are advised to use other references to broaden your viewpoint and provide a deeper understanding of the subject.

Final Examination and Grading

The examination will consist of questions you will come across in tutor-marked assignments. You are therefore advised to revise the entire course after studying the last unit before you sit for the examination.

Course Marking Scheme

The table below gives a breakdown of the course mark:

Assessment	Marks
Assignments 1-20	Three assignments, best three marks of the assignments counts for 30% of course marks.
Final examination	The final examination counts for 70% of overall marks.
Total	100% of course marks

Table 1: Course Marking Scheme
Course Overview

This table brings together the units, the number of works you should take to complete.

Unit	Title of Work	Week's Activity	Assessment (end of unit)
Module 1			
	Course Guide	1	
1	What Phonetics is	2	Assignment 1
2	What phonology is	3	Assignment 2
Module 2			
1	English Monophthongs I	4	Assignment 3
2	English Monophthongs II	5	Assignment 4
3	English Diphthongs and Triphthongs	6	Assignment 5
Module 3			
1	The Plosives	7	Assignment 6
2	The Affricates and Fricatives	8	Assignment 7
3	The Nasals, Lateral, Continuants	9	Assignment 8
Module 4			
1	Phonemic Description by Contrast	10	Assignment 9
2	English Sound Change I	11	Assignment 10
3	English Sound Change II	12	Assignment 11
Module 5			
1	Generative Phonology	13	Assignment 12
2	Major Class Features/Cavity Features	14	Assignment 13
3	Manner of Articulation Features	15	Assignment 14
4	Distinctive Features Matrix	16	Assignment 15
Module 6			
1	Syllable Structure and Strength	17	Assignment 16
2	The Phonotactics of English	18	Assignment

			17
3	Stress in English	19	Assignment 18
4	Intonation in English I	20	Assignment 19
5	Intonation in English II	21	Assignment 20

Table 2: Course Overview

How to Get the Best from this Course

In distance learning, the study units replace the university Lectures. This is one of the great advantages of the distance learning system. You can read and work through specially designed study materials at your own pace.

Each of the study units follows a common format. The first item is an introduction to the subject matter of the unit and how a particular unit is integrated with the other units and the course as a whole. Following this is a set of learning objectives. These objectives enable you to know what you should be able to do by the time you have completed the unit. The objectives should guide your study. After studying the units, cross check whether you have achieved the objectives. If you adhere strictly to this art of checking whether the objective is achieved or not, you will definitely improve your chances of passing the course.

The main body of the unit guides you through the required reading from other sources. This will usually be either from your set books or from a "Reading" section. Whenever you need help, don't hesitate to call and ask your tutor to provide it.

1. Read through this Course Guide thoroughly.

2. Plan your study schedule. You should refer to the 'course overview' for more details. Find out the time you are expected to spend on each unit and when and how to turn in your assignments.

3. Stick to your study schedule. Don't allow anything to get you distracted from your study schedule.

4. Turn to Unit 1 and read the introduction and objectives for the unit.

5. Gather the study material you need. A unit is given in the 'Overview' at the beginning of each unit. The study unit you are working on and one of your set books should be on your desk at the same time.

6. Work through the unit. The content of the unit has been arranged in a sequential order. Instructions would be given on where to read from your set books or other articles. Use the unit to guide your reading.

7. Review the objectives for each study unit to confirm you have achieved them.

8. Don't proceed to the next unit, until you are sure you have achieved the objectives of the unit you are working on.

9. Don't wait until your assignment is returned before working on the next unit. Keep to your schedule.

10. When you complete the last unit, you can be preparing for examinations. Be sure that you have achieved the unit objectives (listed at the beginning of each unit) and the course objectives (listed in this Course Guide).

Tutors and Tutorials

There are 8 hours of tutorials provided in support of this course. The dates, times and location of these tutorials, together with the name and phone number of your tutor will be communicated to you. This will be done as you are allocated to a tutorial group.

Your tutor will mark and comment on your assignments, keep a close watch on your progress and on any difficulties you might encounter and provide assistance to you during the course. You must mail your tutor-marked assignments to your tutor well before the due date (at least two working days are required). They will be marked by your tutor and returned to you as soon as possible. Do not hesitate to contact our tutor by telephone, e-mail or discussion board if you need help. The following might be the circumstances in which you will find help necessary. Contact your tutor if:

- You do not understand any part of the study units or the assigned readings.
- You have difficulty with the self-tests or exercises, and
- You have a question or problem with an assignment, with your tutor's comment on an assignment or with the grading of an assignment.

You should try your best to attend the tutorials. This is the only chance to interact with your tutor by asking questions which are answered instantly. You can raise any problem encountered in the course of your study. To maximise the benefits of the course tutorials, it is advisable that you prepare a question list before attending them. When you participate in the discussions, your intellectual knowledge will be deeply enriched.

Summary

The attempt in this Course Guide is to launch you into how to set about using this course book. It is also to assist you to have, as much information as possible, on how to make the maximum use of the book, all of which is geared to satisfactorily acquiring the set objectives of the phonology of English. This has been achieved by methodically explaining to you:

- what you will learn in this course;
- the general aims and specific objectives of the course;
- the course materials and how to working through them;
- an overview of the 20 unit course in 6 modules;
- some set textbooks and other learning aids;
- your assignment file and presentation schedule;
- the required assessment, examination and grading methods; and
- how to get the best from this course and you tutors.

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MODULE 1 PHONETICS AND PHONOLOGY

Unit 1 What Phonetics is
Unit 2 What Phonology is

UNIT 1 WHAT PHONETICS IS

CONTENTS

The main concern of this unit is to present to you the theoretical background to issues that are usually discussed under the field of phonetics as a scientific study of speech sound. The unit is discussed under the following headings:

1.0 INTRODUCTION

Phonetics, as a branch of Linguistics, concerns the scientific study of how speech sounds are produced, transmitted and perceived. The primary duty of a phonetician is to carry out rigorous studies of the human sounds made for the purpose of communication. The main aim of this is to be able to identify all the possible human sounds made for the purpose of oral communication. Another purpose of a phonetic study is to be able to describe and explain each of these identified sounds. One last main purpose of a phonetician is to be able to explain how these human sounds are produced (articulatory), transmitted (acoustic) and perceived (auditory). These form the three major (but not always easy to differentiate) types of phonetics, as shall be explained shortly.

2.0 OBJECTIVES

You should, by the end of this unit, be able to:

- define what phonetics is
- identify the main duties of a phonetician
- name a few notable phoneticians across the world
- list phonetician's working tools
- use a few of these tools
- explain the three main branches of phonetics.

3.0 MAIN CONTENTS

3.1 THEORETICAL BACKGROUND ON PHONETICS

Phoneticians all over the world have been engaged in the scientific investigation into the workings of the human speech sounds. This engagement was dated back to years before Christ. Precisely, Clark and Yallop (1992), confirms that as early as many centuries before Christ was born, the Indians had concerned themselves with the study of Sanskrit and done a lot of work in articulatory phonetics (p. 329), and so were linguists in China, Japan, Greece and Rome. Much of what we now learn in phonetics were efforts contributed by these ancient linguists and passed to us by the nineteen-century linguists. Such nineteen-century linguists were: Baudouin de Courtenay (1845-1929), a Polish; Ferdinand de Saussure (1875-1913), a Swiss;

Henry Sweet (1845-1912) and Daniel Jones (1881-1967), both were English; Franz Boas (1858-1942), German; Edward Sapir (1884-1939) and Leonard Bloomfield (1887-1949, were both Americans. You would have, therefore, realised that many linguists had done so much work in the past, a lot more still goes on.

As I have said earlier, the main concern of a phonetician is the scientific study of *all* possible human sounds that are meant for speech communication. His primary focus is on human speech sounds, not of any particular language. Thus, it is possible for him to investigate the speech sounds of a language he does not quite understand, speak, read or write because his primary focus is on the examination of the human speech sounds, how they are produced, transmitted and perceived. To achieve this, he needs to observe, listen, record and analyse what he hears said. For this, he must be a good observer, listener, recorder and analyst. At the same time, he must have some tools handy to do all this, as reliability on his own senses alone may not give the desired results. In the past, the tools were few and far between, making observation, recording and analysis a tedious thing to do. But with modern technology, you can now observe, record and analyse with great accuracy, any human speech (and indeed non-human) sounds.

At the observatory and recording levels, you will need, apart from your sharp ears (which you *must* train), a good audio recording machine and video recording machine, you will need software, too – audio and video cassettes. You will also need to go with your pen, pencil, and other writing materials. Remember to wrap all this in waterproof containers (in case it rains or you need to cross a river!). In the past, machines such as Oscillomink and Visi-Pitch were often used to analyse corpora data (recorded utterances; singular: corpus datum). Other analysis tools are the X-Ray and the scanners. At the present moment, a number of computer programs have been devised and found to be highly useful for a phonetic analysis. Let me mention some of them: PRAAT, Speech Analyzer, Wavesurfer and LingWAVES. But in case you do not have your corpora as sound files or they are still in the audiocassette, you cannot use any of these computer programs. This means that, you then must find a way to covert and transfer them into the computer by a means of another program called the *Audacity*.

You can read a lot more of this in Jolayemi (2006) especially in Chapters Two, Seven, Eight and Nine.

Phoneticians represent the speech sounds they hear in signs called *phonetic symbols*, which they usually enclose in square brackets [ ]. Remember that what you have transcribed in such square brackets are sounds from the human speech and *not* from any specific language. Remember, too, that such sounds are transcribed using phonetic symbols agreed upon by a consensus among members of *IPA*, an abbreviation for both the name of the association (International Phonetic Association) and the alphabet or symbols used for transcription (International Phonetic Alphabet). Let us now turn our attention to the three main branches of phonetics, as discussed in Units 3:2-4 below.

3.2 ARTICULATORY PHONETICS

In speech making, certain speech organs are brought together at various places and manners. These organs come together to shape or moderate the sound signals produced from the larynx. Major among these organs are the lips, teeth, teeth ridge, tongue, pharynx, and even the nose, etc. All these are usually categorised into the pharyngeal, oral and nasal cavities, which form what is called the *vocal tract*. (Note: *It is my belief that you have learnt the human organs involved in speech making; if you haven't, you must go back to your notes or books to learn or revise them*). Housed by these organs are the upper and lower jaws, which come together in the formation or articulation of the speech sounds. Articulatory phonetics, therefore, is the branch of phonetics that is concerned with the study of how the speech sounds are produced. It is concerned with the study of the vowel and the consonant sounds involved in speech making in any language, concentrating on three main areas, namely: 1) place of articulation, 2) manner of articulation, and 3) quality of production. Let me briefly explain each of these factors of speech sound production below.

3.2.1 Place of Articulation of Speech Sounds

The areas of interest of a phonetician, here, are the identification and description of the organ or organs involved in the production of a specific sound; or put in another way, the particular place of the mouth or vocal tract that is used in the

production of a specific speech sound. First, let me discuss the place of articulation of the vowel sounds, which are mainly the function of the mouth (tongue and lips). A phonetician may want to know what part of the mouth has been involved in the articulation of a particular vowel sound. Is it at the front such as [i], centre such as of [ə] or back such as [ɑ]? For the place of articulation of the consonant sounds, the phonetician may want to find out if a particular sound is produced with the two lips (*bilabial* – Latin word for two lips, *bi* (two), *labial* (lip) such as [p, b, m]; a lip and a set of teeth *(labio-dental)* such as the upper set of teeth and lower lip, [f, v]; or the two sets of teeth *(dental)* such as [ð, θ]. Other places of articulation of consonant sounds are: at the alveolar, velar, uvula, nasal, pharynx and glottis.

3.2.2 The Manner of Speech Production

Unlike the place of articulation, which tells the position of the organs of articulation, the manner of speech production concerns the various ways or *how* these articulators produce speech sounds. For the consonant sounds, it is possible to say that some sounds are produced with total closure of the articulators (*stops* or *plosives*), or friction (*Affricates*/*Fricatives*). Another sound might be produced by the vibration of the tip of the tongue, slightly touching the palate (*Rolled*) or just tapping it (*Tap-Flap*). It is also possible to shape the mouth such that a sound is allowed to pass through a space at both sides of the blade of the tongue and the mouth (*Lateral*), or allow the sound to come out of the vocal tract with little or no obstruction of the articulators (*Approximant* or *Semi Vowel*). As for the manner of producing the vowel sounds, the lips may be rounded, neutral or spread; the mouth may be open, close, partially open or partially close. Also, a vowel sound may be produced while the tongue is high, level or low. *(NOTE: It would be profitable to have a looking mirror of about the size of your palm handy as part of your phonetics tools)*. More details of all this shall be learnt as the course progresses.

3.2.3 The Quality of Speech Production

By the quality of speech production, I mean: (i) the quantity or length of time expended on a sound; (ii) the amount of force or

pressure exerted on a sound; (iii) the presence or absence of laryngeal vibrations while producing the sound; or (iv) in some circumstances, a combination of i-iii. By study or intuition (sub-conscious effort), you will have noticed that you exert a greater force in producing a sound compared with another. Specifically, some terms to describe how sounds are produced are *fortis* or *tense*, when a voiceless consonant is produced with greater force or pressure than its voiced counterpart (e.g. [p] vs [b]. Inversely, a voiced sound like [b] might be produced with a weaker force (*lenis or lax*) than its voiceless counterpart [p]. Also, you spend a *long* time producing a sound, for example /uː/ and a *short* time to produce another for example /ʊ/. You also notice that some sounds are voiced because you have produced them with some vibrations coming from your larynx. Some others are voiceless because they are produced with no laryngeal vibrations. This summary ends my brief discussion of the branch of phonetics described as articulatory phonetics. Your attention will now be focussed on another branch of phonetics called acoustic phonetics, which is the concern of the next section below.

3.3 ACOUSTIC PHONETICS

In the previous section, I tried to briefly explain to you specific speech sounds that come into realisation as a result of the articulatory activities of some speech organs at the vocal cavity or above the glottis, or still at the *supraglottal* region. Thus, articulatory activities can be said to have taken place between the regions above the glottis, through the pharyngeal, oral and nasal cavities and ending at the two lips and the nose. But we have not discussed how the sound waves upon which the articulators have acted to result into speech sounds are made. Here, we are moving into the realm of acoustic phonetics, whose region starts from the larynx below the glottis, or at the *subglottal* region. It moves through the pharyngeal, oral and nasal cavities and beyond the two lips and the nose into the outer environment. Consequently, acoustic phonetics can be described as the scientific study of the properties of the signals that lead to speech and how they are propagated by man (Jolayemi, 2006: p. 6; O'Connor, 1973: p. 71).

Any sound, non-human or human, non-speech or speech, travels through a medium such as the air or water or metal. A sound is

usually propagated or transmitted by *wave*, which is defined as the periodic displacement of pressure from one point to the other. Through these periodic movements, the wave is able to transmit or propagate a sound from one fixed place to the other. But specifically, human speech is transmitted by the sound waves that originate from the lungs into the larynx or what is called the voice box. The larynx is usually referred to as the voice box, mainly, because it houses the *vocal folds* whose precursor is the generation of the vibrations that give phonation or the sound waves that lead to the voiced sounds.

The *Source-Filter Theory* recounts that the speech sound generation starts from the lungs, which pump air into the larynx. The air, so pumped, forces the vocal folds housed by the larynx to open and close. When the sound waves that escape through the folds get to the vocal tract, they are moderated by the various speech organs in the vocal tract by the process of filtration and the vocal tract acting as the acoustic filter. The filtering process converts the sound vibrations from the larynx into the individual speech sounds that we hear. Thus, it can be summarised that in speech production, the sound vibrations from the larynx serve as the input, which is filtered by the vocal tract; the result of the filtration is the output, which we hear as speech in the outer world (Clark & Yallop, 1995: p. 236; Johnson, 2003: p. 79; Jolayemi, 2006: p. 56-57; etc.).

In speech production, when the two folds close in order to vibrate, they generate *periodic* tones that lead to the *sonorant* sounds that form the voiced sounds such as the vowels, the laterals, the nasals and all other voiced consonants. But when the two vocal folds open and are not vibrating, the air from the lungs passes through them *freely* into the vocal tract. The tones generated in this process are referred to as *aperiodic*, and they form the obstruent sounds that generate the voiceless consonants. For a detailed discussion on acoustic phonetics, you may read any book on acoustic phonetics or phonology and phonetics. Some of the classical ones can be found on the reference and further reading list at the end of the unit. We may now turn out attention to the last branch of phonetics, which is discussed below.

3.4 Auditory Phonetics

This is the aspect of phonetics that concerns the natural processing systems of speech reception and perception. The main organ of the human body concerned with this is the ear (barring the controversy of the supremacy of the brain or the ear over speech reception and perception). Among the various contesting sounds that bombard the environment that surrounds the ear region every microsecond, the ear consciously selects those that it wishes to process, in this case, speech. It also transmits the selected signals and analyses them. Because of the obvious reasons, information about the workings of the ear in speech processing or auditory phonetics is not abundant compared with what we have on the other branches of phonetics – articulatory and acoustic phonetics.

However, from what is available, the ear is divided into three sections namely, the outer ear, the middle ear and the inner ear. The *outer ear* comprises the ear lobe that channels the speech sound signals that come from the mouth, through the environment into the ear. It also contains the eardrum a sensitive diaphragm, and a narrow canal that connects the outer world to the eardrum. When the sound signals come from the outer world through the channel, the sensitive diaphragm begins to vibrate repeatedly; and as it does, it causes the air molecules in the canal to shake violently. As this goes on, the intensity of the signals are modified so that the weak signals are amplified or increased, while the loud ones are filtered to be reduced or rejected; thus making the eardrum in the outer ear to perform the functions of a resonator.

These modified sound signals then move on to the next part of the ear called the middle ear. This is another air-filled cavity that connects the eardrum to the inner ear, and it contains a chain of three thin bones. The middle ear, too, is a resonator as it further increases or decreases the amplitude (the acoustic measurement of intensity or loudness) so that the sound signals that are too low to be heard by the ear can be increased and those too loud for the ear can be reduced or rejected. In addition, the middle ear acts as a resonator because its vibrations also set into motion the fluid molecules in the inner ear, thereby, transmitting the speech sound waves coming from the outer ear into the inner.

The *inner ear* is the main organ of the ear that connects the rest of the ear to the brain where the operations on speech reception and perception end. It is made up of what is called *cochlear*, a coiled conical shape object that looks like a snail. This last part transmits into the brain through some nerves the received and processed sound information from the mouth.

Let me summarise the actions of the ear that I have just discussed in the figure below, which I have named The Pole of Sound Perception

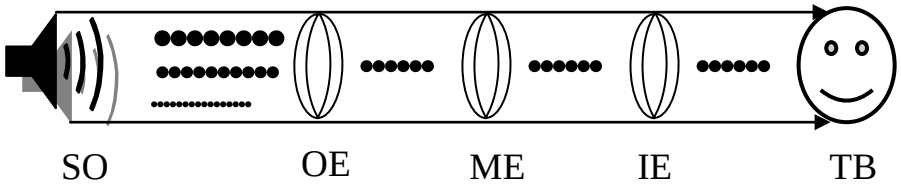

Figure 1: The Pole of Sound Perception

Where: SO = Sounds from Outside, which is the input; OE = Outer Ear; ME = Middle Ear; IE = Inner Ear; and TB = The Brain.

You would notice that between SO and OE, the types of sound signals are different; some look tiny or barely audible while some others are big and too loud. But between OE and TB, the signals appear similar. This is my simulation of the properties that serve as input into the auditory system, which are of irregular amplitude; how they are transmitted and analysed for enhancement and attenuation; and the output that looks fairly regular, ready for transmission for the brain processing.

4.0 SELF-ASSESSMENT EXERCISES (SAE)

Let us conclude this unit by calling your attention to the following self-assessment exercises.

SELF-ASSESSMENT EXERCISE (SAE) 1

i. List a few places in the world where phonetics had an early engagement.
ii. Mention four early phoneticians and period of engagement of each of them.

iii. Discuss the work of a phonetician and how he sets about it.

SELF-ASSESSMENT EXERCISE (SAE) 2

i. What can you describe as the vocal tract?
ii. Give two examples of sounds produced with an explosion from the lips.
iii. With three examples differentiate between lenis and fortis.

SELF-ASSESSMENT EXERCISE (SAE) 3

i. Define acoustic phonetics.
ii. Differentiate between the sub-glottal and supra-glottal regions.
iii. Explain the Source-Filter Theory of speech production.

SELF-ASSESSMENT EXERCISE (SAE) 4

i. What is the concern of auditory phonetics?
ii. List the three parts of the auditory system.
iii. "Garbage in garbage out" is an apt description of what transpires between the environment outside of the ear and the brain. Do you agree?

5.0 SUMMARY

From this Unit, you have learnt the following main points:

- Phonetics is the scientific study of speech sounds and how they are made.
- It is usually studied under three main branches, namely:
  - Articulatory phonetics
  - Acoustic phonetics, and
  - Auditory phonetics.
- By convention, we often enclose phonetic transcriptions in square brackets, e.g. […].
- Phoneticians, the world over, have an association called the International Phonetics Association (IPA); the conventional phonetic symbols also share the abbreviations, International Phonetics Alphabet (IPA).

- Articulatory phonetics is concerned with how the organs of speech are manipulated to produce speech sounds.
- The speech organs for the production of speech reside in the vocal tract, mainly in the:
  - pharyngeal cavity
  - nasal cavity and
  - oral cavity.
- In describing a phone (speech sound), we are interested in the:
  - manner of articulation
  - place of articulation and
  - quality of articulation.
- Acoustic phonetics is concerned with the sound properties that lead to speech production such as:
  - waves and
  - vibrations.
- It is also the study of how these properties lead to speech sounds such as:
  - the aggressive or pulmonic air from the lungs
  - opening and closing phases of the vocal folds
  - vibration of the vocal folds and
  - the resonant activities of the vocal tract.
- Auditory phonetics concerns the processing and transmission of speech sound signals to the brain through the three main parts of the ear, which are:
  - the outer ear (eardrum)
  - the middle ear (a chain of three thin bones) and
  - the inner ear (cochlear).

6.0 TUTOR MARKED ASSIGNMENT (TMA)

Why will you consider phonetics a scientific study?

7.0 REFERENCES/READING LIST

Christophersen, Paul. 1956. *An English phonetics course*. London: Longman.

Clark, John & Yallop, Colin. 1990. *An introduction to phonetics and phonology*. Oxford and Cambridge: Blackwell.

Gimson, A.C. 1980. *An introduction to the pronunciation of English*. London: ELBS & Edward Arnold.

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Jolayemi, 'Demola. 2006. *The stress pattern of Nigerian English: An empirical phonology approach*. Göttingen, Germany: Cuvillier Verlag.

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UNIT 2 WHAT PHONOLOGY IS

CONTENTS

In contrast to Unit 1, this unit brings to you the speech sounds of *a language in use*, the internal and external cohesion of the sound system of English and the rules of the structure of the sound system. All this will be discussed in the sub-topics below.

1.0 INTRODUCTION

Phonology is the scientific study of the sound system of a language. It studies the interactions that occur among the sounds of a specific language. It also involves the rules of interaction of the sound system of the language that make a combination of sounds meaningful and acceptable in the language. The person who is concerned with this type of study is called a phonologist. His primary duty is to investigate how a set of sounds are structured before it makes meaning in the particular language. Based on this some rules or consistent structures are observed and noted.

2.0 OBJECTIVES

You should, by the end of this unit, be able to:

- define what phonology is
- identify some branches of phonology
- discuss a few English phonological rules

3.0 MAIN CONTENTS

3.1 The Segmental Phonemes

One of the main ways the phonology of a language may be studied is through the examination of the segmental phonemes that are structured or put together as meaningful sound units through which the grammar of the language is projected. You know from the previous unit that sound segments may stand together in any form without making any meaning. But in English for instance, we know that when a sequence of /b/ + /ʌ/ + /t/ (but) comes in this manner, it is a meaningful entity. Also, /s/ + /k/ + /ɪ/ +/l/ form the English word (skill), which means a special ability. We equally know that when /t/ is affixed to, for instance, "look" at the rear position giving /lʊkt/ (looked), we have an acceptable past tense of "look" in English. However, if we were to reverse the occurrence of /lʊkt/, to / tkʊl/, (tkol), we would not have formed any meaningful word in English. Or if we were to pick the first two words in /b/ + /ʌ/ + /t/ or of /s/ +

/k/ + /ɪ/ +/l/, to form “bu” and “sk”, respectively, we would of course not be speaking English.

Let me further give you another illustration to show that a phoneme is the smallest meaningful, contrastive and distinctive sound unit of a language, using English /t/ and /k/. Words such as: take - cake; tool - cool; took - cook; tight – kite, are good examples to show this. This is because when you switch /t/ for /k/ in the positions highlighted, you have a different set of words. It also shows that there are no two types of /t/ or /k/. Again, it is possible for you to divide “took” /tʊk/ into three phonemes - /t/, /ʊ/ and /k/. But can you further divide or sub-divide /t/ or /k/ or /ʊ/? It is absolutely impossible.

What the above analysis shows is that words are formed by a conscious arrangement of segmental (or segmented) phonemes according to an acceptable way in a particular language and not by an arbitrary arrangement of phonemes. It also shows that phonemes are the smallest sound elements or units that are meaningful, through which what one wants to say is said. Lastly, the analysis, equally, shows that these phonemes are broken into single sound elements called segments that are no longer divisible into any further smaller unit. Thus, I hope that the first statement of the above paragraph:

> One of the main ways the *phonology of a language* may be studied is through the examination of the *segmental phonemes* that are *structured or put together as meaningful sound units* through which the *grammar of the language* is projected.

has become more meaningful. The highlighted portions of the statement should remain as part of the repertoire of any language student.

Every language has its own consortium of the segmental phonemes usually called the vowel and consonant sounds. In addition, many languages also have a rapid movement from one vowel to another; this type of sound is called a *diphthong or glide*. Yet, some other languages have some glides from a diphthong to another vowel. This type of sound is called a *triphthong*. English is an example of a language that has the full

length of the consortium described above. For instance, English language has 12 vowel sounds, 8 diphthongs and about 5 triphthongs, and 24 consonant sounds. Details of this shall be the contents of the next Module. Meanwhile, no language operates with only the segmental or segmented units. A few other sound elements, which operates beyond the phoneme, is also involved in the sound system of a language, they can however not be segmented or divisible into smaller units, yet they complete the meaning of what is to be said. A phonological discussion of these types of sound features is presented in the next section of this unit.

3.2 Autosegmental or Suprasegmental Features

Have you ever heard of the word "supra"? It's an English word formed from Latin around the 16th Century, which means "above", "over", "beyond" or "transcends". If you prefix it to "segment", you will have "suprasegment", a word I think you may have come across. As said a little while ago, there are certain phonological features or sound elements that help a speaker to have a complete realisation of his thought. These sound elements transcend the phoneme, the word, the syllable or even a longer utterance. They operate at the composition or prose level; this is the reason such elements are often referred to as *prosodic features*. Because these features are used beyond the phoneme, they are also referred to as *suprasegmetal features*. A new trend in generative phonology (you will get to know more of this later in this course) championed by Goldsmith (1976) further says that these features we are talking about are separate elements of the speech sound, which are often treated in phonology as part of the phonemes or segments of a speech. He argues that rather, these features should be treated as autonomous segments, thus, they have earned the name *autosegmental features*. Such segments are: length, quality, crescendo, tempo, rhythm, stress and intonation, the last three being most prominent in a language like English (Gimson, 1980: pp. 222-223; Jolayemi, 1999: pp. 79-89). The study of how these features are used, when they are used and the particular interaction of these features with the segmental phonemes resulting in total meaning, fall in the realm of phonology.

3.3 Mode of Representation and Rules of the Structure of Phonology

In phonology the smallest sound unit is the phoneme. We often use these phonemes to undertake phonemic analysis. Because we must be carrying out this analysis of a specific language, we often enclose the transcription in slashed brackets - /…/ as you would have noticed in 3.1, which is what is called the *phonemic transcription*. In doing all this, we often involve the phonemic symbols, a complete set of which is available in the table of IPA. You must have learnt these symbols, especially the English phonemic symbols; but the detailed description will be reserved till a little later in the course.

Another main concern of a phonological study borders on the determination of how the speech sounds of a language are structured so as to present to people what you have on your mind. All languages have their rules, different from one another. For example, the English language has a rule that accounts for the change in pronunciation occasioned by the change in the grammatical status of the word. Morphologically, a word like "complete" /kəmpli:t/, a verb becomes "completion" /kəmplɛʃən/ when used as a noun. Two sounds, phonemically, you will notice, make the verb sound differently from the noun; the final vowel /i:/ changes to /ɛ/ and the final consonant, /t/ changes to /ʃ/. Some examples in this category are: redeem – redemption and; however, such a phonemic change does not affect a word like delete – deletion. When there is a phonemic change in a pronunciation of a word because of the change in word class (morphology), as in the examples I just gave, we say the word has operated on a morphophonemic rule.

Let us look at these words that are considered to operate other morphophonemic rules, this time of present to past tense:

	Group A	Group B	Group C
1.	mess – messed	call – called	resist – resisted
2.	sex – sexed	measure – measured	wade – waded
3.	sack – sacked	gag – gagged	rest – rested
4.	sack – sacks	boy – boys	kiss – kisses

4.0 SELF-ASSESSMENT EXERCISES (SAE)

Let us conclude this unit by calling your attention to the following self-assessment exercises.

SELF-ASSESSMENT EXERCISES (SAE)

1. What is a phoneme?
2. Identify some branches of phonology
3. Define the Autosegmental features.
4. List 3 examples of features studied under Autosegmental features
5. Name 2 synonyms you can use instead of Autosegmental features

5.0 SUMMARY

From this Unit, you have learnt the following main points:

- Phonology is the scientific study of speech sound system of a language
- It is usually studied under three main branches, namely:
  - Segmental phonemes such as the:
    - pure vowels
    - diphthongs
    - triphthongs and
    - consonants.
  - Autosegmetal features such as:
    - stress
    - intonation and
    - tempo
- As a study of the sound system of a language, phonology also concerns the study of the phonological rules that operate in the target language, like the morphophonemic rules in the English language.

6.0 TUTOR MARKED ASSIGNMENT (TMA)

With adequate illustration, discuss what phonology is.

7.0 REFERENCES/READING LIST

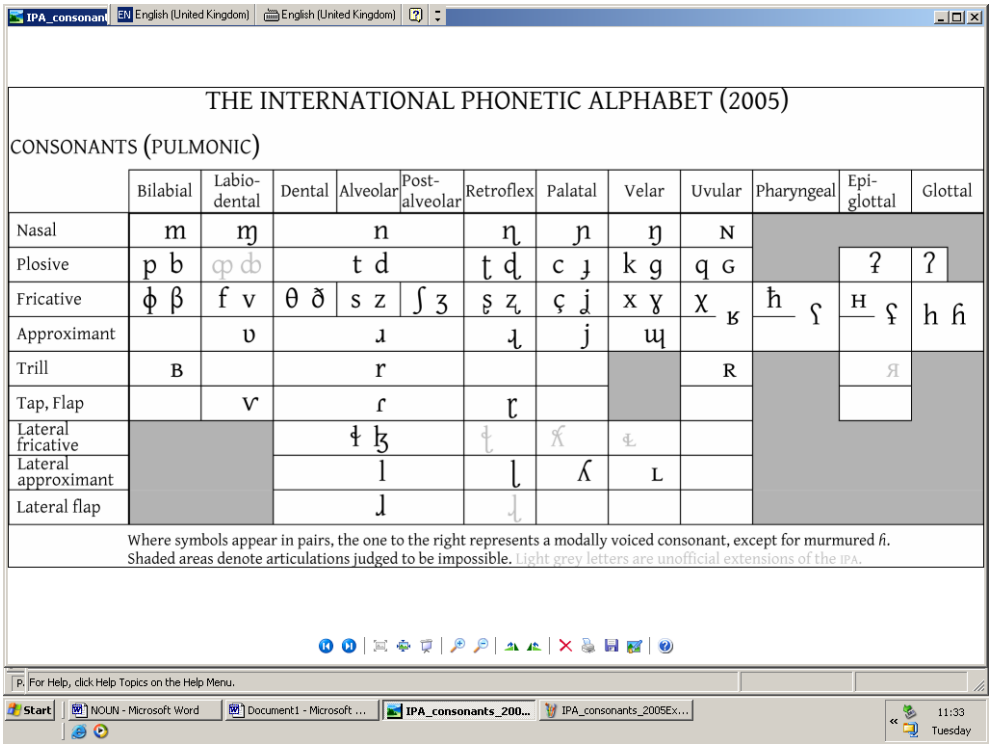
Gimson, A.C. 1980. *An introduction to the pronunciation of English*. London: ELBS & Edward Arnold.

Goldsmith, John. (1976). An Overview of Autosegmental Phonology. *Linguistic Analysis, 2*(1), 23-67.

Jolayemi, 'Demola. (1999). Autosegmental phonology and oral interpretation of stage productions in English. *The Performer: Ilorin Journal of the Performing Arts*, *1*(1), 74-92.

Oyebade, Francis. (2004). *A course in phonology*. Ilorin: Belodan Publishers.

8.0 IPA CHART FOR ENG 302



THE INTERNATIONAL PHONETIC ALPHABET (2005)

CONSONANTS (PULMONIC)

	Bilabial	Labio-dental	Dental	Alveolar	Post-alveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Epi-glottal	Glottal
Nasal	m	ɱ		n		ɳ	ɲ	ŋ	ɴ			
Plosive	p b			t d		ʈ ɖ	c ɟ	k g	q ɢ		ʡ	ʔ
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	ʜ ʢ	h ɦ
Approximant		ʋ		ɹ		ɻ	j	ɰ				
Trill	ʙ			r					ʀ		ʟ̆	
Tap, Flap		ⱱ		ɾ		ɽ						
Lateral fricative				ɬ ɮ								
Lateral approximant				l		ɭ	ʎ	ʟ				
Lateral flap				ɺ		ɭ̆						

Where symbols appear in pairs, the one to the right represents a modally voiced consonant, except for murmured *fi*.
Shaded areas denote articulations judged to be impossible. Light grey letters are unofficial extensions of the IPA.

MODULE 2 ENGLISH VOWELS

Unit 1 English Monophthongs I
Unit 2 English Monophthongs II
Unit 3 English Diphthongs and Triphthongs

UNIT 1 ENGLISH MONOPHTHONGS (PURE VOWELS) I

CONTENTS

This unit will, with the aids of explanation, illustrations and diagrams, describe to you the English monophthongs otherwise known as the English pure vowels. This Unit will expose you to the first four pure vowels of English. This will be discussed under the following sub-headings:

1.0 INTRODUCTION

I want to start the description of the first four English vowel sounds. But before I do that, let me discuss some preliminaries that are germane to this unit, which is the identification of the vowel sounds at a glance through the trapezium and the numbers. Also, with the aid of the trapezium, you are able to describe which part of the mouth each of the vowel sounds is produced. This occupies the first section of this unit. After this, we then begin the identification and description of the English pure vowels starting with the first four. Only a summary will be presented as a follow-up to what you learnt in previous courses on the English phonology. This unit will discuss the first four pure vowels sounds.

2.0 OBJECTIVES

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

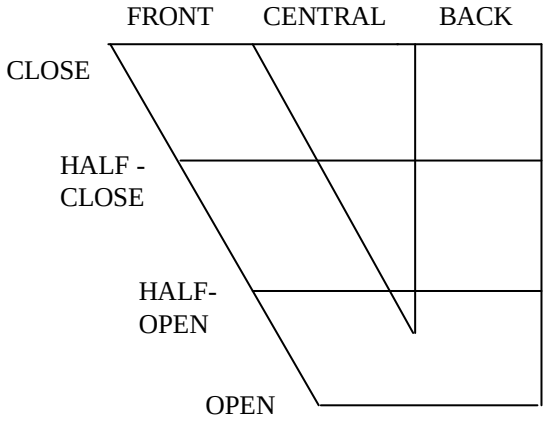
- Explain what a trapezium is and demonstrate its importance to the study of the English vowel system.
- Draw and fill the vowel trapezium and identify the first four English vowels by number.
- Identify and describe more accurately the first four English pure vowel sounds as indicted above.
- Give copious examples of words where the sounds may occur.

3.0 MAIN CONTENTS

3.1 The Trapezium and the Numbering System

A trapezium (trapezoid in American English) is described as a flat shape of four corners that has four straight lines, two of which are of equal length. It is pronounced /trəˈpiːziəm/. It is used in phonetics to represent the shape of the mouth or the tongue. It is important to us in phonology because it helps us to locate or identify which part of the mouth that a vowel has been produced. This makes our description of the vowels more accurate. It also assists us to remember such locations.

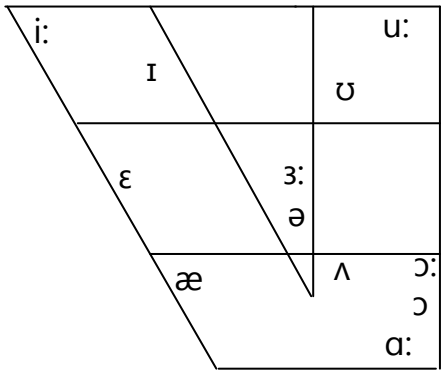
You often notice that we usually describe the vowels sounds with the position they occupy in the mouth during their production and the position of the tongue when such sounds are produced. Thus, when we describe a vowel sound as close, half-close, half-open, open, front, centre or back, we are actually referring to the various positions in the mouth where the described vowel has been produced. Let me illustrate this by presenting to you a labelled trapezium as shown below.



Trapezium Showing Positions of the Mouth

Thus, when a sound is said to be produced at the front of the mouth, such as /ɪ/, we say it a front sound, etc. If a sound is produced when the mouth is closed, such as in the production of /i:/, we often say it is a close vowel sound; and an open vowel, such as /a:/, is said to have been produced if the mouth is fully open in the process of production.

Let me present another trapezium containing the 12 English pure vowels; although, only the first four of them will be considered in this Unit.



Trapezium Showing Positions of the 12 English Pure Vowels

With the aid of these two trapeziums, you can describe vowels that are front or back; close or open. I shall discuss some details in subsequent units of the module.

Let me discuss the numbering system of the English monophthongs. Although not conventional, I have found the numbering system as an added advantage in the description of the English pure vowel sounds. This is done such that a number is assigned to a vowel. It was the system used by Daniel Jones in the early days of phonology, which was abandoned by many followers of the sage. The vowel numbers almost coincide with Well's vowel measurements of each of the pure vowel sounds in English (See Gimson, 1980: 101). In this case the vowel sounds are numbered from 1-12 such as presented below:

/iː	ɪ	ɛ	æ	ɑː	ɒ	ɔː	ʊ	uː	ʌ	ɜː	ə/
1	2	3	4	5	6	7	8	9	10	11	12

The numbering system, if you master it facilitates reference to specific vowels during a class or group discussion. I have found it very valuable in my classes. For instance, when a student pronounces a word such as, cup /kʌp/, which most will call cop /kɒp/, I can always ask the class: What vowel no. did you hear him use there? The class will give a rousing response, "Vowel No. 6". What vowel should he have used? Yet another rousing response, "Vowel no. 10", and everybody laughs afterwards. Although this does not contribute to the description of the vowel but it has helped to refer to a particular vowel quickly during a discussion. You will learn more details of actual description of the vowel sounds as the module progresses.

One other important lesson you must know is that there is no rushing through this aspect of the course book. You must take a lot of time, as your course facilitator will tell you, to master the correct pronunciation of the vowel sounds.

3.2 Pure Vowel Numbers 1-4: /i: ɪ ɛ æ/

3.2.1 /i:/ and /ɪ/

These two are pure vowel sounds that are used as pairs to construct minimal pairs. They are both front vowels because they are produced towards the front part of the tongue. They are also close because the mouth is somehow in the closing position when the sounds are produced. You may crosscheck this in the trapezium in Unit 1.1. You can also crosscheck by using your mirror to carefully watch your mouth and your tongue while producing them. (I hope you do not forget your mirror, a size of your palm, as advised in Module 1. The lady beside you may lend you her make-up mirror if you are nice to her, while you get yours handy next time).

Meanwhile, let's present a few words where each of the two sounds can occur. In doing, this and for the rest of the other phonemes in the module, I shall largely rely on Gimson (1980: 93-217).

1. /i:/

This is a long, close, front, and high vowel sound. The occurrence of a contiguous colon-like symbol /:/, you should remember, is IPA indication that the vowel in question is produced with a considerable length of time compared with a vowel without such a symbol. Vowel No. 1 can appear as:

e in: he, th<u>e</u>se, trap<u>e</u>zium
ee in: bee, weed, cant<u>ee</u>n
ea in: plead, bead, r<u>ea</u>son
ie in: piece, field, siege
ei in: s<u>ei</u>ze, rec<u>ei</u>pt rec<u>ei</u>ve
i in: machine, police, prestige

Let me quickly warn that this vowel is often not properly enunciated by the second users of English. This is because the phoneme is not often accompanied by the proper elongation it deserves. The two marks behind it, /:/, as already explained, means that we should spend a little time on the phoneme any time it occurs. This makes the portion where it occurs longer in

pronunciation. To achieve the proper rendition, you should try and tap twice in your mind when you want to say the word where the phoneme occurs. Let us try the first word used to exemplify Vowel No. 1 above, “he”, which is pronounced as /hi:/. For our practice, let us break the word into two bits – “he” and “e”. This gives us he e, as if you have two syllables. If you are able to repeat this smartly, several times, you will achieve the elongation that the correct rendition of the vowel demands.

2. /ɪ/

This is a short, close, front, and high counterpart vowel sound No. 1 above that can appear as:

- i in: pick, rich, win
- e in: pretty, market, wicked
- a in: village, private
- ie in: ladies cities
- y in: city, symbol, rhythm

The difference in the pronunciation of this and Vowel No. 1 is not only marked by length i.e. long versus short, it is equally marked by the position it occurs in the mouth, which you can see in the trapezium. Unlike Vowel No.1 which is close to the extreme beginning of the mouth on both sides (close and front), Vowel No. 2 is closer to the beginning of the middle of the mouth and the beginning of half opened positions. The implications of this are that, whereas Vowel No. 1 is fully closed and at the front front position of the mouth, Vowel No. 2 is closer to the half closed and mid-mouth positions. This gives the latter vowel a sound that is peculiar to it and one that technically differentiates it from Vowel No. 1.

3.2.2 /ɛ/ and /æ/

We shall move on to the second pair, /ɛ/ and /æ/, numbered 3 and 4.

3. /ɛ/

This is a short, half-close neutral sound that often appears as:

- e in: wet, bed, keg
- a in: many, Thames

ea in: lead, dead read

In some textbooks, the phoneme may be written as /e/. To most users of English as a second language (L2), the pronunciation is not troublesome; but to a few, it is. This is because the vowel may be replaced with something similar to Vowel No. 2. You should be careful with it when listen to it being produced by a good model.

4. /æ/

This is a short, half-open sound that often appears as:

a in: bat, man, marry

ai in: plait plaid

L2 users almost always get the vowel wrong as they tend to use only the first part of it /a/ (like in Nigeria) or only the last part of it /e/ (like in Ghana). The best way to approach a good rendition is by starting with the first part and end with the second, i.e. moving from /a/ to /e/ and finally arriving at /æ/; as the bleating of the ewe. Repeated and constant practices will land you on the mid-point between the two parts, which is the desired rendition.

4. SELF-ASSESSMENT EXERCISES (SAE)

SELF-ASSESSMENT EXERCISES (SAE) 1

1. Explain what a trapezium is.
2. Draw and fill the vowel trapezium.
3. Identify the English vowels numbers 1-4.

SELF-ASSESSMENT EXERCISES (SAE) 2

Identify the vowel sounds in each of these words: leisure, read (Vb+past), best, stick, mad, big, red, fish, rat and deep.

5.0 SUMMARY

In this unit, I have:

- Explained what a trapezium is.
- Demonstrated the importance of trapezium to the study of the English vowel system.

- Drawn and filled the vowel trapezium.
- Explained how you can identify the English pure vowels by numbers 1-4.
- Discussed how you can describe Nos. 1-4 vowel sounds of English.
- Therefore, you should also be able to give copious examples of words where each occurs.

6.0 TUTOR MARKED ASSIGNMENT (TMA)

a. Of what importance is the study of the trapezium to the study of the English vowel system?
b. Write two examples each of words where vowels nos. 1-4 can occur; your answers should not be similar to those that are already given in the unit.

7.0 READING LIST

Gimson, A.C. (1980). *An introduction to the pronunciation of English*. London: ELBS & Edward Arnold.

O'Connor, J.D. (1980). *Better English pronunciation*. Cambridge: Cambridge University Press.

Roach, Peter. (2000). *English phonetics and phonology* Cambridge: Cambridge University.

UNIT 2 ENGLISH MONOPHTHONGS (PURE VOWELS) II

CONTENTS

This is the continuation of my description of the English pure vowel sounds. This unit will, with the aids of explanation, illustrations and diagrams, describe to you the English monophthongs otherwise known as the English pure vowels. This Unit will expose you to Nos. 5-12 vowels of English. This will be discussed under the following sub-headings:

1.0 INTRODUCTION

As I pointed out in Unit 3, adequate time must be expended on the mastery of the correct pronunciation of the vowel sounds. It is our miscues, out of inappropriate rendition, that often mark us out as L2 users of English. In learning this, we must smoothing our vowels, do private as well as group practices, several times. If you remember the number of hours a newly born baby has to acquire and master its parents' language, you will imagine how much time you need to practice in order to reach the appreciable levels of intelligibility and acceptability.

Also, in mastering these vowels, you must listen intensely to your facilitator, who is expected to lead the practising exercises, as a good model for classroom learning. You may also avail yourself of the opportunity of practising with the audio cassettes or CDs produced for English pronouncing exercises. The ones easily reachable are those of A.C. Gimson and Peter Roach.

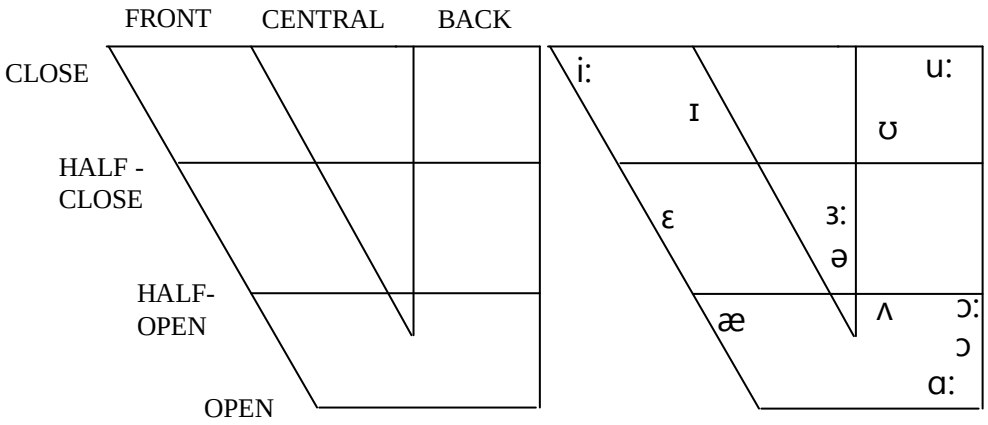
2.0 OBJECTIVES

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

- Further explain what a trapezium is and demonstrate its importance to the study of the English vowel nos. 5-12.
- Draw and fill the vowel trapezium and identify the English vowels by number.
- Identify and describe more accurately the Vowels No. 5-12 as indicted above.
- Give copious examples of words where the sounds may occur.

3.0 MAIN CONTENTS

Before I continue the discussion, let me present, again, another trapezium that contains the mouth position and another containing the 12 English pure vowels.



Trapeziums Showing Positions of the Mouth and the 12 English Pure Vowels

3.1 Vowel Numbers 5-7: /ɑː ɒ ɔː/

We now move to the discussion of vowel Nos. 5-7, which are often described as "rounded" because the lips form a round configuration during their articulations. Sometimes the lips form the letter "O" when the vowels are being produced.

3.1.1 /a:/

5. /a:/

This is a long, open, back, and low vowel. You can clearly see the elongation symbol, the colon; which means that, like I explained earlier, necessitates two taps in the mind of production. The mouth is wide open during the production of the sound, and it is produced towards the back of the tongue; and of course the tongue is at its lowest level. The sound appears in orthographical forms as:

a in: father, tomato, pass
ar in: far, car, bark,
ear in: heart, hearth
er in: clerk, sergeant
al in: calm, balm, calf
au in: aunt, laugh

In articulating this sound you must be very careful so as not to confuse it with vowel no. 4 /æ/; although, even, some non-RP native speakers do so, but the RP does not approve of it. That should be our template. Repeated practices, through a good model, is very necessary as the phoneme presents some problems to the L2 users.

3.1.2 /ɒ/ and /ɔ:/

This pair of sounds shares identical description with vowel No. 5.

6. /ɒ/

Vowel no.6 is short, back, and low. It appears in words such as:

o in: lot, sorry, log
a in: was, want, what
ou in: cough, trough,
ow in: knowledge

You may not find it difficult to say because the phoneme shares many properties with our own vowel systems.

7. /ɔ:/

This sound is a long, back and low vowel; it is always paired with vowel no. 6. The vowel appears as:

a in: war, talk, salt
or in: lord, horde, born
aw in: paw, jaw, law
ou in: bought, thought,
au in: caught, daughter, fault
ore in: before, more
oo in: floor, door
oar in: oar, board
our in: court, four

You must spend an extra time in its production as the colon sign behind it indicates. It is also one of the difficult phonemes to produce for the L2 users. You may easily get the tricks of its correct rendition if you would double the sound /o/ of “oh” to

give you /oo/. Some other words where the sound occurs are: court, fought, ball, fall, short and port.

3.2 Pure Vowel Numbers 8-12: /ʊ uː ʌ ɜː ə/

3.2.1 /ʊ uː/

This pair of pure vowel sounds is open and produced at the back of the mouth. The vowels are often used as minimal pairs. The lips take the shape of letter "O" when the sounds are being produced, so they too are described as rounded vowels. But I must tell you that while the latter, /u:/ is not difficult except that you must linger on it, the former, /ʊ/, is pretty difficult. It sounds more as the first part of Vowel No. 7.

8. /ʊ/

Of the pair of sounds, this is a short vowel. It appears as:

u	in: put, full, pull
o	in: wolf, woman, bosom
oo	in look, book, good, foot
ou	in: could, should, would

9. /uː/

This is a long sound that appears as:

o	in: do, move, lose
oo	boost, cool, pool, fool
ou	in: group, soup
u	in: rude, June
ew, ue, ui, oe	in: chew, blue, juice, shoe

Second language users of English often confuse the pair or even completely replace 5 with 6. Watch out so you do not fall a victim.

3.2.2 /ʌ/

10. /ʌ/

This is a short open vowel articulated between the centre and the back of the mouth. It appears as:

u in: fun, hut, sun
o in: come, one, son
ou in: country, young, cough
oo in: blood, flood
oe in: does

Many speakers of English outside the native cycle often drop it in place of vowel No. 6, /ɒ/. Are you a victim? This is an opportunity to master it to show a difference as a major in the English language.

3.2.3 /ɜ: ə/

This is the last pair of the 12 English pure vowels. They are both articulated at the centre of the mouth while the lips are half open, and the tongue is neutral i.e. not raised, lowered or retracted. The two, I dare say, are the most difficult to realise for L2 users; this is because they are completely absent in most of the vowel systems of the African languages. Thus, various alternatives are being used to replace them. For the former, some will realise as: /ɛ/ or /ɒ/; such as /bɛd/ or /bɒd/ for bird /bɜ:d/. The latter is realised as: /ɒ/or /ʌ/ as in /dɒktɒ/ or /dɒktʌ/ for doctor /dɒktə/.

11. /ɜ:/

This vowel is long and appears as:

ir, in: bird, first, girl
er, err, ear in: her, serve, err, earth, heard
ur, urr, in: turn, church, nurse, purr
or in: word, world, work
our in: journey, courtesy

12. /ə/

This is the last of the pure vowel sounds; the shortest in duration and on many occasions elided by the native speakers of English. This is why it is sometimes referred to as an "indeterminate vowel" or schwa. Orthographically, it appears as almost all the English vowel letters, a few of which are:

i	in: possible,	e	in: gentlemen,	a	in: woman
o	in oblige,	u	in suppose,	ar	in: particular
er	in: father,	or	professor,	ou	in: famous.

These two vowels, /ɜ: ə/, are almost not existent in most non-native speakers of English as they are often being replaced by some other vowels as already explained; so again, do not fall a victim, master them.

4. SELF-ASSESSMENT EXERCISES (SAE)

SELF-ASSESSMENT EXERCISES (SAE) I

i. Explain what a trapezium is.
ii. Draw and fill the vowel trapezium.
iii. Identify the English vowels by number.

SELF-ASSESSMENT EXERCISES (SAE) II

i. Using your mirror, describe what happens to your jaws while producing /i:/, /a:/.
ii. Describe the lip configuration in the articulation of /ɒ/ and /ɔ:/.

SELF-ASSESSMENT EXERCISE (SAE) III

Identify the vowel sounds in each of these words: mad, big, red, and deep.

SELF-ASSESSMENT EXERCISE (SAE) IV

Using your mirror, describe as detailed as you can /ɜ: ə/.

5.0 SUMMARY

In this unit, I have:

- Explained what a trapezium is.

- Demonstrated the importance of trapezium to the study of the English vowel system.
- Drawn and filled the vowel trapezium.
- Explained how you can identify the English pure vowels by number.
- Discussed the identification and how you can describe 12 vowel sounds of English.
- Therefore, you should also be able to give copious examples of words where each occurs.

6.0 TUTOR MARKED ASSIGNMENT (TMA)

a. Of what importance is the study of the trapezium to the study of the English vowel system?
b. Write two examples each of words where vowels nos. 1-12 can occur; your answers should not be similar to those that are given in the unit.

7.0 READING LIST

Gimson, A.C. 1980. *An introduction to the pronunciation of English*. London: ELBS & Edward Arnold.

O'Connor, J.D. (1980). *Better English pronunciation*. Cambridge: Cambridge University Press.

Roach, Peter. (2000). *English phonetics and phonology* Cambridge: Cambridge University.

UNIT 3 ENGLISH DIPHTHONGS AND TRIPHTHONGS

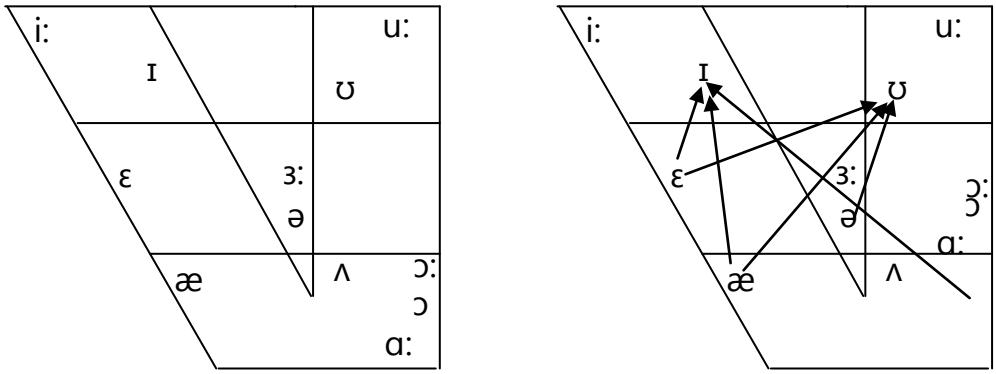
CONTENTS

This unit will start our discussion of the diphthongs in the English vowel system. This is done under the sub-headings below.

1.0 INTRODUCTION

This unit will undertake the description of the English diphthongs and triphthongs. For the purpose of continuity, I will continue from the last number after the last pure vowel.

I hope you still remember that a diphthong is a glide from on pure vowel to another pure vowel. If you know that a pure vowel is also called a monophthong then you will know why a combination of two vowels is called a diphthong ("di" for two). There are eight of them, but the first five, traditionally called the closing diphthongs, will be the occupation of the first section of this unit; while the centering diphthongs will occupy the second section of the unit. The last section of the unit will be dedicated to a discussion of the English triphthongs. I have tried to make a sketch of them below and placed them beside the monophthong trapezium so you can see how one pure vowel glides to another to make up the diphthong. I will make references to this in the course of the discussion.



Trapeziums showing the monophthongs and formed diphthongs

2.0 OBJECTIVES

By the end of this unit, you should be able to identify and describe the English diphthongs and the triphthongs.

3.0 MAIN CONTENTS

3.1 Closing Diphthongs: /eɪ əʊ ɑɪ ɑʊ ɔɪ/

Before I proceed, let me explain the concept of the "closing" feature of this set of diphthongs. These diphthongs are initiated by five pure vowels, namely: /e ə æ ɑ ɔ/. They glide or move towards two hosting pure vowels, namely: /ɪ ʊ/, which happen to be closing vowels. This is why these two sets of pure vowels have given "birth" to these closing diphthongs.

13. /eɪ/

As the diphthong trapezium shows a glide that is initiated around the half-close region of the mouth ends up at a region around the close/back of the mouth. A glide such as this gives rise to the closing diphthong above. It appears as:

a in: late, Kate, day
ai in: rain, fail, wait
ei in: eight, weight, rein
ea in: great, break steak

14. /əʊ/

Like 13, this diphthong moves from the half-close position to the close and back region. It appears as:

o in: sow, oh, both
oa in: soap, road, toast
oe in: foe, hoe, toe
ou in: soul, though, shoulder

15. /ɑɪ/

This diphthong glides from a front open position near vowel No. 4, /æ/, as indicated in the trapezium, to the front close region where we have the hosting pure vowel no. 2, /ɪ/. Some varieties of the diphthong extend till the front back of the mouth. It appears as:

i in: time, right, wide
y in: dry, why, by
ie, ye in: lie, die, pie
igh, in: fight, light, high

eigh in: height freight
e, uy, in: eye, buy, guy
ei, ai in: either, eider, aisle

16. /ɑʊ/

This is a counterpart to No. 15 but its host to which it glides resides at the back close region. It appears as:
ou in: house, sound, plough, bough
ow in: now, cow, how

17. /ɔɪ/

This diphthong glides from the back open region to the front close region. it appears as:
oy in: boy, ploy,
oi in: noise, choice, point
uo in: buoy

3.2 The Centering Diphthongs: /ɪə ɛə ʊə/

Look at the pure vowel trapezium, locate the centre of the mouth and note a pair of pure vowels prominently located there. One of the pairs, the schwa, plays host to these four diphthongs; this is the reason they are described as centring diphthongs.

18. /ɪə/

This is a centring diphthong initiated from the front close region. It appears as:
ee, ere, ea, in: deer, dear, here, tear (Nn.)
ei, ie, i in: weird, fierce, fakir
ea, ia, eu, eo in, idea, Ian, museum, theological

19. /ɛə/

This centring diphthong is initiated at the half-close region. It appears as:
are in: care, rare, share
air in: air, fair, pair
ear in: bear, pear wear, tear (vb.)
ei, ere, a in: their, heir, there, Mary

Among many speakers of English as a second language, diphthongs Nos. 14 and 15 are often being confused such that no. 14 submerges 15. Take time to avoid the confusion.

20. /ʊə/

This diphthong begins at the close back region of the mouth and goes on to meet the host at the centre of the mouth. It appears as:

oor in: poor, moor
ure in: pure, endure cure, sure
ur in: curious, spurious during
ewer in: sewer
our in: tour, dour gourd

3. 3 THE TRIPHTHONGS: /ɑɪə ɑʊə eɪə ɔɪə/

From "tri", it should be clear that there are glides not only from one pure vowel to another but also from the second vowel to the third, so three pure vowels are involved. Hence the name: triphthong (compare with diphthong (2), and monophthong (1). Most of the time, the first of these three sounds receives the stress, and so is pronounced with greater effort while the last in the series receives the least effort. Gimson (1980: 139) describes them as "diphthongs + /ə/". You will notice that all of them end at the centre region of the mouth. They are also referred to as complex sound formations because of the configurations of the mouth – lips and the jaws – that have to take about three shapes during their production. This forms the content of this unit. I will continue the numbering system from the last number; though the numbers are not so mandatory as is the case with the monophthongs.

21. /ɑɪə/

This triphthong starts at the open region, goes to the front close region and ends at the middle of the mouth. The tongue too has a complex movement during the articulation as it moves from the low position to the high position and finally to the neutral position. The triphthong may appears as:

ire, (u) yre in: fire, hire, tyre, buyer, tyre
ie(r) in: tier, pliers, crier society
igher in: higher, buyer
ai in: trial, liar
iro, ion in: iron, lion, pavilion

22. /ɑʊə/

This triphthong also starts at the open region, moves to the back close region and ends at the middle of the mouth. The triphthong appears as:
our in: our, hour, flour
ower in: power, shower, flower

23. /eɪə/

The triphthong begins to move from the front half-close region rising slightly to the front close region then ends at the centre of the mouth. It is another complex triphthong as it involves a multiple configuration of the jaws and the lips. It appears as:
a/e-yer in: player, greyer

24. /ɔɪə/

This triphthong moves from the back close position to the front half-close region and ends at the middle of the oral cavity. It has a complex configuration, too, and appears in the following orthographical forms:
oyer in: employer

In the description of the English vowels, one last bit is to observe the shape of the lips during production because the lips form into different shapes when you produce any sound, whatsoever. You can easily do this by using your mirror, as advised in Module One; you can also observe someone produce them. By doing this, you will notice that the lips are in the neutral position as when you say the word “set”, spread as when you say “seat” or round as when you say “suit”.

Secondly, using the criterion of the distance between the upper and lower parts of the mouth you can now say if a vowel sound is close, half close, half open or open altogether, as indicated in

the trapezium. Also, using the criterion of the position in the mouth, you can state if a vowel is front, central or back.

Lastly, we often describe vowels also by the position of the tongue during production. Thus, it is possible to describe a vowel sound as high as when you realise “heal”; neutral or rest as when you realise “hell”; and low like when you realise “hall”. Apart from learning to pronounce and perceive sounds correctly, our duty as, prospective phoneticians and phonologists, is to be able to accurately describe the human speech sounds that we hear or the particular language in which we specialise; for you and I, English. This is what this module has brought to you.

4.0 SELF-ASSESSMENT EXERCISES (SAE)

i. Using your mirror, describe the three centring diphthongs.
ii. Check the dictionary for two more examples of the closing diphthongs just treated.
iii. Using you mirror, describe the four triphthongs.

5.0 SUMMARY

In this unit you have learnt, with illustrations that:

- A diphthong is a glide from one pure vowel sound to the other, which are mainly of two types namely:
  i. Closing diphthongs and
  ii. Centering Diphthongs
- A triphthong is a combination of three (tri-) pure vowel sounds.

6.0 TUTOR MARKED ASSIGNMENT (TMA)

a. With adequate examples, how have the closing and centring diphthongs earned their names?
b. Draw a trapezium and locate 2 closing and 2 centring diphthongs, and 2 triphthongs in it.

7.0 REFERENCES/READING LIST

Gimson, A.C. 1980. *An introduction to the pronunciation of English*. London: ELBS & Edward Arnold.

O'Connor, J.D. (1980). *Better English pronunciation*. Cambridge: Cambridge University Press.

Roach, Peter. (2000). *English phonetics and phonology* Cambridge: Cambridge University.

MODULE 3 ENGLISH CONSONANTS

In this module of three units, attempt will be made to expose you to the consonant sounds of English. You will notice, as you study this module, that most of the sounds are paired as usually traditionally done. One main reason for this is to make it easier for you to learn by pairing sounds that share many points of description. But more importantly, the pairs are acoustically motivated to indicate the actions or inactions of the vocal folds. As already explained in Module 1 Unit 1, the vocal folds determine which sound to be voiced by closing and allowing the pent up air to vibrate rather than freely flow out. These actions lead to the articulation of the *vowel sounds*, the concern of the previous module.

If, however, the vocal folds slightly open while vibrating, a set of sounds with a combination of vibrations and noise are formed when there is an obstruction at the vocal cavities while flowing out. This is the acoustic explanation that leads to the articulation of the *voiced consonant* sounds. But when the folds are widely open, there is no pent up air to make them vibrate; therefore, the air from the lungs freely rush out of the larynx causing a noise or turbulence along the pharynx into the vocal cavities. When this noise or turbulence is obstructed at the vocal tracts, the sounds described as *voiceless consonants* are formed. Another term used to describe voiced/voiceless sounds are fortis/lenis, less as a result of the acoustic activities, but more because of the articulatory activities, evoking little or greater muscular tension of the articulating organs of speech. (See Module 1, Unit 1, and Module 6 will give additional expatiation).

For the avoidance of repetition, the explanation above will be understood as common to all the consonants that I will discuss, therefore, will not raise the point again as the discussion progresses.

Again, in the pairs of sounds to be discussed, the left hand consonants are voiceless and fortis while the right ones are voiced and lenis. This will add up to the additional description offered during the explanation. Please, bear this in mind.

Unit 1 The Plosives: /p b, t d, k g, ?/

Unit 2	The Affricates and Fricatives: /ʧ ʤ, f v, ð θ, s z, ʃ ʒ, h/
Unit 3	The Nasals, Lateral, Continuants and Semi-vowels: /m n ŋ l r j w/

UNIT 1 THE PLOSIVES: /p b, t d, k g, ʔ/

CONTENT

The unit will start our description of the English consonant sounds, which will be done under the following sub-headings:

1.0 INTRODUCTION

This unit describes the sounds referred to as plosive sounds. They are also often referred to as stops. Why are they plosives and stops? Please, pay attention as I progress in their description. But before we get set, you will notice an unfamiliar phonetic symbol, like a question mark, at the end of the list. What type of sound is this and why is it so unfamiliar? Let's move on for answers!

2.0 OBJECTIVES

At the end of the unit, you will be able to: Identify and describe the plosive sounds. You will also be able to identify the English plosive sounds and pronounce them correctly.

3.0 MAIN CONTENTS

3.1 /p b/: Bilabial Plosive

Remember the voiceless/voiced and fortis/lenis concepts? Just as the two consonants stand, /p/ is voiceless and fortis while /b/ is voiced and lenis. In the production of this pair, the air that escapes through the glottis into the oral cavity is obstructed or stopped by the two sets of the lips. This obstruction is so long that the air builds up pressure inside the mouth such that when the two lips part to allow it flow out, it does so with some form of force that causes some kind of explosive sound.

Apart from being plosives, the two sounds are also described as bilabials because the two lips are the major articulators during their production. (See Module 1 Unit 3:3).

/p/ occurs as: p, pp, gh as in: pile, cripple, hiccough;
when aspirated: pin, pill, pass, important, people;
when unaspirated: Spain, spite, split;
when silent: pneumonia, psychology;
when initial; medial; final: pen, Paul; staple stipend; tap, cheap.

/b/ occurs as: b, bb as in: bile, bubble;

when initial; medial; final: boot, bite; about, laborious; tab, tube.

Before I go on to 3.2, there is some special elucidation I will like to add here; and this is on the first part of this pair, /p/. Across the country, Nigeria and a few other places in Africa, this phoneme has grown several variants. Experts in segmental phonology in Nigeria have published their research and observations in this regard. You would also have observed of certain variants of the phoneme.

Some arguments have been made that these variants are geographically or linguistically motivated, and that the consonantal system of such languages that grow the variants are the main reason for the existence of the variants. Such variants of /p/ are: /pf/, /f/; and the outright exchange of phonemes /p/ for /f/ and vice versa. The phonological observations are that on some occasions the English phoneme, /p/, is replaced by /pf/ in words such as pineapple, apple, people and pen. On some other occasions, /p/ is replaced by /f/. Yet, on other occasions, the English phoneme /f/ is used instead of /p/. These variants exchanges have been pointed out by several experts such as Eka (1989, Jowitt (1990) and Jolayemi (2006). Indeed, Jolayemi (1998) once recorded, in a public production of Ola Rotimi's *The gods are not to blame* that the cast that acted Odewale said:

Rise, feofle op my land, feofle op my…
Instead of:
Rise, people of my land, people of my…

In the literature, experts have located the use of these variants in the Northern part of the country. So, it is almost an academic surprise that a report of such usage is emerging in a little town somewhere in the Eastern part of Nigeria (Jolayemi: in progress). Some of the corpora collected revealed:

Government fikin (child)
Instead of:
Government pikni (child)

The importance of calling your attention to these variants is to equip you with the norm and the variants, so that, as learners and as prospective professionals and experts of English

phonology, you will be aware of them. You will also be able to aspire to use the standard variant, insist on the standard variant, and teach the standard. If you do not observe these, you would then have not contributed to the maintenance and control of English acceptability and intelligibility as, the major aim of your BA in English.

3.2 /t d/: Alveolar Plosive

The voiceless-fortis/voiced-lenis divisions are still applicable here. But in addition, the tip of the tongue clicks at the *alveolar* and allows the pent up air to escape with an explosion. They are, therefore, plosive sounds.

Please, note that the English /t/ is not produced with the *blade* of the tongue as done by many second users of the language but with the *tip* of the tongue. You will particularly notice this if you listen to programmes and news in English as L1 such as from the CNN or BBC. I often notice this correct rendition also among the Cable and Silverbird Stations, which are Nigerian TV stations. Almost always, the only noticeable difference between the pair is the one caused by the laryngeal activities; i.e., while the first is a voiced sound, the other is voiceless. Thus, apart from this, all the other articulatory and auditory characteristics, especially *the point or place of articulation*, are shared by the pair. You must take special note of this so that you do not articulate the first pair, /t/, with about the first fifth of your tongue but the very *tip* of the tongue; *exactly* the point you use to pronounce /d/. In fact, you only need to add voice, without disengaging your tongue from the alveolar to /t/ in order to realise /d/. If you do otherwise, some native speakers of English will bet you do not speak English!

/t/ occurs as: t, tt, d, th as in: tell, little, asked, Thailand and Thompson;
when aspirated: take, tall, tight;
when unaspirated: tick, tool, letter;
when initial: tie, ten; medial: latter, written; final: sat, mat.

/d/ occurs as d, dd as in: do, idle, add, ladder;
when initial: die, den; medial: ladder ridden, ; final: sad, pad.

Let me point out another problem we often notice in our realisation of /t/. This is the tendency to dentalise the phoneme to make it sound as one of the dental consonants such as "th" especially the voiceless counterpart, /θ/. It is a very inaccurate rendition of the phoneme, which, as learners of the English phonology, you must avoid. Your class facilitator will further assist you to make practical practices until you begin to assume the correct position.

3.3 /k ɡ/: Velar Plosive

The voiceless-fortis/voiced-lenis characteristics also hold. In addition, the back of the tongue strikes the *velar* i.e. the soft palate. While doing this, the two organs (tongue and velar), which once stuck together and barred air from flowing out suddenly part ways allowing a rush out of air with a *plosive* sound.

/k/ occurs as: k, c, cc, ch as in: kind, cut, accord, chord;
when aspirated: kind, cat car; when unaspirated: sky, skill, scar;
when initial: kiss, call, medial: actual, akin final tick, park.

/g/ occurs as: g, gg as in: gas, gut, maggot, biggest;
when initial: gas, give, medial: ago, bigger; final: pig, leg, peg.

3.4 /ʔ/: Glottal Plosive

This sound is not a significant consonant sound in RP but very popularly used across the London streets; it is produced at the glottal region of the oral tract. It's a sound which now seems to have replaced the voiceless, fortis, alveolar plosive, /t/ in Poplar London variety of English. It is a voiceless, fortis, glottal sound, which occurs in words such as water, butter, but pronounced as /wɒʔə/ and /bʌʔə/ instead of / wɒtə/ and /bʌtə/. It is because /ʔ/ is a variety of sound used among the native speakers in London that is why it is not common to us. Secondly, it is occasionally used as hiatus by RP speakers.

4.0 SELF-ASSESSMENT EXERCISES (SAE)

Let me conclude this unit by asking you the question below:

With the aid of 5 examples each, what do you understand by these terms, *fortis* and *lenis*? Use English words and sounds as examples

5.0 SUMMARY

In this Unit I have made attempts to assist you to be able to describe the English sounds acoustically described as plosive or stop sounds because of the manner they obstruct the flow of the air and the manner they have allowed the air to escape causing some kind of explosion.

6.0 TUTOR MARKED ASSIGNMENT (TMA)

Acoustically describe what makes a sound plosive, using 6 examples of English words.

7.0 REFERENCES/READING LIST

Gimson, A.C. 1980. *An introduction to the pronunciation of English*. London: ELBS & Edward Arnold.

Roach, Peter. (2000). *English phonetics and phonology* Cambridge: Cambridge University.

UNIT 2 THE AFFRICATES AND FRICATIVES: /ʧ ʤ, f v, ð θ, s z, r, ʃ ʒ, h/

1.0 INTRODUCTION

This unit describes the sounds referred to as affricate and fricative sounds. Their manners of production are distinctly different from the ones just described in Unit 1. In what ways are they different? Get on board, please.

2.0 OBJECTIVES

By the end of the unit, you will be able to identify and describe:

- the affricate sounds,
- the fricative sounds, and
- distinguish between the acoustic cues for the affricate and fricative sounds.

3.0 MAIN CONTENTS

3.1 THE AFFRICATE SOUNDS

Affricate sounds are produced at two points of the organs of speech namely the alveolar and palatal regions. Their rendition is achieved by placing the tip of the tongue at the alveolar; at the same time stuck the blade to the palatal region. This results in their double-phonemic phonetic representations.

3.1.1 /ʧ ʤ/: Palato-alveolar Affricate

The first of this pair is voiceless and fortis while the other is voiced and lenis. They are the two main affricate consonant sounds of English. The first pair, /ʧ/, is a combination of the voiceless fortis alveolar /t/ and its voiceless fortis but palatal counterpart, /ʃ/. The second pair, /ʤ/, combines the voiced lenis alveolar, /d/, with the voiced lenis palatal, /ʒ/. This is the reason they are described as *palato-alveolar* consonants sounds. Like the plosive sounds, they completely obstruct or stop the airflow in the oral tract; but unlike the plosive sounds, do not abruptly release the pent up air with an explosion, but by gentle release. This is why they are called *affricate* consonant sounds.

/ʧ/ Can occur as: ch, tch, t as in e.g.: choice, catch, feature. When initial: choice, chess; medial: orchard, wretched; and final: catch, batch.

/ʤ/ Can occur as: j, g, dg, gg, dj, de, di, ch as in: Jos, gem, bridge, suggest, adjective, grandeur, soldier, Norwich.
When initial: joy, jam; medial: budget, urgent; and final: large, judge.

3.2 THE FRICATIVE SOUNDS

Fricative sounds, by nature of production, are much generous than the plosive and affricate sounds described above. This is because the plosive and the affricate sounds are produced with some degrees of stoppage; or erection of an obstacle along the path of production. But fricative sounds do not experience such stoppage as the articulators (organs of speech) involved in producing them do not often make a complete closure against the air which travels to the mouth. Thus, within the little opening between the articulators, the emanating air is allowed to come outer space with a little sibilant (sss) sound.

3.2.1 /f v/: Labio-dental Fricative

Just like the pairs before, first of this pair is voiceless and fortis while the other is voiced and lenis. The main articulators employed to produce these sounds are the lower lip and the upper teeth; this is where they have earned the name “labio-dental”. They are fricatives because, as explained above, there is left a little gap between the lower lip and the upper teeth; it’s through this little gap that the air which produces the two sounds passes.

/f/ occurs as: f, ff, ph, gh as: in file, office, philosophy and cough.
When initial: fill, phoneme; medial: affair, orphan; and final: staff puff.

/v/ occurs as: v, f, ph, as in: Victor, of, nephew.
When initial: vain, Valentine; medial: avoid reveal; and final: starve, pave.

3.2.2 /θ ð/: Dental Fricative

The first of this pair is voiceless and fortis while the other of the pair is voiced and lenis. They are dental sounds because the main organ in their production (apart from the tongue) is the upper set of teeth. The tongue and the upper teeth path ways very slightly allowing the passage of the air-stream with just little friction, in order to produce the fricative sounds.

/θ/ occurs as: th as in: thin, think
When initial: thorough; medial: affair, orphan; and final: blacksmith.

/ð/ occurs as: v, f, ph, as in: then, them.
When initial: vain, Valentine; medial: within; and final: starve, pave.

3.2.3 /s z/: Alveolar Fricatives

Like the pairs before, the first of this pair is voiceless and fortis while the other is voiced and lenis. They are produced with blade of the tongue stuck to the alveolar region living a partial space for the air-stream to force out. This is the reason the pair is described as “alveolar fricative”.

/s/ occurs as: s, ss, c, sc, x(+k) as in: site, miss, cite, science, lax;
when initial: sink, sing; when medial: respond, decide; when final: loose, lights;

/z/ occurs as: s, ss, z, zz, x(g+) as in: rise, scissors zinc, frizzle, example; when initial: zinc, zing; when medial: lazy, excite; when final: lose, lies

3.2.4 /ʃ ʒ/: Palato-alveolar Fricatives

The first of this pair is voiceless and fortis while the other is voiced and lenis. Also, the sounds are palato-alveolar because there is an articulatory glide from the palatal to the alveolar region made by the tongue. And of course, while the tongue sweeps through these regions, it leaves a tiny space for the air to escape causing a little friction that gives rise to the sounds.

/ʃ/ occurs as: s, ss, sh, sch, sc, c, ch, t as in: sure, mission, shell, schedule, con<u>sc</u>ience, o<u>c</u>eanic, charade, nation;
when initial: shout, sugar; medial: brochure, assure; final: fish, wish.

/ʒ/ occurs as: s, z, g, j as in: pleasure, seizure, genre, Beijing; when initial: genre, gigue; medial: visual, measurement; final: does not occur in most English words.

3.2.5 /h/: Glottal Fricative

This sound is produced at the glottal region, a place the end of the velar with the characteristics of the fricative sounds. Its is a voiceless fortis sound; which occurs as: h and wh as in: how, he, who, whose. When in the initial position, it occurs as: hell, his; at the medial position as: perhaps, behind; it does not appear at the final position in English.

4.0 SELF-ASSESSMENT EXERCISE (SAE)

With the aid of 2 consonant sounds, distinguish between affricate and fricative sounds.

5.0 SUMMARY

In this Unit 2, attempts have been made describe the English sounds acoustically described as:

- affricate sounds because of the manner the articulators have obstructed the flow of the air and the gradual manner they have allowed the air to escape;
- fricative sounds because the articulators do not really obstruct the air-stream but merely leave a little gap to allow the air pass with a little friction.

6.0 TUTOR MARKED ASSIGNMENT (TMA)

Listing the organs of speech involved, describe how fricative sounds are produced.

7.0 REFERENCES/READING LIST

Gimson, A.C. 1980. *An introduction to the pronunciation of English*. London: ELBS & Edward Arnold.

Roach, Peter. (2000). *English phonetics and phonology* Cambridge: Cambridge University.

UNIT 3 THE NASALS, LATERAL, CONTINUANTS AND SEMI-VOWELS: /m n ŋ l r j w/

1.0 INTRODUCTION

In Unit 3 of this module, I shall describe for you the sounds referred to as nasal, lateral, continuant and semi-vowel. Why are they referred to as such? I am certain that the descriptions of the sounds are not so unfamiliar to you. But wait and see how I am going to explain it to you in the simplest manner you've never really come across. My explanation, you'll find out is simple, but of course, not simplistic. Please, let's ride on.

2.0 OBJECTIVES

You will, by the end of the unit, be able to identify and describe:

- the nasal sounds,
- the lateral sound,
- the continuant sound, and
- the semi-vowel sounds

3.0 MAIN CONTENTS

3.1 /m n ŋ/: THE NASAL SOUNDS

One acoustic phenomenon common to the three consonants above is that the air propagated to produce them passes through the nasal cavity (the nose); and because of the resonance that takes place along the narrow path in the naso-pharyngeal cavity, the three sounds are produced in that peculiar nasality sound. To achieve this, the velum is sufficiently lowered to block the air-stream passage through the oral cavity, but which is re-channeled through the pharyngeal to the nasal cavity.

For /m/, the air coming from the trachea is blocked by the two lips, which redirects it to come into the open through the nose. For /n/, it is the articulation of the tongue and the alveolar that stops and redirects the air; while the tongue and the velum block the passage, which forces the air-stream to escape through the nose. This is why they are described as bilabial, alveolar and velar consonants, respectively. However, the three sounds share in common the factor of being voiced.

/m/ occurs as m, mm, mn, mb, mp as in: men, common, column, comb and plump;
while initial: mighty, miss; medial: Simon, committee and final: seem, time.

/n/ occurs as: n, nn, gn, kn, pn as in: no, cannon, reign, kneel and pneumonia;
While initial: net, knotty; medial: unite, gymnastics; final: man and famine.

/ŋ/ occurs as: n+g, k as in: sang and think
while final: there is no occurrence of this in English; medial: singer, stinker, final: ring, trying.

3.2 THE LATERAL, CONTINUANT AND SEMI-VOWEL SOUNDS

Some consonant sounds have been found to share similar characteristics that produce oral or vowel sounds. This is because articulations of the organs of speech that produce them do not constitute such blockage as to stop, dramatically, the air-stream on its way out. In such circumstances, there is an ample chance for the air-stream that produces the sound to flow out continuously, freely or uninterrupted; and frictionless. In some cases, too, this free flow of the air-stream actually allows a vocalic glide in the manner of vowel sound. This is why such sounds are often named continuant, semi-vowel and frictionless sounds. Some examples of such sounds are: /l r j w/

3.2.1 /l/: The Alveolar Lateral Sound

The lateral sound is mainly a function of the tongue and teeth. If you remember that “lateral” means “side”, then you will quickly understand that while the rest of the body of the tongue is at rest position, the tip of the tongue sticks at the centre of the upper teeth or the alveolar and allows the air to escape through one or both sides of tongue. It is also a continuant, voiced sound. /l/, the only lateral in English, occurs as: l or ll as in:

Initial: line, late, list, lot; medial: silly, ballot, parlour; final: final, bill and seal.

Like you will learn in 3.2.2 below, some indigenous influences exert themselves on this phoneme such that /r/ is used instead of

/l/. This is as result of the consonant system of the MT of the user. You must avoid this, by all means so that you will be properly understood. So, do not say: razy for riar for lazy liar.

3.2.2 /r/: Post-alveolar Continuant

This is a voiced and frictionless sound. It is also a continuant sound because there is little or no obstacle on the path of the air-stream during production; very similar to the manners of the fricative sounds. It is a post-alveolar consonant because the tip of the tongue tries to make a contact with a region of the roof of the mouth after the alveolar. It occurs as: r, rr, wr and rh as in: rise, rest; arrest, arrive; wrist, write; and rhythm, rhetoric; while initial: rose, rheumatics; medial: arise, parrot; and final position as (hiatus): far away /fa:ɹəweɪ/, for everyone /fəɹɛvrɪwʌn/.

I must inform you again of a problem some users of English as L2 come across with this phoneme. This is an influence of the indigenous language on English. In this case, there a replacement of /r/ with /l/; such that:

Reggae music from the radio
is realised as:
Leggae music flom the ladio.

As prospective specialists in English, we must learn to drop the L1 influence on English so as not mar our speech with so much local accent and become unintelligible. If you notice that you have this problem, you must make conscious efforts to rid yourself of it; and this is achievable by self-teaching through a good model.

3.2.3 /j/: Palatal Semi-vowel

This is a semi-vowel frictionless sound (See 3.2). It is also a palatal sound because the point of production is the palate when the tongue makes partial contact with the palate. During its production, the tongue makes a glide movement of a little duration along the palate. Gimson (1980: 212) further explains that it is “articulated by the tongue assuming the position of a front half-close to close vowel (depending on the degree of openness of the following sound and moving away immediately to the position of the following sound”. But while doing so, it

still leaves sufficient space between it and the roof of the mouth, which allows the emanating air-stream to flow out uninterrupted. This gives it the vowel-like quality; which, as such, makes it a voiced consonant sound. It occurs as i, u, y, eau, eu, ew, ue and ui, as in: spaniel, fuse, yell, beauty, feud, new, pursuit; while initial: yield, you; medial: pursuit, abuse; final: no occurrence in English.

3.2.4 /w/: Labio-velar Semi-vowel Sound

This is another frictionless, semi-vowel, voiced consonant sound but produced with the two lips and a glide at the velar position. During its production, the tongue is said to be at the position of a back half-close to close vowel (Gimson, 1980: 215). It occurs as: w, wh, and u after q, g as in: wear, where, quest and language. It also occurs in words such as: one, once, choir and suite. When final, /w/ occurs as wheat, well; medial: require, aware; final: not common in English.

4.0 SELF-ASSESSMENT EXERCISE (SAE)

Describe the articulatory and acoustic activities that make /m l j/ similar consonants. Illustrate with English words.

5.0 SUMMARY

In this Unit 2, attempts have been made to describe the English sounds acoustically described as:

- the nasal sounds- coming through the nose
- the lateral sound- sideways emission of air-stream
- the continuant sound,
- the semi-vowel sounds

} little or no obstruction as air emits, in vowel-like

6.0 TUTOR MARKED ASSIGNMENT (TMA)

With the aid of one sound each describe the nasal, lateral and semi-vowel sounds of English.

7.0 REFERENCES/READING LIST

Gimson, A.C. 1980. *An introduction to the pronunciation of English*. London: ELBS & Edward Arnold.

Roach, Peter. 2000. *English phonetics and phonology* Cambridge: Cambridge University.

MODULE 4 ENGLISH PHONEMES AND ALLOPHONES

UNIT 1 PHONEMIC DESCRIPTION BY CONTRAST

CONTENT

1.0 INTRODUCTION

There are a number of ways by which the phonemics of the English language can be identified and described. All the efforts are geared towards making the learning of these phonemes of English easy and pleasurable. As some of these phonemes are non-existent in our indigenous languages, students of English as a second language often have difficulty in mastering some of them. This is the essence many ways have been devised to assist the learning of the phonemes. For the purpose of this, the following four approaches, often being identified with the classical or traditional phonology, shall be discussed, namely: minimal pairs, allophones, complementary distribution and free variation. But first, what is a phoneme.

A phoneme is the smallest/indivisible and contrastive or significant unit of the sound of a language, which, when replaced with another sound, results in a change in meaning. It is the smallest or indivisible unit of a sound because a phoneme can no longer be subdivided into a smaller unit. For an example, "can" can be broken to three smaller units namely: /k/+/æ/+/n/; but can you further break the first sound, /k/, into smaller units? No, it is impossible. A phoneme is also described as the smallest contrastive or significant unit of the sound of a language because it has no twin, if you try to replace it in a word, it gives you another word. This means that the replaced sound changes the meaning of the former word. For another example, "can" is changed to "man" when /k/ is replaced by /m/. The English sounds you have learnt, by description and illustrations, in the previous unit are the phonemes of English.

In this unit, I shall make an effort to discuss more ways of learning the phonemes of the English language that border on comparing and contrasting one phoneme with the other within the environment of the other phonemes.

2.0 OBJECTIVES

You should, by the end of this unit, be able to:

- define and identify minimal pairs of vowel and consonants sounds;

- explain to you how to identify and describe a phoneme through its various other forms called allophones;
- discuss with examples free variation and complementary distribution in English

3.0 MAIN CONTENTS

3.1 THE ENGLISH MINIMAL PAIRS

3.1.1 Definition of Minimal Pairs

As the name implies, I shall discuss pairs of words here, which will introduce to you the pair of phonemes that you have to learn.

Let us consider the following words:

a. bag big
b. hard heed
c. pat fat
d. deal seal

In examples a – d above, all the words are similar except for one phoneme in each set of pairs. In (a), the two words are similar in pronunciation except for the short vowels in the words: /æ/ and /ɪ/. In (b), the pair of words is similar but for the long vowels: /a:/ and /i:/; likewise c and d, but for the consonant sounds /p/ and /f/, and /d/ and /s/ respectively which make the pairs of words dissimilar. Thus, a phonemic situation whereby a pair of words is contrasted by only a phoneme in the string of sounds is called a minimal pair. Gimson (1980: 49) describes this as "pairs of words which are different in respect of only one sound segment". Therefore, in the examples a – d above, /æ/ and /ɪ/, /a:/ and /i:/, /p/ and /f/, and /d/ and /s/ respectively, are minimal pairs.

3.1.2 Mode of Minimal Pairs

Minimal pairs are environmentally contrastive because they are only different within the environment (words) that they occur. In 3.1a for instance, /æ/ and /ɪ/ occur in the environment of b – g. Any other sound that can occur meaningfully within this

environment belongs to the same set of minimal pairs of /æ/ and /ɪ/.

3.1.3 Examples of minimal pairs of vowels are at medial position are: /ɛ / and /ʌ/

1. bed and bug. /bɛd bʌg/
2. when and one /wɛn wʌn/
3. den and done /dɛn dʌn/
4. bet and but /bɛt bʌt/

Through the minimal pairs, we further identify and describe the English consonants by comparing the similar segments of pairs that are focused on the English consonant sounds.

3.1.4 Examples of minimal pairs of consonants /p f/ at the initial (left) position

1. pat and fat /pæt fæt/
2. pit fit /pɪt fɪt/
3. peel and feel /pi:l fi:l/
4. please and fleece /pli:s fli:s/

You will notice in 3.1.3 and 3.1.4, the contrasting segments are the only different segments of each of the words in a pair. You should by this, thus, increase your knowledge of the English phonemic description by this environmental contrastive approach.

3.2 ENGLISH ALLOPHONES

This section focuses on another environmentally mediated description of a phoneme. It describes how a number of "subsidiary phonemes" can be realised from the same "main phoneme" as a result of the environment that the "main phoneme" has occurred. What I have just referred to as the "main phoneme" remains as the main phoneme; but is capable of generating "subsidiary phonemes" if the circumstances of its use in spoken English constrain it to, when the generated forms are known as allophones.

3.2. WHAT ALLOPHONES ARE

3.2.1 Description of Allophones

Let me break "allophones" into two, co-joined by -o-. Then, you have "all" –o- "phones". Let me add a 'y' to the first of the two words. Then, you have, "ally" -o- "phones." From your dictionary meaning, you would probably have known that an ally is someone who supports you and is very close to you, not in terms of distance, but in terms of understanding and similarity of interests. With such an ally (often used for countries of common interests) you will always have one common denominator. Keep that at the left side of your mind so that you do not forget. Now, let us turn to "phones". This should not be difficult for a 300L student of English Language: The smallest speech sound unit; and "phoneme", the smallest speech sound unit of a language; as already described of a phoneme.

You may have examples of both the vowel and consonant sounds: [æ ɒ t s]. Keep that at the right side of your mind so you do not forget. Lastly, let me add an 'f' to the co-joining 'o' to give you 'of'. This finally results to "ally of phone". According to my own thesis of simplification, "ally of phone" may have been said to have formed "allophone". Your difficulty of defining an allophone may now have been reduced if you would remember this. Thus, an allophone is a phoneme that shares similarities of pronunciation with a common denominator – a phoneme. More technically, allophones are phonemes, which share a variety of pronunciations with a common phoneme. These varieties are determined by phonetic circumstances such as types of words, morphemes or positions. Ashby and Maidment (2005:189) define an allophone as "A speech sound considered as a positional variant of a phoneme". This means that allophones are variants of a phoneme. A phoneme changes into variants because of the position it occupies in a word or adjourning words, which calls for a slight difference in pronunciation. Such positions may be (i) if the sound occurs at the initial position and (ii) if it occurs at the middle of a word (iii) if it occurs at the end of a word; and (iv) the type of sound (vowel or consonant) that bounds it at the right or left hand.

From the above, I can further explain to you that the allophones are variants of a phoneme realised according to the phonetic environments. They are mutually exclusive, occurring in complementary distribution. Let me exemplify this summary with the phoneme, /t/ and some of its variants (allophones).

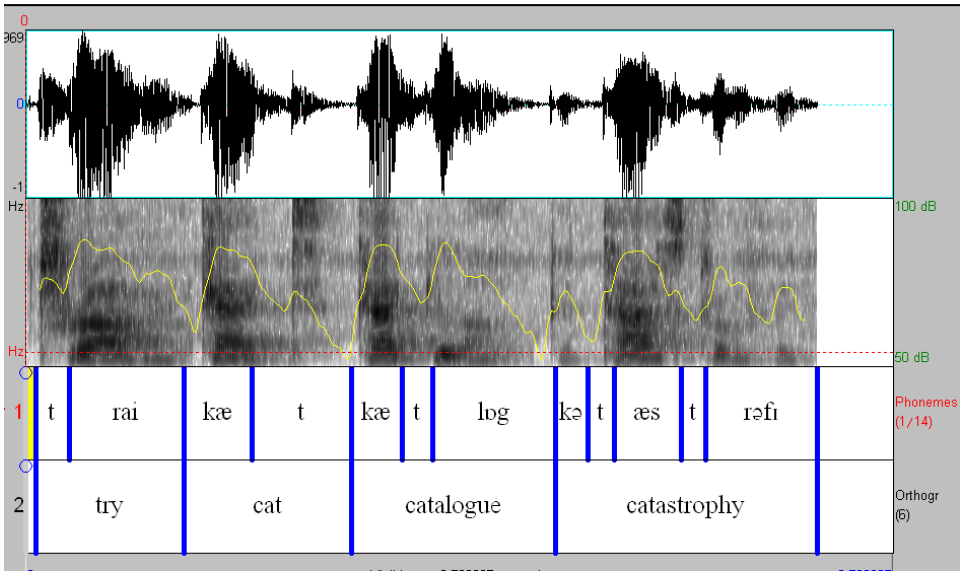
/t/	/t^h/	aspirated as in teach
	/t/	unaspirated as in water
	/t^n/	nasalize as in tin
	/t^w/	labialised as in twice
	/t^-/	unreleased as in great

It is clear from the above example that the phoneme we realise as /t/ has, among its variant realisations: /t^h t t^n t^w and t^-/. All these variants are called the allophones if /t/. Although they are allophones of the same phoneme, yet, they do not replace each other without sounding awkward. This is why they are said to be mutually exclusive, that is, there distributions are not completely similar in phonetic environments (Ashby and Maidment, 2005 :139).

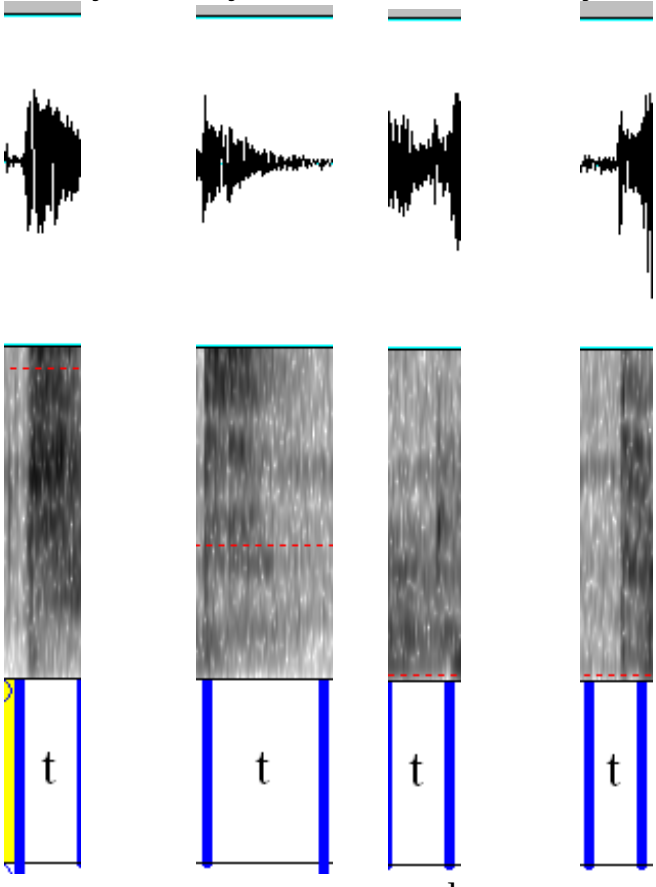
3.2.1 Graphical Presentation of Allophones

There is a way we can prove to you the existence of allophones of the same phoneme so that you do not only "say" them but you can also "see" them. This is what we call acoustic evidence used to accompany our theoretical explanation. One way we can achieve this is to analyse the speech of a person with the aid of a linguistic programme; this one is called PRAAT. You shall get to learn more of PRAAT in the future if you are really interested. But it is suffice that I make my explanation to you more clearly using the programme.

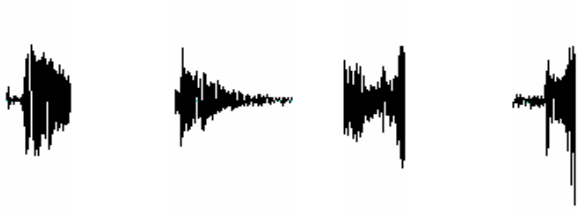
Let us, again, take the example of the voiceless plosive fricative of an English word /t/; and illustrate with these four words, namely, try, cat, catalogue and catastrophe. When you have analysed each of the words with PRAAT, the picture you get are as represented below.



If you concentrate your attention on the waveforms that appear at the top of the Object, on the first four /t/, you will see that they are dissimilar. Let me cut them out for you to study more closely so that you can be sure that they are not really similar.



try cat catalogue catastrophe



/trai/ /kæt/ /kætəlɒg/ /kætəstrəfɪ/

For the purpose of the graphical presentation of allophones, I have acoustically analysed each of the four words with PRAAT version 5.0. as done by Jolayemi (2006: 141-157). The outcome of this are these 2 PRAAT Objects which you see above, one showing the four words, the other isolating the occurrences of /t/ showing four allophones of /t/. At the top of the first window object is what is called the oscillogram, which shows some diagrams we call the waveforms that represent the sound energy of what is pronounced. While below the object is the spectrogram of the four words, which, again indicates the acoustic sound energy of the words. The four words that I have acoustically analysed were pronounced by me, whose pronunciation is not close to a native speaker's but which can be considered that of the Educated Nigerian English (ENE) and who has had the opportunities of trainings in phonetics and phonology, and teach English phonetics and phonology to University students for about two decades.

3.3 EXPLICATION OF GRAPHICAL PRESENTATION OF ALLOPHONES

I shall often refer you to the analysis in 3.2.1 as I continue this discussion of allophones.

The acoustics of /t/, like most plosives, involves (a) a silent period (b) the closure point (c) the burst period and (d) another silence. This is the ideal realisation of /t/, which is not often so in English speech making. Let us take the first word:

3.3.1 try /trai/

Because, it is at the initial position (begins the word), we are able to have a period of silence in preparation for the closure of the tip of the tongue and the alveolar. But if you practice to pronounce the word, you will realise that you are unable to burst the /t/ as /r/, another alveolar sound, takes its position.

Because, we are unable to burst the /t/ as a result of the succeeding consonant, this time /r/ let's call this type of /t/ as /t/r/. As proof of this look at the first waveforms that could not burst (as compared with the second).

3.3.2. Cat /kæt/

/t/ in this word occurs in a reverse position to /t/ in example 1. It is preceded by a vowel and which sound does not compete with the position of articulation with /t/, we are able to have a period of silence for enough breadth to close the articulators. And because there is no impeding sound after is able to burst and have a period of silence, thereby taking a full course of /t/. You can see evidence of this in the acoustic representation of /t/ in the second word. Because it has taken its full course of pronunciation, let's call this /t/ as /$_{full}$t/.

3.3.3. Catalogue /kætəlɒg/

The /t/ in this word begins with a silence and has an opportunity to close. It is not able to burst at all but ends up in a lateral position of the succeeding consonant /l/. You will soon be introduced to a concept called assimilation process. This is what can be said to have happened to the burst of /t/ in catalogue as it has been assimilated by lateral position of the succeeding /l/ giving us lateralised /t/. Thus let's represent this type of /t/ as /t^{l}/. By the way, do not forget that the second vowel in this word /ə/ is usually swallowed up in speech, giving catlogue /kætəlɒg/ instead of catalogue /kætɒlg/.

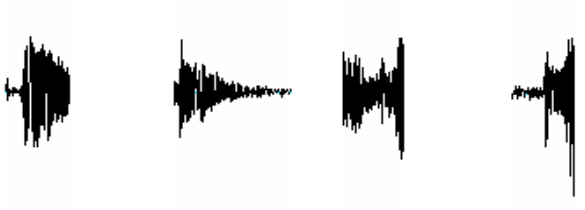
3.3.4. Catastrophe /kætəstrəfɪ/

If you will try and pronounce "try" noting the manner and position of /t/ there and pronounce "cata". If you are able to pronounce cata correctly almost swallowing the vowel between "c" and "t', you will realise something like /kæt/, which is similar to what a native speaker will probably say. Therefore, the occurrence of an open vowel sound immediately after this /t/ has enabled us to now act only a full realisation of /t/ but also a long and almost aspirated /t/. Let's, therefore, represent this in this same manner as IPA, /t^{h}/.

In summary, you can clearly and unequivocally realise that the phoneme /t/ has grown about four variants, namely /t^{r}/, /$_{full}$t/, /t^{l}/ and /t^{h}/. All these phonemic variants of /t/ are called allophones.

4.0 SELF ASSESSMENT EXERCISE (SAE)

i. Define minimal pairs. ii. Write two examples of minimal pairs each of vowel and consonant sounds, different from those in this unit.
ii. Explain what allophones are using English sounds.



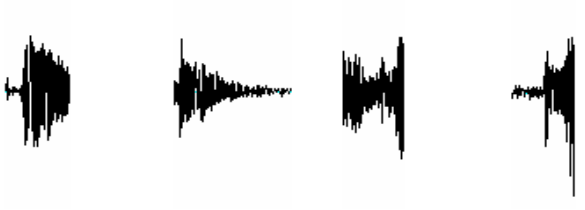
/trai/ /kæt/ /kætəlɒg/ /kætəstrəfɪ/

5.0 SUMMARY

You have learnt, in this unit, what allophones are especially to the users of English as a second language. You have also seen several examples of allophones, both in free variation and complementary distribution. I also tried to bring the topic closer to your understanding by giving graphical illustrations that you can "actually see", using PRAAT.

6.0 TUTOR MARKED ASSIGNMENT (TMA)

Explain the four figures below and show how each represents an allophone of the English (t)



/trai/ /kæt/ /kætəlɒg/ /kætəstrəfɪ/

7.0 REFERENCES/READING LIST

Ashby, Michael & Maidment, John. (2005). *Introducing phonetic science*. Cambridge: Cambridge University Press.

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UNIT 2 ENGLISH SOUND CHANGE I

CONTENT

1.0 INTRODUCTION

We are moving to another environment mediated topic for the determination of the behaviour of allophones. In this section, I will discuss the allophones that occur at free variation, and those which are in complementary distribution. I will also explain to you the importance of studying the behaviours of allophones in English language sound system, especially, as 2nd language learners of English.

2.0 OBJECTIVES

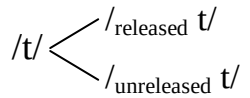
By the end of this unit you will be able to:

- define free variation
- identify allophones that are at free variants
- gain more knowledge of the behavioural pattern of allophones
- define complementary distribution
- discuss what complementary distribution is,
- give examples of allophones that are in complementary distribution
- explain the importance of the studies of allophones in the English phonology.

3.0 MAIN CONTENTS

3.1 FREE VARIATION IN ENGLISH SOUND SYSTEM

While discussing the previous section, I gave an example of a word cat (example 3) suppose I say “the cat”, I have a choice to fully release the last consonant of the phrase /t/ or to stop at the last closure of the articulator of the phoneme, and not release or burst it. In that case, I have pronounced two different types of /t/, one released, the other not released. This can be expressed thus:



When you are in a phonemic environment where two different allophones can replace each other without altering the meaning of the word, the allophones are said to operate as free variants.
Let us consider more examples.
Do you notice that /k/ in the following words have shades of phonemic pronunciation?

kill, card, king, kin

Try to pronounce the words several times. What do you notice? You may use your mirror to try and see the points where the tongue strikes the velar. You can equally notice the shape of your lips and jaw, and how wide or close they are at the inception of each of the words.
Having done all this, you would then have noticed that:

a. the pronunciation of /k/ in each of the words have been influenced by the succeeding vowels.
b, the points of contact of the articulators recede into the mouth as each word is pronounced, such that /k/ in "kill" is closer to the middle of the mouth, while /k/ in "kin" is farthest from the middle of the mouth. All the allophones of /k/ in these environments are considered to be at free variation to one another.

3.2 COMPLEMENTARY DISTRIBUTION

Unlike the previous Unit of the Module, where two allophones can appear in the same environment, as free variation, there are other allophonic environments. An example is /l/ in "clearly". You would notice the pronunciation of the two occurrences of /l/ in "clearly". The preceding consonant /k/ of the word has debilitated the full realisation of the first /l/, whereas the second is fully realised. In comparison, with the realisation of /l/ in "lowly", the two occurrences of /l/ in "lowly: are fully realised, are therefore the same phoneme, not allophones. But the case of /l/ in "clearly" has exhibited an allophonic environment where the two allophones cannot co-occur in the same environment. This is because they have exhibited a distinctive allophonic pronunciation. Such allophones of the same phoneme but which cannot occur in similar phonemic environment are said to be in complementary distribution to each other.

Another example to illustrate the term "complementary distribution" is the word "nine". While /n/ is clearly heard in the first occurrence, the second occurrence is faintly heard; and

neither can be interchangeably used, lest one sounds funny. This is why O'Connor (1982: 177) has defined complementary distribution as "Allophones which never occur in the same environment".

3.3 IMPORTANCE OF ALLOPHONIC STUDY IN ENGLISH PHONOLOGY

As hinted at the beginning of this module, the knowledge of the existence of the allophones of the English phonemes is a big step to learning the English phonology. One major insight into this study is our knowledge that allophones of a phoneme can never be confused with another phoneme. This is because, by the nature of allophones, they are not capable of changing the meaning of a word. The moment there is a change in meaning should they be interchanged, then the sounds are not allophones but indeed different phonemes. For example in "boat" and "goat" /b/ and /g/ can never be thought of as allophones as they have given rise to entirely two different words.

Also, allophones cannot change the syntactic class of a word. For instance, /z/ in "sneez" and "sneezes" /sni:z/ and /sni:ziz/ cannot be said to be allophones. It is merely a repetition of the same phoneme /z/. Furthermore, our knowledge of many allophones of many English phonemes increases our ability, as users of English as a second language to speak English more correctly. This is because, as our awareness and identification of allophones of phonemes increase, so is our consciousness of appropriate use in run-on utterances. Although many allophones can occur as free variants, we often sound odd when we mix them. We even sound odder when we mix the ones at complementary distribution. Although we may be intelligible to the other users of English across the world, we may certainly not be acceptable. Lastly, your knowledge of the allophonic discrimination further enhances your knowledge of phonemic description of English.

4.0 SELF ASSESSMENT EXERCISE (SAE) I

i. Define free variation
ii. Explain, with illustrations, how /d/ in "my card" can form a set of allophones that are in free variation.
iii. Give 2 more examples of phonemes, which are at free variation.

SELF ASSESSMENT EXERCISE (SAE) II

i. Complementary distribution is defined as phonemes that never occur in the same environment. True or False.
ii. Give two examples of words and indicate the allophones in each word that you think are in complementary distribution.
iii. With 2 examples each, compare and contrast free variation and complementary distribution.
iv. With detailed examples, what is the importance of the study of allophones using examples of the English sounds?

5.0 SUMMARY

In the unit, I have explained to you what free variation is. It is described as two different phonemes that can replace each other in the same environment without constituting a hindrance to the meaning of the word where they have occurred, and which the native speakers of English do not consider incorrect. Also, in this unit, you have learnt that complementary distribution is the study of allophones whose distribution cannot be permitted to replace each other.

6.0 TUTOR MARKED ASSIGNMENT (TMA)

a. What do you understand by free variation? (b) With detailed examples, discuss complementary distribution.

7.0 REFERENCES/READING LIST

Ashby, Michael & Maidment, John. (2005). *Introducing phonetic science*. Cambridge: Cambridge University Press.

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UNIT 3 ENGLISH SOUND CHANGE II

In English, as many other languages, speech sounds in utterances often behave differently when they form a word, even though words are used to make utterances. The main reason for this different behaviour is the inherent need to maintain internal cohesion and rhythm. This is one significant difference in the written and oral forms of a language. In a language like English, the need to maintain a constant timing (or rhyming) scheme, referred to as metrical system technically often give rise to a number of processes that make a phoneme take on a different behaviour in an utterance or a connected speech. This is often being referred to as phonological processes. Oyebade (2004: 60) defines this as "sound modification's mediated by the need to maintain euphony in a language or to rectify violations of well-formedness constraints in the production of an utterance". In this module, we shall attempt to discuss such phonological processes as: assimilation, deletion, elision, insertion, coalescence and liaison. We shall illustrate each of these with examples drawn from the English language.

CONTENTS

1.0 INTRODUCTION

In this Unit, you will be taken through some sensitive parts of the English sound system that often betrays proficiency in the English phonology, especially as users of English as a second language. They are an orally mediated system, which clearly delineate the written English from the spoken. They are parts of the phonological processes that manifest at connected speech level.

2.0 OBJECTIVES

By the end of this unit, you will be able to:

- Define and discuss phonological processes that affect changes in the sounds of English.
- Discuss various sound change processes in the English phonology.
- Give examples of phonemes that are changed by phonological processes.

3.0 MAIN CONTENTS

3.1 Assimilation
3.2 Deletion
3.3 Elision
3.4 Insertion
3.5 Coalescence
3.6 Liaison

3.1 ASSIMILATION

3.1.1 DEFINITION AND DISCUSSION OF ASSIMILATION

This is the process whereby a phoneme changes from it normal pronunciation in isolation or in a word to another phoneme that is close to it in manner or place of articulation in a continuous utterance. Assimilation process is a function of the connected speech or what we regard as the colloquial speech. Our use of the English language in the spoken form motivates a phonemic continuum that abridges phonemic realisation of an utterance. As a result, partly of time exigency and phonetic cohabitation,

contiguous phonemes exercise some sort of influence on each other. This influence causes a sound to change from it original form or when it is used in citation – in isolation. Some other conditions that motivate this change, as said, are: (a) The phoneme is no longer used in isolation (b) the phoneme is not just used in a word where it occurs (c) The word in which the phoneme occurs is used in an utterance – phrase or sentence (d) the phoneme that is assimilated shares some phonetic features with the phoneme that has assumed or assimilated it (e) the phoneme changes because of the articulatory properties or features (manner and place) of the contiguous (next or immediately succeeding) phoneme. Let me exemplify, with the assimilation of /n/ by /m/ in "Nine boys." Nine will be pronounced /nain/, the second consonant /n/ maintaining its normal sound as alveolar nasal in the word. But in the phrase "Nine boys," the pronunciation of the second /n/ changes to the bilabial nasal /m/ conditioned by the bilabial plosive /b/ of "boys" that is contiguous to /n/ at the right hand, although it not a plosive sound. Thus, the initial phrase written as "Nine boys" is expected to be pronounced as /naimbɔiz/; where /m/ has assimilated /n/. In a similar manner, "Ten men" /tɛn/ and /mɛn/ will become /tɛmɛn/, /m/ assimilating its nasal counterpart /n/. Another instance is the assimilation of /t/ by /k/ in "cat game". Here, the phrase, when pronounced individually, will be /kæt/ /geim/ but when as an utterance becomes /kækgeim/.

Gimson (2001: 281) identifies three main types of phoneme assimilation. They are called progressive or perseverative assimilation, regressive or anticipatory assimilation and coalescent assimilation. A phoneme is said to have undergone the progressive or perseverative assimilation process when the pronunciation of the phoneme is conditioned by the immediate successful phoneme i.e. the phoneme by its immediate right. Gimson describes the process as when "one phoneme markedly influences the following phoneme". Let me make this thesis clearer by an illustration. The commonest one, I can give you is the change in pronunciation that occurs to the voiceless velar plosive /k/, which changes to nasal voiceless velar plosive /k)/. The assimilation occurs in words as: blink, stink and pink.

As the name implies, regressive or anticipatory assimilation is a process where the succeeding phoneme constitutes the factor

that causes the change in the previous one. In other words, the phoneme at the right hand side influences the realisation of the immediate left hand sound. This condition is described by Gimson, on the same page quoted above, as "features of one phoneme are anticipated in the articulation of the preceding phoneme"; and these are, by far, the most common of the processes of assimilation. Let me illustrate this type of assimilation with /n/, which changes to /N/ under the influence of the voiceless velar plosive, /k/. This occurs in words such as tank, think, bank and thank. /ŋk/, /ɵɪ ŋk/ and /bæŋk/ and /ɵæŋk /. In each of these words, you will notice, /n/ changes to /ŋ/ because of the anticipatory articulation of /k/, which indeed, precedes /n/.

The third type of assimilation that I have mentioned is the coalescent assimilation, which Gimson says occurs when "a fusion of forms takes place". This process causes a sound to change by merging two contiguous phonemes into another phoneme different from the two coalesced sounds. A typical example is televise + ion. In the interaction between /s/ and /ɪ/, that occurs while turning the verb to the noun form, results in /ʒ/, which gives /tɛlɪvɪ ʒn/ or /tɛlɪvɪ ʒən/. I shall give you more examples at the appropriate time of my discussion of coalescence.

3.1.2 Copious Examples of Assimilation

This is another aspect of the English sound system that often presents difficulty to the second learner of the language. Therefore, let me direct you to a website on the internet where you source for more copious examples of assimilation. The site is: www.wikiemedia.com., from where I have made the summary below.

1. /t/ changes to /p/ before /m/, /t/ or /p/ e.g. basket maker, mixed bag, cigarette paper.
2. /d/ changes to /b/ before /m/, /b/ or /p/ e.g. good morning, blood bank, blood pressure.
3. /n/ changes to /m/ before /m/, /b/ or /p/ e.g. iron man, open book, chicken breast.
4. /t/ changes to /k/ before /k/ or /g/ e.g. short cut, fat girl.

5. /d/ changes to /g/ before /k/ or /g/ e.g. cold cream, had gone.
6. /n/ changes to /ŋ/ before /k/ or /g/ e.g. town crier, Action Group.
7. /s/ changes to /ʃ/ before /ʃ/ or /j/ e.g. nice shoes, this year.
8. /z/ changes to /ʒ / before /ʃ/ or /j/ e.g. rose shop, his young.
9. /θ/ changes to /s/ before /s/ e.g. bath seat, both sides.

Like it was to me the first time I was taught the assimilation process in English at my undergraduate days, I am certain, some of the processes above will sound to you rather strange, and indeed impossible or incorrect. That is the way it sounds to every other learner of English as a second language studying assimilation in English, perhaps, for the very first time: "strange, impossible and incorrect". But that is what the native speakers say. So, it is you that actually sound strange, impossible and incorrect when you speak English like written English. This is why native speakers often describe our speech as "bookish"! What I am trying to say is that this is one aspect of the English phonology that requires great effort to learn. You must be conscious and conscientious at it, too, so that your manner of speaking in English will not be said to be bookish.

3.2 Deletion

This section discusses a phonological process of deletion, which is another important sound change in connected speech.

This is a phonological process that omits a phoneme in a sequence of words at the boundary positions i.e. between two contiguous words. When such omission involves a consonant, which often happens, we call the process deletion. This is because a hitherto consonant at the boundary of two words has been completely deleted such that we do not hear it pronounced in the sequence of the words. It is an essential part of the spoken connected speech which makes it, as said earlier distinct from the written or "book English". It also marks a characteristic of a rapid use of the language.

In obedience to the English phonological rules, certain consonants from a sequence of certain words are deleted. Let's take some examples from Gimson (1980: 293 – 294).

1. /t/ deletion in a sequence of continuant sounds preceding it. Examples of such continuants are /s/, /f/, /s/ preceding /t/ or continuant /s, f, ʃ+t/ in this case, /t/ will be deleted. For example, /t/ is deleted in words such as "next day" to give /nɛks dei/ instead of /nɛkst dei/; "last chance" is pronounced /læs ʧæns/ instead of /læst ʧæns/, and /lɛf təːn/ is pronounced instead of /lɛft təːn /.
2. /d/ deletion in a sequence of continuants such as: /n/, /l/, /z/, /ð/ and /v/. When such sounds precede /d/ before joining another word, /d/ is deleted in the environment. Therefore "thanked me" becomes /θæŋk mɪ/ and not / θæŋkt mɪ/, and and "picked one" becomes /pɪk wʌn/ and not /pɪkt wʌn /.

In the two instances above, /t/ and /d/ have been omitted. These are just few instances of the phonological process of deletion in English.

3.3 Elision

In this section, I am going to discuss another phonological process involving omission of a phoneme in colloquial English so that you will be able to define and discuss elision with good illustrations; and more importantly, be able to use them in your daily speeches in English.

Unlike deletion in the previous section, which involves consonant sounds, elision is a phonological process involving the omission of a vowel sound in a sequence of sounds at the boundary juncture of an utterance. The commonest elision occurs to the weak forms of the vowel sounds in English. For example the initial and final weak /ə/ in /ənʌθə mæn/ can be elided in a rapid speech when saying "another man", giving /nʌθmæn/. Even at the word level without a boundary with another word, certain vowels which occur at the orthographical level are elided at the phonological level. An example of such a word is found immediately after the comma in the last sentence

above, “certain”. Does it ever occur to you, as a learner of English as a second language, that what looks like a diphthong /ei/ in “certain”, which most of us pronounce as /sɜ:tein/ is actually /sɜ:tn/? What looks like a diphthong has been completely elided here and we can find no vowel between /t/ and /n/! To be sure, check your pronouncing dictionary. If you will say the following correctly, you will find that the vowels at the initial position of the second words are elided: (i) not alone (ii) run along.

3.4 Insertion

In this section, I will continue the discussion of the phonological processes that cause sound change by explaining, this time, not a process of omission, but indeed, of insertion. This is the term used to refer to the phonological process that inserts a phoneme in continuum of a word. More common in English language is the insertion of a vowel between a consonant clusters. In English, it is often not acceptable to allow a realisation of certain consonant clusters in a word. Another technical term that is used to describe the insertion of a vowel sound is epenthesis. Let us consider one epenthetic vowel that occurs in two instances: /ɪ/. In the past tense formation of: board, plead and guide, which would have been realised as boarded /bɔ:dd/, pleaded /pli:dd/ and guided /gaidd/ respectively, a high vowel /ɪ/ has been inserted between the cluster of two alveolar plosives. This is to make it acceptable in the English phonological formation giving us: boarded /bɔ:dɪd/, pleaded /pli:dɪd/ and guided /gaɪdɪd/ respectively.

The same sound /ɪ/ serves as a cluster breaker, in the plural forms of some other words. Let us use Oyebade’s (2004: 74) examples: fox, box, church, judge and ash. But for the epenthetic /ɪ/ inserted between the cluster of two sibilants of the root and plural morpheme, the words would have been unacceptably rendered as: foxs, boxs, churchs, judgs, and ashs.

3.5 Coalescence

My objective in this section is to define and discuss coalescence as a phonological process, which often causes a change in the sound system of the recipient utterance. It is an elaboration of what has already been discussed in 3.1 of coalescence. I also aim at assisting you to learn to use the process of coalescence in your daily connected speech.

If you remember the contents of section 3.1 of this unit where assimilation process was discussed, you can easily transfer your knowledge to quickly grasp this new topic. In the process of assimilation, one phoneme assumed the position of another different phoneme, and the assimilated phoneme disappeared altogether. You would also notice from the illustrations that the last sound of the preceding word was always assimilated by the first sound of the succeeding word. But in this case, the process of coalescence makes the two contiguous boundary phonemes to disappear or merge into a new phoneme altogether. The two adjoining phonemes can, therefore, be described to have coalesced into another phoneme.

In English, there are many examples of C + V coalescence. In other words, the consonant (C) of the root of a word and the first vowel (V) of the suffix merge to form another phoneme, as these examples show:

i. /t/ in inflate /infleɪt/ and /ɪ/ in -ion suffix merge to /ʒ/ in inflation /infleɪʒən/.
ii. /s/ in oppress /əprɛs/ and /ɪ/ in -ion suffix merge to /ʒ/ in oppression /əprɛʒən/.
iii. /d/ in persuade /p sweɪd/ coalesced to /ʃ/ in persuasion /pəsweɪʃn /.
iv. /z/ in diffuse /daɪfju:z/ coalesced to /ʒ/ in diffusion /daɪfju:ʒn/.

You will observe that the alveolar consonants, /t s d z/ have merged with a front high vowel /ɪ/, which is produced at the palatal region of the mouth. The resultant coalesced consonants, /ʃ ʒ/, we are not surprised, are palato-alveolar.

A few other examples of some English phonemes coalescing into another one are:

v. /ə/ and /əʊ/ to become /ɜ:/ in "go away" əg ʊ weɪ/, which becomes ge away /gɜ: weɪ/ and
vi. /aɪ/ and /ə/ in "try again" /trai əgeɪn/ coalesce to /a:/, and become tra gain /tra: geɪn/ (Gimson, 1980: 293).

3.6 Liaison

This is the last phonological process, which we know also leads to a sound change in English, we shall learn in this course on the phonology of English. This discusses the process that involves linking of two words where the first ends in a vowel and the second starts with a vowel in connected speech. At the end of the topic, you will be able to define and discuss liaison as a phonological process; identify liaison phoneme in connected speech; and used liaison in your speech.

You would probably be familiar with the word "liaise" as you often hear in "liaison officer". What this officer does, in the practical sense, is to go between one person and the other. He is a kind of officer that operates in the middle of two people or organisations; he is commonly referred to as "middle man" in Nigerian. In English, there exists such "middle men" in the guise of some phonemes, which I can suggest to you for the purpose of explanation to call "middle phonemes". This is because, as earlier said, such phonemes liaise between one two words in connected or rapid speech.

Liaison, as a phonological process, partly seems to bear some relationship with insertion, which, as you have learnt, inserts a phoneme to break the occurrence of clusters. But in this case, for most native speakers of English, a necessary /r/ is inserted between the boundaries of two words that have vowel conjunctions. In other words, /r/ is said to liaise between the boundaries of the vowel conjunctions, the first of which ends in a vowel and the second begins with a vowel. The inserted /r/ is said to liaise the two words, making the speech smooth to speak.

Let's examine this example:

i. My father and mother are far away

Ordinarily, this will transcribe as:

/maɪ fa:θə ænd mʌθə ə fa: əweɪ/.

Using the phonological process of liaison, it is now transcribed or pronounced as:

/maɪ fa:θə r ən mʌθə ə fa: r əweɪ/.

In the example, the inserted /r/ serves as a liaison phoneme. Let us consider another example of this nature:

ii. higher and higher,

which is transcribed as /haɪə ən haɪə/, but which becomes /haɪə r ən haɪə/, because of the liaising /r/.

4.0 SELF-ASSESSMENT EXERCISES (SAE) I

i. What is assimilation in English phonology? Differentiate between progressive and regressive assimilation.
ii. By transcription, demonstrate how you will pronounce:
    (a) 4th semester (b) these sheep (c) in concert (d) good cake (e) 1st Class.

SELF-ASSESSMENT EXERCISES (SAE) II

i. Define deletion.
ii. What group of phonemes does deletion mainly concern?
iii. Apart from the examples given above, write out three (3) more examples.

SELF-ASSESSMENT EXERCISES (SAE) III

i) not alone (ii) run along.

Transcribe the above two examples to show how you would say them.

SELF-ASSESSMENT EXERCISES (SAE) IV

i. a. Define the term insertion?
    b. In what way is it related to epenthesis?
ii. Transcribe the last five words in 3.0 used as illustrations in this unit to reflect their acceptable pronunciation.

SELF-ASSESSMENT EXERCISES (SAE) V

i. Define coalescence.
ii. Differentiate between assimilation and coalescence.
iii. With the aid of 2 examples, discuss coalescence as a phonological process.

SELF-ASSESSMENT EXERCISE (SAE) VI

What is liaison as a phonological process? Give 3 examples.

5.0 SUMMARY

In this, unit I have:

- defined assimilation as the phonological process that causes a sound change whereby a contiguous phoneme is assumed by its neighbour.
- discussed the two types of assimilation, namely progressive and regressive assimilation,
- explained a phonological process called deletion which mainly deletes the consonant sound at word boundary of some contiguous words.
- discussed another phonological process involving the vowel sound, which is called elision, as a source of sound change in colloquial English.
- defined and discussed insertion - a consonant cluster breaker using a vowel sound.
- explained that the term “epenthesis” is another term for insertion.
- discussed a phonological process that involves the merging of two different phonemes to result into another entirely different phoneme, but one that shares the manner and place of articulation with the coalesced phonemes.
- define and discuss liaison as a phonological process.
- identify liaison phoneme in connected speech.
- use liaison in your speech.

6.0 TUTOR MARKED ASSIGNMENT (TMA)

a. With two illustrations briefly discuss what you understand as assimilation, as phonological processes that affect sound change in English.
b. Differentiate between deletion and elision as phonological processes.
c. "Pipe builder /paip bju:ld/" becomes "pi builder /pai bju:ldə/". Discuss.
d. My grand ma used to tell me that she didn't like, for her breakfast, "buredi".
   What would you think she was trying to say? Explain the process that transformed this word.
c. Write a paragraph of three sentences in English.
   i. Transcribe the paragraph in the "bookish" method.
   ii. Transcribe the paragraph obeying the principle of phonological process of coalescence.

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MODULE 5 DISTINCTIVE FEATURES

UNIT 1 GENERATIVE PHONOLOGY

CONTENT

1.0 INTRODUCTION

Most of the systems of analysing a phoneme that we have used up till now and that we have employed to describe the speech sounds are called taxonomic or phonemic methods. This method of analysing a phoneme is usually attached to the traditional or classical phonologists. This is a legacy of the speech sound analysis inherited from the early day's phoneticians. It is claimed that the phonemic method does not adequately capture the description of a phoneme. It is also argued that the classical description does not tell how and why certain phonemes are realised nor the way they are realised. Lastly, the phonemic method does not explain, clearly enough, why certain realisations are different from the deep structure.

2.0 OBJECTIVES

The objectives of this unit are to explain:

- what generative phonology is
- its major proponents
- its modes of representations and
- some of its rules.

3.0 MAIN CONTENTS

The main contents of this unit will be discussed under the following sub-headings: Child Language, Underlying Representation, Phonetic Representation and Phonological Rules.

3.1 CHILD LANGUAGE

A child, acquiring its native language, is said to often have a limited number of vocabulary items but which it uses to make a limitless number of utterances. This is the major factor that motivates the generative grammarians to want to investigate how a child makes infinite expressions from his finite knowledge of the language. The generative linguists also notice that when a child uses a language differently from the adults, they often know the right thing to say but are hindered by some

physiological problems. One of such problems is the underdevelopment speech organs, especially in the oral cavity. For instance, a child will insist that the adult (in a Yoruba community) says rárá meaning 'no' even when he repeats yáyá (Oyebade, 2004: 10); or lọ meaning 'go' when he says yọ (Jolayemi, 1998: 23). Another example common in the literature is a little girl who introduces herself as Ewika, but gets angry when the guest calls her Ewika. She becomes happy only when the guest calls her Erica, to which she answers, "Yes, Ewika, you siwwy" (siwwy = child language for silly). Thus, it is clear that the child knows the right pronunciation of phonemes even if it says it wrongly. Like the child, the generative linguists notice that even when a statement is wrongfully made by an adult, his hearer is able to understand it. Oyebade (2004:11) gives the instance of a driver who was ordered by the police to take his "car to the par cark", to which the driver adequately obeyed by driving to the car park! Another common example was of a professor of History who queried his student: "You hissed my mystery lesson", to which the student promptly apologised. In spite of this wrong realisation, the student understood that the professor actually meant, "You missed my History lesson"!

From the above, the generative linguists conclude that, to every statement, there must be two structures namely the deep structure or underlying representation and the surface structure or phonetic representation, and that there must be a way of connecting both structures through what they call the phonological rules. These, in essence, are the basic tenants of the generative grammar, specifically to the study of the speech sounds, generative phonology. The major proponents of this theory of analysis especially in the area of phonology are: Halle, (1959), (1962), Chomsky, (1964), Chomsky & Halle, (1968), Postal (1968), Kenstowicz & Kisseberth (1979), Kentowicz (1994), Oyebade (2004) and Jolayemi (2006).

3.2 UNDERLYING REPRESENTATION (UR)

Underlying representation is said to be the form of language expression, that is abstract and that cannot be measured. This is because the representation is deep within the mind of the owner and it is internal, it lies within the brain and competence of the owner. This is why it is often being referred to as deep

structure. It is EVERYTHING that a native speaker knows of his language. At this level of language, everything that has a SIMILAR (invariant) meaning has an IDENTICAL representation. Also, MEANINGS and their forms of REPRESENTATIONS are similar, i.e., there is a one to one relationship. At the underlying level, there are no synonyms. UR resides in the realm of the linguistic competence of the speaker, that is, all that a person has acquired and can generate of his language. It is said to be a kind of representation that is PERFECT i.e. not defective. UR, the generative phonologists say, forms the bank or repertoire from which a speaker draws whenever he wants to use the language. It is my belief that this will become clearer to you as we progress in this unit and illustrate with examples.

3.3 PHONETIC REPRESENTATION (PR)

Phonetic representation is the EXTERNAL manifestation of the INTERNALLY encased UR, which enables the owner of the language to express what he has in his mind to say for the hearer to hear. Because it is an external or outer representation, the generative phonologists also refer to it as SURFACE STRUCTURE. And it is said to be sometimes DEFECTIVE i.e. not perfect because of physiological or psychological factors. PR represents the performance of a speaker, which gives a room for synonyms or alternatives depending on the phonetic context or environment of usage. The main argument of generative phonology here is that a concept at the underlying representation may take different phonetic representations, which tell what actually happen at the surface level. One common illustration in the literature is the concept of NEGATIVE OR NOT. At the UR, i.e. in the mind of the speaker, a negative is a negative or what is not is what is not, the negative has only one concept in the mind. Using the archiphoneme symbol of negation, /N/, the words become iNresponsible iNlegal, iNpracticable, iNbalance, iNtolerance, iNdecision, iNcompatible and iNgratitude. From here, clearly, the word antonyms have shown an invariant pronunciation of the negative prefixes at UR. However, our knowledge of the English language will prove this to be defective because we base our judgment on the phonetic realisation of the negative prefices. These we realise as: irresponsible, illegal, impracticable, imbalance, intolerance, indecision, iŋcompatible

and iŋgratitude; perhaps; only intolerance and indecision look similar to the deep structure realisation.

Let us try and map the UR and PR of each of the pair of the words above.

1.	iNresponsible	iNlegal
	↕	↕
	Irresponsible	illegal
2.	iNpracticable	iNbalance
	↕	↕
	Impracticable	imbalance
3.	iNtolerance	iNdecision
	↕	↕
	iNtolerance	indecision
4.	iNcompatible	iNgratitude
	↕	↕
	Iŋcompatible	iŋgratitude

In this sequence 1 – 4, what do you notice?

Let's start with 1. You will notice that when the blade of the tongue is raised close to the alveolar and you somehow allow the waves coming from the glottis to escape little friction such as we have in /r/ and /l/, the antonym prefix is likely to take the form of the first is a negative or what is not what is not, it has only one concept in the mind. But for its external manifestation or realisation in the real world, certain articulatory features often disallow the concept of negative or antonym to be pronounced in a similar way. For instance at the UR, 'not' can only be added to some words to realise their antonyms. Such words are responsible, legal, practicable, balance, tolerance,

decision, compatible, and gratitude. But the PR of "not" of these words are non-identical as shown: thus ir-, il-, im-, in-, in. From the above, it is concluded that there is no one to one relationship in what we have in the mind (Underlying Representation) and the way we give expression to it (Phonetic Representation). But if this is so, how then does a speaker understand himself? Or worst still, how does a person understand another speaker?

3.4 PHONOLOGICAL RULES

Generative phonologists argue that there must be a way to match the underlying representation of language with its phonetic representation. This is the only way we can show that both the speaker and the hearer share the same linguistic background. Also, there should also be a way to explain the differences that exist in UR and PR. To achieve these two needs, the theory has developed some formal rules called the phonological rules.

Let us return to the concept of antonyms in the examples that I gave in 3.3. There, I said that the underlying representations of antonyms or negatives are invariant or identical, while it is non-identical in the phonetic representation.

Now 2, whose pain is different from 1. You will notice that when a word starts with the voiced/voiceless, bilabial plosive (like /p/ and /b/ the negation sound is the voiced bilabial nasal /m/. Let us jump to example 4, where you will notice that the voiced velar nasal, /ŋ/ is the negation consonant of words starting with voiced/voiceless velar plosive.

Thus, it is possible now to formulate a rule that will explain the differences we observe in UR and PR of most English negations. Let us attempt examples 2 and 4 to generate the basic rule of the generative phonology:

Example 2.

iNpracticable,	becomes impracticable	in the environment where the root consonant is voiced or voiceless, **bilabial**, plosive /b p/.
iNbalance	becomes imbalance	

But in Example 4.

iNcomplete	becomes iŋcomplete	in the environment where the root consonant is voiced or voiceless, **velar**, plosive /g k/.
iNgratitude	becomes iŋgratitude	

What all this means is that, when an expression is still on your mind (underlying level), negation affix is identical. But when you say the expression into the outer world (phonetic level) the expressions become non-identical. This is because the expression at this level are constrained or controlled by the circumstances in the outer environment of the expression, which may be whether the root starts with a vowel or consonant sounds. It may also, as the case of 2 and 4 above, be a difference in the places of articulation, where N becomes /m/ (N ⟶ /m/) when the place of articulation is bilabial, but /ŋ/ when velar. This is summarised as:

A ⟶ B/C – D

This is the basic rule in the generative phonology theory.

4.0 SELF-ASSESSEMENT EXERCISES (SAE)

i. Attempt the analysis of examples 1 and 3 in 3.4 as done for 2 and 4
ii. With examples, explain the terms (a) Underlying Representation
(b) Phonetic Representation
iii. What is generative phonology?

5.0 SUMMARY

In this unit I have attempted to explain to you:

- What a child language is and its relationship with learning English phonology.
- the type of language that we possess in our mind, which forms our competence in the language from where we draw what we use to express our thoughts (UR). It is most, at times, different from the outer realisation.

- outer realisation (PR) are constrained by many factors that exist within the environment of the sound expression of which are: manner or place of articulation, psychological and physiological.
- the phonological, rules which help us to reconcile UR and PR.

6.0 TUTOR MARKED ASSESSMENTS

With adequate illustrations, explain the rule:

$A \rightarrow B/C - D$

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UNIT 2 MAJOR CLASS AND CAVITY FEATURES

CONTENT

1.0 INTRODUCTION

In this unit, I shall further discuss the workings in the Generative Phonology Theory. Specifically, I shall begin to introduce you to the *phonetic features* of the theory, which Chomsky & Halle (1968: 299) say "represent the phonetic capabilities of man". These features represent some technical terms which you can use to describe the English phonemes that border on manner, place, source and process of articulation.

In doing this, I shall only touch the basics of these features, as recorded by Chomsky and Halle's (1968) *The sound pattern of English* popularly referred to as *SPE*, the major authorities in this area. Together with units 3, 4 and 5, we shall be ready to formulate the distinctive features matrix that you often read or hear, which occupies Unit 6. Also, these distinctive features are usually described by a two point antonym adjectives such as: voiced – non voiced (non voiced is what you normally call voiceless), high-non high (low); round – non round, spread – non spread; open – non open (close); etc. You must take note of these antonymic adjectives from now till the end of this module.

Also, in the continuation of the workings of the generative theory of phonology, I shall further explain more phonetic features within the oral and nasal cavities. (You see that you must learn your organs of speech very well). These cavity features are derived from the specific organs of speech in the mouth and the nose namely, the tongue, palate, lips and nose.

2.0 OBJECTIVES

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

- Define and discuss sonorant as a distinctive feature for the description of the English phonemes.
- Define and discuss obstruent as a distinctive feature for the description of the English phonemes.
- Identify and describe sonorant and obstruent as distinctive features of the English phonemes.

- explain the phonetic features that border on the organs of speech such as: the tongue, lips and nasal.
- identify and describe the English sounds produced by theses organs of speech using the terms in the generative phonology theory

3.0 MAIN CONTENTS

Meanwhile, let's start with what is referred to as the major class features namely: Sonorant, and consonantal (obstruent). These are the features that can be used to describe not only the English sound system but all the human speech sound system. This is why they are called the major class features.

Also, in 3.3-3.8 the main contents of the section is the examination of the phonetic features of the sounds produced in the two cavities of sound making namely; oral and nasal cavities. The features to be discussed are: posterior, coronal, tongue body features, lateral, rounding and nasal. But first, let us start up with major class features as explained in 3.1 and 3.2.

3.1 SONORANT SOUNDS

Sonorant is a term used to describe the activities that take place when the vocal folds are shut and there are continuous vibrations at the larynx. During this process, the sounds that are made are usually voiced and oral. These cover the vowel sounds and the voiced consonant sounds. So all the English vowels such as /ɪ i: æ ɛ a: ʊ …/ are sonorant sounds. Also all the English voiced consonants such as /b, d, g, v, θ, m, n, j/ are sonorants. The antonymic adjective in the generative theory used to describe the sounds that are not in this category is nonsonorant or obstruent or consonantal, which you call voiceless consonants.

3.2 CONSONANTAL (OBSTRUENT) SOUNDS

From 3.1, if you are careful, you will notice that the category of sounds here is divided into two: those sounds that are obstructed at the oral cavity but are accompanied by vibrations. These are the voiced consonants that we refer to in 3.1 as sonorants, e.g. /b, d, g, m, n, j/. The rest sounds with obstructions in the month which are not accompanied by vibrations are referred to as

obstruent sounds. Examples: /p t k d s ð …/. You often call the sounds voiceless consonant sounds. Those sounds that are not in this category are called non-obstruent sounds.

From the above, it can be concluded that the human speech sounds may be referred to as sonorant e.g. ɪ i: æ b, j/ or non-sonorants such as /k, t, , s/, which are obstruent.

3.3 POSTERIOR

This is a palate feature. You will recall from your previous knowledge that the palate is the long, wide, slippery region at the upper part of inside of your mouth. It is often called the roof of the mouth, which begins at the root of the upper teeth and stretches through the velum to the inside your mouth. If you really like to take a tour of the palate and other organs of speech, you can find and read chapter three of Ashby and Maidment (2005: 33 – 50). But in summary, the beginning of the palate is called the alveolar, then, you climb a hill called the alveolar ridge, which lands you at the hard palate. From there you travel a little over the hard palate region and get to the soft palate or velum. This further stretches inwards your mouth until you get right to the end of the journey at which point is called uvula. The area between the soft palate and uvula is called the posterior region. Any sound produced with a constriction or obstruction of free flow of air at this particular region is called a posterior sound. Can you try to pronounce: kind, guide and hide? While doing so, take a particular attention of where the first consonant of each of the words is produced. If you get it, then you are in the posterior region and those sounds are of course posterior sounds. Any sound that does not fall into this category of sounds is described as non-posterior or anterior such as the bilabials, alveolars and dentals.

3.4 CORONAL SOUNDS

Coronal is the feature used to describe the sounds that are produced with the flat part of the tongue called the blade. This starts from the tip of the tongue to almost half of the tongue. You must know that the tongue is said to be at the neutral position when it is not moving up nor down. This occurs when the tongue is at the resting position such as when you produce

the English sound of /ɛ/ as in “bed”. Any other sound that involves the movement of part or the whole of the tongue is a coronal sound, which may be a sonorant or an obstruent. You will notice that many English sounds are coronal, but all bilabials and labio-dentals are non-coronal, like any other sound not produced with any part of the tongue. To know the examples of the English sounds that have the coronal feature, try and roll your tongue in your mouth and produce the English sounds that involve the movement or the use of the tongue. This experiment will yield coronal sounds such as: /θ ð s ʃ l n r z t d k/.

3.5 TONGUE BODY FEATURE

This is another coronal feature that involves the movement of the whole of the tongue. It is a directional feature that describes the direction of the movement of the tongue. The moves from the neutral position towards the roof of the mouth in which case we say that sound produced is a high sound. If the tongue moves to the opposite direction, we say that it is a low sound, thirdly, when the body of the tongue is retracted or pushed towards the back of the oral cavity, we say that sound is back. Any sound that does not fall into any of these three categories is described as non-high, non-low or non-back respectively. Practice the movement of the tongue into these three directions and note which of the English sounds will fall into each of the three categories.

3.6 LATERAL FEATURE

This is another coronal sound, because it involves the use of the tongue. But the process of producing a lateral sound involves the tip of tongue gummed to the anterior region (palato-alveolar). While at this point, the air coming from the lungs is allowed to escape out of the mouth through the two narrow spaces by the two sides of the tongue. One main example of lateral in English is /l/ as in ‘lie’. There are not many examples in English. Any sound that falls outside this category is called a non-lateral sound.

3.7 ROUNDING FEATURE

The phonetic feature called rounding depends solely on the two lips, when they partially or wholly form the letter "O". At this time, the lips may be partially closed or half-open. There are no many sounds in English that have the rounded feature, just a few soronants such as /ʊ u: ɒ ɔ:/, a number of and glides such as /ɑɪ ɑʊ ɔɪ j w/. All other sounds not in this category are described non-rounding or non-rounded.

3.8 NASAL FEATURE

Nasality is a feature of mainly the nose as this is the chamber or cavity which a nasal sound undergoes during production. For all other sounds, the velum is raised, thereby, allowing the air from the lungs to escape through the oral cavity – the mouth. But in the articulation of the nasal sounds, the velum is lowered thereby shutting the path that goes into the mouth so that the air coming from the lungs can only escape through the nose. This is how such sounds are named nasal – because they pass through the nostril and not the mouth. There are only three known nasal sounds in English: /m/ with a supporting closure by the two lips (bilabial), /n/ with a supporting closure between the alveolar and the tip of the tongue, and /ŋ/ whose supporting closure at the post velar. All other sounds outside this category are non-nasals.

4.0 SELF-ASSESSMENT EXERCISES (SAE)

i. List two major classes of the phonetic features
ii. (a) What are sonorant sounds?
    (b) Give five (5) examples in English words
iii. (a) What are consonant sounds?
    (b) Give five (5) examples of English words.
iv. List all the organs of speech mentioned in this unit.
v. With many examples in English, discuss the coronal sounds.
vi. What do you understand by rounding?
vii. When the velum is lowered, some specific sounds are about to be produced, with examples from English, what phonetic feature is called such sounds?

5.0 SUMMARY

In this unit, I have attempted to introduce you to some terms in the generative phonology. These terms are the phonetic features realisable in the human speech sounds including the English sound system. Specifically, I have discussed the two major class features and the major cavity features namely:

- the sonorant sounds, which are the vowel sounds and the voiced consonants sounds,
- the voiceless consonant sounds, which are mainly referred to as obstruent.
- the posterior region sounds produced anywhere the palato-alveolar region such as /k g h/
- the coronal region where sounds are produced by the movement of the tongue such as /ɵ, ə , t d/;
- the tongue body movements where sounds are produced at the high, low and back positions such as /i: ʊ k/ respectively;
- the feature that allows the air escape at one or the two sides of the blade of the tongue while its tip remains stuck to the alveolar; lateral such as /l/ and its allophones
- rounded feature which is produced by the rounding of the two lips such as /u/; and
- nasals because the air that forms them escape through the nose. The three examples in English are /m, n, ŋ/.

6.0 TEACHER MARKED ASSESSMENT

i. Some sounds are said to be both sonorant and consonant. With copious examples in English, discuss why they are so described.

ii. With the aid of copious illustrations from the English language, discuss the cavity phonetic features.

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UNIT 3 MANNER OF ARTICULATION FEATURES

CONTENT

1.0 INTRODUCTION

This unit is another step into further discussion of the phonetic features of the generative theory, which borders on manners of articulation. This unit will be discussed under the following sub-topics: continuants, release features and the feature of tense.

2.0 OBJECTIVES

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

- Identify and discuss sounds that are referred to as continuants
- Identify and explain types of releases, and
- Explain with exemplifications from English the phonetic feature described as tense.

3.0 MAIN CONTENTS

3.1 CONTINUANTS

As the name of this feature implies, continuant sounds are produced with a continuation of the flow of the air from the larynx to the vocal tract and out of the mouth. In producing such sounds, there is no constriction or blockage at the vocal cavities significant enough as to block or stop the outflow of air. This means that no speech organ comes into contact while the air passes out of the mouth; so, the air c*ontinues* to flow out unimpeded. Such sounds produced in this manner are called "approximants" by Ashby and Maidment (2005: 57 – 58), which they explain "have no complete closure anywhere on the midline of the vocal tract" and, they continue, "Air passes freely over the centre of the tongue and exit without turbulence" (p. 58). All vowel sounds have the feature "continuant". A good number of consonants also carry the term, especially those that leave a narrow space for the air to pass out. Examples of continuant consonants are: /s ʃ z f v r ð θ/. Glides such as /j w/ are also continuants. It goes without saying, thus, that sounds that do not fall in this category are non-continuants or stops, because they are produced with some sorts of obstructions in the oral or nasal cavity that *stops* the free flow of the air.

3.2 RELEASE FEATURES

Before something can be said to be released, it implies that that thing has been firmly or partially held or obstructed or hindered. This takes your mind back to the antonym of 3.1 which I called non-continuant or stop. These sounds described to have the release features are non-continuants.

There are two features of release, which Chomsky and Halle (1968: 318) describe as "instantaneous release" and "delayed release". These I will simplify as sudden release and gradual release, respectively. The instantaneous release sounds have the process of building up pressure behind the obstructed region by disallowing the air from escaping. When the pressure becomes high enough, the obstructing organs are parted instantaneously or suddenly. This abrupt release of the pent-up pressure often causes a sound like a slight ex*plosion*, from where *plosive* sounds are derived (sounds like an explosive). I am sure that examples of these sounds are already on your mind. Wait till we get to 4.0 when I will demand them from you.

The counterparts of the sounds described above do not build up pressure behind the obstructing area. But they slightly disallow the air to flow out freely; this is why they take the feature of delay or gradual release. As the saved air does not have enough pressure to burst out when the organs are parted and for an explosion, the air in this instance passes out with a little disturbance that causes some turbulence. They cause some [fff] or [sss] sound. Some examples of this in the English sound system are: / ð θ f v ʒ ʔ s z/.

3.3 TENSE FEATURE

Let us start this subsection with a little practical exercise. I want you to pronounce the English /t/, that, is using the very tip of your tongue to strike the alveolar ridge. Do this about five times. The second exercise: pronounce /d/ as you will pronounce it in the two occurrences in the word did. /did/. Do this five times. Repeat the first exercise and note what happens to your organs of speech at the vocal tract: tongue, palate and even your lips, jaws and your chest. Now repeat the second

exercise and note the same organs above. You would notice that in the first exercise, you used up muscular effort and tensioning of the muscle. But in the second exercise, the muscles are a little relaxed, somehow. Thus, any sound that follows the same muscular *tens*ion as /t/ above attracts the phonetic feature of *tense*, while the one that re*lax*es the muscle as /d/ non-tense or *lax*. Note that vowels too can be tense or non-tense. Compare these pairs: /ɪ i:/, /ʊ u:/ and /ɒ ɔ:/. Practise them like we did for /t d/.

4.0 SELF-ASSESSMENT EXERCISES (SAE)

Let me conclude this unit by asking you the following questions:

ia. What are continuants?

ib. Give 5 examples in English

ii. Why will you describe some sounds that bear the feature of release as explosive-like? Give 5 examples of such sounds from the English consonant system.

iii Let us say that the notations + means positive or present in, and – means negative or absent in. Complete this table.

S/N.	Sound	Tense	Nontense
1.	ɪ	-	+
2.	i:		
3.	ʊ		
4.	u:	+	-
5.	ɒ		
6.	ɔ:		
7.	t		
8.	d		

Take a particular note of this question, as it prepares you for another topic later.

5.0 SUMMARY

In this unit, you have learnt and can identify and discuss:

- the continuant sounds such as the vowels, glides and some consonant sounds;
- the release types of sounds such as /b t d/ which have instantaneous or sudden mode of release, and /s z ð θ/, which have delayed or gradual mode of release;
- tense and non-tense sounds, which involve muscular tension such as /t/ and non-muscular tension or lax such /d/.

6.0 TUTOR MARKED ASSESSMENT

Draw a table like 4.0.3 using 3 sounds each of the features of continuant, release and tense. Fix the present (+) or absent (-) notation of each feature in each of the 9 sounds you selected.

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UNIT 4 DISTINCTIVE FEATURES

CONTENT

1.0 INTRODUCTION

We have now arrived at the final destination of this module, which has been entitled “Distinctive Features”, and which happens to the title of the module. (I will often use the abbreviation DF in the discussion). It is the hallmark of the generative phonology theory: sometimes referred to as the distinctive features theory, which often gives the students of linguistics the nightmare. This should not necessarily be so to you, if you would come along with me slowly and steadily. Welcome on board!

2.0 OBJECTIVES

At the end of this unit, which rounds off this module, you should be able to:

- Define what DF is.
- Intelligently discuss DF.
- Build a DF matrix.

3.0 MAIN CONTENTS

3.1 DISTINCTIVE FEATURES

Let’s start our journey from the dictionary entries of “distinct” and “distinctive”. Out of the several entries on “distinct”, one is the closest to what we need here, which is: “clearly different or of different kind” (Horby, 2004: 338). And on the same page, on “distinctive” he says: “having a quality or characteristic that makes something different and easily noticed”. From here, it is not difficult, then, to say that DF are a set of characteristics that makes one thing different from another one.

I often thrill my students to list the names of everyone offering the course in order to compare who among them is: light skinned, chocolate, tall, short, male female, etc. By the time the exercise is complete, they would have written the characteristics that make each of them different from another!

Welcome from my class to the generative phonology theory, which believes that the phoneme of a speech sound can best be described by the total elements (features) that make it distinct or different (distinctive) from the other phonemes. This is what the theorists have referred to as the distinctive features. As you would have then noticed, all we have discussed in Units 1 – 4 are features that that can make one phoneme distinct from the other. These, as already discussed, may be: manner of production, place of production and the organs of production. Even the manner of how the organ of articulation has moved or is placed may constitute shades of different realisations of phonemes. Let us take for instance the coronary sounds, which involve the tongue. DF theory will describe if the tongue at the production of the phoneme is: high, low, retracted (back), anterior, posterior, tip or flap. These are the various features that are said to be present or absent in a sound when contrasted with another sound.

Acoustically, the theory lays great emphasis on the modes of the generation of the waves or air that makes up each phoneme from the lungs to the larynx, and the minute details of the movements of the vocal folds (they call it cords). This, you must note, is one great credit for the generative phonologists ahead of the other previous theorists. It is through this that we have the terms such as sonorant, vocalic and obstruent

3.2 +/- BINARY NOTATIONS IN GENERATIVE THEORY

Another major operation of the generative theory is the employment of the negative and the positive annotations. These are used to indicate the absence or presence of a feature in the sound being described. The theory in its inception has believed the binary (two) nature of the sound system meaning one of two features of things. This has assisted the generative phonologists to develop a highly formalised phonetic theory around the binary features. This means that for a given phoneme, there must be or not be a specific feature, which by its presence of absence has made it to be distinct from another one which has the feature or does not have the feature. Thus, as shown in the previous units of this module, there are binary features such as: high/non-high, coronary/non-conorary, sonorant/non-sonorant, obstruent/non-obstruent, nasal/non-nasal, etc.

The + annotation is the mathematical sign used to show that a sound has the particular feature in question; and the – annotation indicates that the sound in question does not possess the feature being indicated. In other words, + means the presence of a particular feature, and – means the absence of a particular feature. Thus, we can turn the binary examples in the last paragraph to: +high -high, +coronary -coronary, +sonorant -sonorant, +obstruent -obstruent, and +nasal –nasal. I think we should be ready now to build our DF matrix, the type that I have introduce to you in the last unit.

3.3 DISTINCTIVE FEATURES MATRIX (DFM)

This is the last section of this model where we need to apply all the theory we have learnt in Units 1-4 of the module. A matrix is an arrangement of symbols or numbers in columns and rows in order to describe or express a set of given information. In order to describe a set of phonemes in a very accurate way, the generative theory has found a valuable outlet in building a distinctive features matrix. It is an expression of the presence or absence of certain features in certain phonemes, which make the phonemes different from the others. The set of features being used to distinguish sounds, sometimes forms the row while the sound being distinguished or described forms the column, or vice versa.

Let us try and describe a set of phonemes by building its DF matrix: Let us examine just three features: coronary/non-coronary: high/non-high, back/non-back, obstruent/non-obstruent, and sonorant/non-sonorant. In doing this, let us describe the phonemes in “seat” /si:t/

	s	i:	t
coronary	+	+	+
high	-	+	-
back	-	-	-
obstruent	+	-	+
sonorant	-	+	-

-
-
-

We can go on and on to enlarge the matrix. This, the generative phonologists argue, is the best way to describe a speech sound.

You may see more matrices in works with interest in generative phonology such as: Chomsky & Halle (1968: 128), Clark & Yallop (1990: 156) and Jolayemi (1999: 77 & 2006: 33).

4.0 SELF-ASSESSMENT EXERCISES (SAE) I

ia. What are continuants?
ib. Give 5 examples in English
ii. Why will you describe some sounds that bear the feature of release as explosive-like? Give 5 examples of such sounds from the English consonant system.
iii. Let us say that the notations + means positive or present in, and – means negative or absent in. Complete this table.

S/N.	Sound	coronary	high	back	obstruent	sonorant
1.	i:					
2.	ʊ					
3.	ɒ					
4.	ɔ:					
5.	d					

SELF-ASSESSMENT EXERCISES (SAE) II

i. What are distinctive features?
ii. List 5 experts that have contributed to the theory of generative phonology.
iii. What advantages does this theory have over the others in phonemic description?

5.0 SUMMARY

In this unit, I have:

- Defined what DF is.
- Discussed DF.
- Explained how to build a DF matrix.

6.0 TEACHER MARKED ASSESSMENTS

1. As a follow-up to your assessment in Unit 4.6, complete the DF matrix below built from the first three phonemes of NOUN, which is transcribed as ə͡n ʊn/, using the features in 3.3

	n	ə	ʊ
coronary	+	-	+
high	+	-	-
back			
obstruent			
sonorant			

2. Use the features in 4.6 to describe the three phonemes in Question 1 above.

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MODULE 6 ENGLISH SYLLABLE, STRESS AND INTONATION

UNIT 1 ENGLISH SYLLABLE STRUCTURE AND STRENGTH

CONTENT

1.0 INTRODUCTION

In most of the previous Modules above, I have focused on the identification and description of the English phoneme as if it makes up the gamut of the phonology of English. No, it does not but precipitates the discussion of most parts of the English phonology; it forms the template for most other discussion in the field. Your attention in this module will be directed at the identification, description and use of the English phonemes, not in isolation as in the previous modules, but in a group called the syllable. Specifically, the first unit of this module will discuss the structure and strength of a syllable.

2.0 OBJECTIVES

By the end of this Unit, you will be able to:

- Define and identify the following parts of a syllable:
  - Peak (nucleus, rhythm or free syllable)
  - Onset (Pre-initial, initial, post-initial or open syllable)
  - Coda (Pre-final, final, post-final: 1 & 2, or close syllable)
  - Consonant clusters
- Analyse the structure of a syllable
- Explain the strength of an English syllable
- Recognise the weak syllables
- Explain what makes the strong syllable strong

3.0 MAIN CONTENTS

3.1 Peak (nucleus, rhythm, or free open syllable)
3.2 Onset (Pre-initial, initial, post-initial syllable)
3.3 Coda (Pre-final, final, post-final: 1 & 2, or close syllable)
3.4 The Weak Syllables
3.5 The Strong Syllables

3.1 PEAK (NUCLEUS, RHYTHM AND FREE SYLLABLE)

A syllable is defined by the *Oxford Advanced Learners' Dictionary of Current English* as: "any of the units into which a word is divided, containing a vowel sound and usually one or

more sounds" (p. 1215). From this axis, we can progress to say that, a syllable, essentially, is a division of a word that contains at least a vowel sound; this division is often marked by . (the sign of a full stop or period) and mediated by phonetic considerations. One thing you must first of all learn of a syllable, therefore, is that, it must contain a vowel sound. Phonetically, this unit of a word division is usually marked by higher amplitude or intensity (loudness), longer duration, and a change in fundamental frequency (pitch). This is why the term the peak has been used to name this unit of the syllable. Because it is the most essential part of a syllable, the term nucleus is often used to name it as well. Also, because in identifying the number of syllables of a word, it often possible to tap the number of beats one can count of the word, the term rhythm is used to name this part of the unit of a syllable.

Some examples of such one-vowel syllables in English are: or, ore and are /ɔ: ɔ: ɑ:/ respectively. Because this type of syllable does not have any other sound at its beginning nor end, or because it is preceded and succeeded by silence, it is also referred to as free, open or simple syllable. Please, note that the word division into units we refer to here is phonetically mediated and not morphologically such as: suffix, infix and prefix.

3.2 ONSET (PRE-INITIAL, INITIAL AND POST-INITIAL)

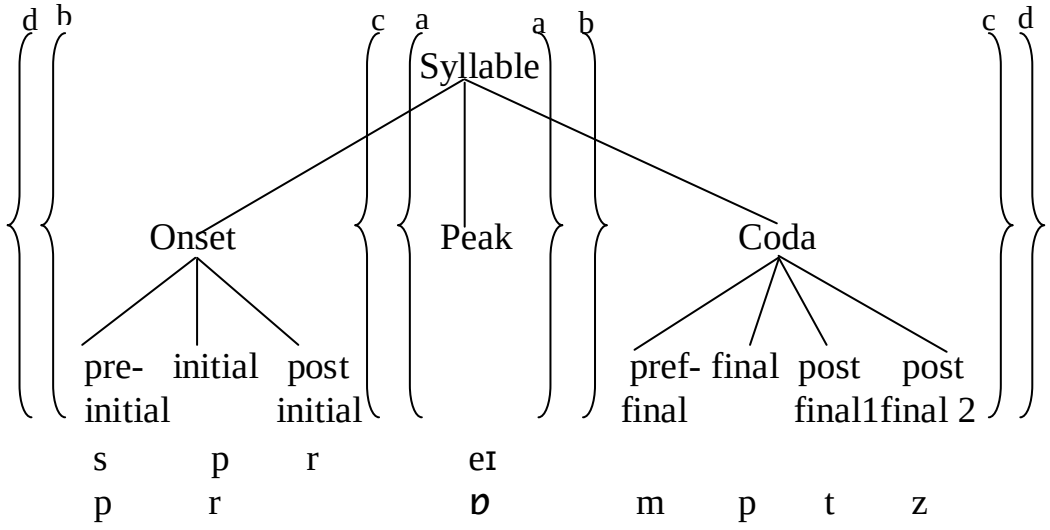
However, if a syllable is started or preceded by a consonant, i.e. a consonant comes before the mandatory vowel, the consonant at this initial position is named the onset. Sometimes, the onset may be made up of consonant clusters of as many as three consonants (for instance in English). In such an instance, the first of such is called the "pre-initial consonant", the second, "initial consonant" and the third, "final consonant". This can be illustrated with the word "stray" /streɪ/; where the peak, /eɪ/ is precede by an onset of three consonants made of /s t r/. Thus, /s/ is pre-initial, /t/ is the initial and /r/ is the final onset.

3.3 CODA (PRE-FINAL, FINAL, POST-FINAL: 1 & 2, OR CLOSE SYLLABLE)

However, just as the peak of a syllable can be free or preceded by an onset, it can equally be succeeded by as many as a cluster of four consonants. These consonants that appear at the final position of the peak is called the coda. The first of them is the pre-final, the second final, the third, post final 1, and the last, post final 2. But note that if the syllable has just one coda, the consonant is the final consonant. Let me illustrate this using "prompts" /prɒmptz/ as an example. The word has a coda of four consonants namely: /m p t z/; where: /m/ is pre-final, /p/ final /t/ post final 1 and /z/ post final 2.

Note that when a syllable has a coda, it is called a close syllable; (e.g. kin) however, if a syllable does not have an onset, it is said to be an open syllable (e.g. in), which has a zero onset. When a syllable does not have a coda, it is a syllable with zero coda (e.g. pay /peɪ/; if it has neither an onset nor a coda, it is said to be a syllable with zero onset and zero coda; it is, therefore, a free or simple syllable (e.g. woo /u:/. But when a syllable has both an onset and a coda of any number, the syllable is said to be a complex syllable.

Let us summarise the above with this tree diagram.



where brackets:

1. aa = simple or free syllable (zero onset and zero coda)
2. bb = syllable with onset but zero coda
3. cc = close syllable with zero onset
4. dd = syllable with encased in an onset and coda (complex syllable) and
5. two words, spray and prompts, have illustrated the diagram as it is rare to have a word that fulfils all the obligations.

3.4 THE WEAK SYLLABLES

In English, some syllables of most multi-syllabic words do not often receive emphasis, so are not accompanied by some kind of "loudness" that is relative to the other syllables in the same utterance or word. Acoustically speaking, such de-emphasised syllables experience relative reduction in the movements of the vocal folds, which often leads to reduced FO, intensity and duration. The phonological consequence of this is, this type of syllable is produced with some silence, little or no emphasis and sometimes totally swallowed or skipped. Such syllables that have these characteristics are called the weak syllables.

Some cues are there for you to identify such weak syllables in an utterance. The most common one is that the peak or the vowel of the syllable is almost always short, i.e., the peaks are made of the short vowel sounds such as: /ɪ ɛ æ ɒ ʊ ʌ ə/, which signal the occurrence of a weak syllable. In addition, such a weak syllable with a short peak is usually an open syllable, which does not have a coda. Sometimes when it has, the coda is just the final element - one consonant coda. An example is car.di.nal transcribed as /kɑ:.dɪ.nəl/ or /kɑ:.dɪ. nl/ of three syllables - /kɑ:/, /dɪ/ and /nəl/. You will notice that in the second transcription, the final syllable has a syllabic consonant /l/ as its peak giving /nl/, thereby, completely eliding the schwa sound /ə/ that ought to be the peak. Here, it is possible to swallow /ə/ because it is a weak vowel, indeed, the weakest of all the vowel sounds. In the instance above, the penultimate syllable, /dɪ/, is equally made of a weak vowel.

3.5 THE STRONG SYLLABLES

Inversely, if the other vowel sounds, apart from those pointed out in 3.1 above, constitute the peak of a syllable, such syllables are regarded as strong syllables. These vowels we have in mind are: /iː ɑː ɔː uː ɜː/ and all the diphthongs/triphthongs. Without gainsaying, they are all long sounds, which, therefore, contradict one of the factors that make a weak syllable. One other factor that determines the weight of the syllable is the number of consonants that serves as the coda of the syllable. When a consonant cluster of two or three is the coda of a syllable, this syllable is a strong syllable. Examples: (a) car.di.nal /kɑː.dɪ.nəl/ (b) sa.dist /seɪ.dɪst/, which illustrate factors one and two that determine a strong syllable. In (a), the first syllable, kɑː, is strong because of the long coda; while the two syllables of (b) are strong in: /seɪ/ and /dɪst/. /seɪ/ is strong by virtue of the long vowel, /eɪ/, that makes the peak, and /dɪst/ though has a peak of short vowel, but is bounded at the right by two consonants, /s/ and /t/.

4.0 SELF-ASSESSMENT EXERCISES (SAE) I

With illustrations, demonstrate your understanding of the following parts of a syllable: peak, onset, coda.
What are consonant clusters?

SELF-ASSESSMENT EXERCISES (SAE) II

i. Explain what is meant by strength in English syllables
ii. Give three examples of weak syllables
iii. Give three examples strong syllables

5.0 SUMMARY

In this unit, I have attempted to:

explain to you:

- Peak (nucleus, rhythm or free syllable) as a only vowel sound of the syllable.
- Onset (Pre-initial, initial, post-initial or open syllable) as the consonant(s) that precede(s) the only vowel sound a syllable.

- ❖ Coda (Pre-final, final, post-final: 1 & 2, or close syllable) as the consonant(s) that succeed(s) the only vowel sound a syllable.
- ❖ Consonant clusters as an occurrence of more than one consonant coming together, and

- Analyse the structure of a syllable
- To make you recognise the a weak syllable as having a short nucleus only, and a strong syllable as having a long nucleus or a short nucleus with at least two consonants binding it at the right side.

6.0 TUTOR MARKED ASSESSMENTS

With a well drawn diagram, analyse the structure of a complex syllable.

Discuss two factors guiding the recognition of: (a) the strong syllables and (b) the weak syllables.

7.0 REFERENCES/READING LIST

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UNIT 2 PHONOTACTICS OF ENGLISH

CONTENT

1.0 INTRODUCTION

From the above phonetic consideration of a syllable in Unit 1, although using many illustrations in English, I will move on in this unit to discuss the syllable and its combinatory properties in English.

2.0 OBJECTIVES

What this unit sets to do is to make you to:

- Define Phonotactics
- Recognise the Phonotactics of English
- Identify most of the possible combinations of the English Phonemes
- Explain the maximum onsets principle.

3.0 MAIN CONTENTS

3.1 THE PHONOTACTICS OF ENGLISH

Every language has it is own phonemic system and the possible ways the phonemes can come together to make meaningful units. Languages do not permit arbitrary combinations of phonemes if meaning is to be achieved. Thus, to make an acceptable unit, like the syllable, in a language, users of that language must recognise and use the correct phoneme order of the language. The study of all the possible combinations of the phonemes of a language in order to write an acceptable unit larger than the phoneme is called Phonotactics.

Our study of the Phonotactics of English will continue from the theoretical level that we established in Unit 1, and I shall largely rely on the discussions of Roach (2000: 70-92) and Gimson (1980: 237-254). Because the discussion of this unit is highly technical and therefore impossible to manufacture new examples, I shall present here a summary of the English Phonotactics discussed by Gimson (1980). Also, because of this technical nature, you are encouraged to read the detailed discussion of at least one of Roach or Gimson in the cited section of their books. There, you will come across many more details, which cannot come into this book; you will equally see

a number of tables that present all the English phonemes with all the possible sequences, i.e. all the possible ways the English syllables can combine to make acceptable units.

Specifically, in Table 1 (p. 240), Gimson presents 23 consonants at the initial-onset position that can combine with almost all the vowels including the diphthongs to form a CV syllable (one consonant initial onset and a peak). Only /ʒ/ rarely occurs as an onset at the initial position; while /ŋ/ does not occur at all. Examples of such sequences are: l-, s- and b as in: lie, see and boy. In Table 2 (pp. 242-243), he presents a sequence of 46 instances of the possible ways that two consonant onset (an initial cluster of CCV) can combine, and to make acceptable syllables with many English vowels. From the table, the following onset clusters, with a large number of vowels, are possible in English:

s + : l j w p t k m n f;
p, b, f (each) + : l r j;
t, d, θ (each) + : r j w;
k, g (each) + : l r j w;
m, n, l, v, h (each) + : j;
ʃ + : r

Examples of the above sequences of clusters at the onset position are: sl-, pl-, tr-, kl-, mj- and ʃr- in: sla(p), pli(ght), try, clea(n), mew and shri(nk).

In the Table 3 (pp. 244) of his discussion, Gimson presents the entire possible syllables in English with a sequence of three consonant onsets (initial cluster of CCCV). In such English clusters, /s/ must be the first essential consonant or the pre-initial element of the onsets; next are the three voiceless plosives: /p t k/ to be followed by any of: /l r j w/. Examples of such syllable clusters are: sprit-, str- and skj- in the words such as: Spri(te), stri(ke) and skew.
where: + : means: can form a sequence with one of

There are other acceptable sequences at the final position of a syllable in English. Such sequences are VC (peak+final consonant) e.g. a and l in all; VCC (peak+pre-final and final consonants, e.g. ŋ and k as in sink. There are other acceptable

sequences of longer clusters such as VCCC (peak+pre-final, final and post final consonants), e.g. e and kst in text; and even: VCCCC (peak+ pre-final, final and post final 1 and post final 2 consonants) as in e and ksts as in texts. You check for more discussion and examples in Gimson (1980: 241-252) and Roach (2000: 70-76).

3.2 ENGLISH SYLLABLE DIVISION

In the foregone, you have been exposed to the various sequences of possible syllables in English, but we have not made any effort to state where and how an English word is divisible into syllables. This may look simple, but indeed, it is a difficult task not only for the users of English as a second language, but also for the native speakers even with the intuitive knowledge of his language. One very common example in the literature on English phonotactics is the word “asterisks”. The argument goes that into what syllabic components should the word be divided, for instance of “asterisks”?

a ste risks;
as te risks;
ast e risks;
ast er isks; and
as ter isks

are possible components!!!

However, it has been advised that dividing a word into syllables is by no means arbitrary in English; certain guidelines have to be followed when you want to divide into syllables. One of such guidelines is what is referred to as the Maximum Onsets Principle (MOP). The principle, according to Roach (2000: 77-78), states that:

> where two syllables are to be divided, any consonants between them should be attached to the right-hand syllable, not to the last, as far as possible (p. 78).

This means that, where there are two syllable of an utterance, a word or short utterance, any or all the consonants that appear between the two syllabic peaks, i.e. the vowels, must be made

the component element(s) of the peak/vowel that stands at the right hand of the syllable.

An example very commonly used in this discussion is the word "extra". This is a word of two syllables, which looks simple and ordinary; but difficulty arises if we make an attempt to divide it into two syllables. The argument goes, like for "asterisks", that how, for instance could "extra" [ekstra] be divided? Is it as:
e.kstra,
ek.stra,
eks.tra,
ekst.ra or
ekstr.a?

If you were to apply MOP, you have a division such as e.kstra or ek.stra. While the latter option is correct, the former is incorrect. This means that to recognise a syllable boundary some other principles are at work in conjunction with MOP. Some of these are:

i. the onset of a syllable must be permissible in English,
ii. a division is sometimes created such that the strong vowel attracts the consonant,
iii. two consonants between vowels can be split into two such that the left one serves as the coda of one syllable and the other, the onset of the other syllable.

More details, principles and examples can be accessed from Fudge (1984: 18-23) and Roach (2000: 77-78).

4.0 SELF-ASSESSMENT EXERCISES (SAE)

This unit can be concluded by asking you these questions:

i. Define Phonotactics
ii. Give three examples to illustrate the Phonotactics of English
iii. Identify most of the possible combinations of the English Phonemes
iv. Using the maximum onsets principle, divide these words into their appropriate syllables: (a) asking (b) fellow and (c) teacher.

5.0 SUMMARY

In this unit, I have:

- Defined Phonotactics as the study of all the possible combinations of the phonemes of a language you can write an acceptable unit larger than the phoneme, .e.g. a syllable.
- Illustrated to you how to recognise the Phonotactics of English.
- Identify most of the possible combinations of the English Phonemes.
- Explained the maximum onsets principle.
- Mentioned other principles that may guide syllable boundary division.

6.0 TUTOR MARKED ASSESSMENTS

Using three English words as examples discuss the Phonotactics of English and explain why care must be taken in syllabifying words.

7.0 REFERENCES AND READING LIST

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UNIT 3 STRESS IN ENGLISH

CONTENT

This unit is concerned with the concept of stress marking and its importance to a language like English. It is discussed under the sub-topics below. The unit also discusses certain guidelines that often determine awards of stress marking called the English Stress Rules (ESR). Lastly, the unit will take you through the steps of English stress marking. All this is done under the following sub-headings:

1.0 INTRODUCTION

English language belongs to the Germanic phylum, one of whose characteristics is determining the meaning of a word or utterance by the syllable that carries the stress or what is sometimes called prominence, which some people again refers to as accent. It is the desire of this unit to present a theoretical background to the discussion of the stress in English, introduce you to some stress rules in English and actually attempt the stress marking of English words and sentences.

2.0 OBJECTIVES

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

- What stress is and mention a few experts in the field of stress in English language
- Diacritics to mark stress and the importance of stress to English
- Some common English Stress Rules (ESR).
- Manners you will award stress marks on English words and sentences.

3.0 MAIN CONTENTS

3.1 WHAT STRESS IS

Various definitions have been offered for the word "stress" as a linguistic feature. What is not included in them is that "stress" in this sense does not cover the psycho-medical relations. As a linguistic feature, it concerns the prominence given a syllable of an utterance relative to the other syllables in the utterance. This prominence may be marked by higher intensity (loudness), increased fundamental frequency (pitch) length, etc. occasioned by some organs of speech. Specifically, let me present to you a few definitions or qualifications of stress from some experts in the study. Christophersen (1956: 153) says:

> …a certain syllable…uttered with great energy…air is ejected from the lungs with more effort and the other speech organs perform their actions with more vigour…the total effect is that the stressed syllable seems louder than the others.

Erick Fudge (1984: 1), one of the regarded experts in the matter of stress in English language writes in his book: *English word-stress* that:

> Stress means essentially that one phonological element is singled out within another, longer, phonological element. *Sentence-stress* involves the picking out of one word or phrase within the *sentence*; this word or phrase is usually given special emphasis of some kind in pronunciation.

Knowles (1990: 96), while referring to stress as accent, offers that:

> Accent refers to prominence given to a syllable by means of a change of pitch….concentrates on the increased physical effort which is needed to emphasize a syllable, and the resulting peak of loudness which is perceived as a rhythmical 'beat'… we can assume that accented syllables are accompanied by an increase of loudness.

And Jolayemi (2006: 97-98), giving a working definition, says stress is:

> the exertion or force occasioned by the larynx, the vocal folds and other speech organs culminating into prominence on a specific syllable among other contiguous ones (if more than one).

From the above, you can clearly adduce, define and explain the concept of stress. But additional information to know of the English stress is that three levels of stress are recognised. The first is often called the main or primary stress, which is the highest of the three or the most prominent and the one we often request in phonological considerations. It is often marked by a short upper vertical line as diacritic represented as ˈ The second level is the secondary stress, which is less in prominence; marked by a short low vertical line represented as ˌ The third level is called the tertiary stress, which is the least in prominence. Because of its little recognition, it is often not marked or at best be represented by a little make close to the full stop.

Also you have to know that, generally speaking, a moderate English word of four syllables has its syllables named as, initial, antepenultimate, penultimate and final. Let me exemplify with "allowances" of four syllables: a.llow.an.ces /əˈlaʊ.ənt sɪz/ where: /ə/ = initial syllable; /laʊ/ = antepenultimate syllable;

/ən/ = penultimate syllable; and /t sɪz/ = final syllable. Your knowledge of this is very important as we shall often refer these terms in this discussion where we shall mention the words or syllables to be given prominence among other contiguous words in a sentence or syllables in a word.

3.1.2 IMPORTANCE OF STRESS TO ENGLISH

Let us consider these data from Jolayemi (2008: 109)

Table 1: Examples of Meaning Distinction Through Tone Types

Respon.		Tone Type 1	English	Tone Type 2	English
Ebira	i.	ùrùvú	frog	uruvu	intestine
	ii.	irẹ̀sú	head	ìrẹ̀sù	raining season
Edo	i.	ìsẹ	amen	ísẹ	musical instrument
	ii.	ádá	sword	àdà	road junction
Igala	i.	ojí	thief	òjì	head
	ii.	ogó	gutter	ògo	swing
Nupe	i.	ba	cut	bà	count
	ii.	egó	grasses	ègo	worm

The information we can deduce from the above Table is to the effect that the diacritics of High, Mid and Low (´ , not usually marked and `) determine, to a large extent, the meaning of utterances that are homograph and we are able to distinguish one meaning from the other through them. Therefore, for languages like Ebira, Edo, Igala and Nupe, tone markers are a highly essential semantic property. A similar argument can as well be made of English, but this time, of the importance of stress marking to meaning in the language.

To the native speakers, stress marks an important element in the communicative competence expected of any user. Acquired naturally by an English child, little attention is often paid to its use. It is his intuitive knowledge of stress marking that enables

him to immediately distinguish between “import” as a noun and “import” as verb.

But to a learner of English as a second language, conscious efforts are made to learn stress as he learns the other elements of the language. To him, he encounters difficulty at three different levels: the complexities of the concept of stress, which to a large extent, is encountered by the native speakers also; stress competence manifests at spoken English level only (except when trying to transcribe); and lastly, there is no existence of such a feature in his linguistic repertoire. Yet, he is expected to show a measure of competence in his daily use of spoken English! If he does not, he will be missing an important communicative skill in English and his speech may not be adequately intelligible nor acceptable. He may sound like someone who, in Edo language, says: ìsẹ (with High-Low tones), meaning amen when he actually wants to say ésẹ (Low - Mid tones), which is a musical instrument.

3.3 THE ENGLISH STRESS RULES (ESR)

In English, certain rules are applicable to assist in the determination of what syllable of a word is to be stressed, these rules help, to a large extent, the predictability of the occurrences of stress markings in English. Although a few traditional phonologists have argued the difficulties of configuring rules of stress marking, modern phonologists have since proved that it is indeed possible to have rules of stress marking. This has being the engagements of the generative phonologists such as Chomsky & Halle (1968), Autosegmental phonologists like Goldsmith (1976, 1995) and metrical phonologists such as Liberman & Prince (1976), Hogg & McCully (1987), Jolayemi (2001) and Jolayemi (2006). It is from their perspectives that I will introduce to you a few ESR that can assist you in predicting the stressed syllable. A few general guidelines from the classical/traditional phonologists such as: Fudge (1984), Gimson (1990) and Roach (2000) on predicting stress occurrences will also be beneficial in this exercise.

As already indicated above, stress marking has been one discussion confronting and engaging the attention of phonologists, traditional and generative alike. The working guidelines and formalised rules in stress marking of these

theorists shall be summarised in this unit. It is hoped that the summary will give you a gist of what you need while marking out a stressed syllable in English.

From the previous module on the study of the English Phonotactics and syllable, specifically, in Unit 3 of Module 6, you have been introduced to the strength of English syllables; it is from here that I shall take off:

i. Unless otherwise stated, only strong syllables can be stressed in an English word eg.: a.pply /əˈplɑɪ/, /ə/ is not stressed as it is a weak syllable, but /plɑɪ/ is stressed because it is a strong syllable. So that you have aˈpply and not ˈapply. This often referred to as the Main Stress Rule (MSR).
ii. A weak syllable can only be stressed when the previous one or two syllables cannot be stressed.
iii. All the theories of phonology agree that words that may attract a primary stress are in the categories of noun, adjective, verb and adverb.
iv. The generative phonologists advise that when a syllable is stressed, all the other syllables in the word must be distressed or weakened (Chomsky & Halle, 1968).
v. The metrical phonologists state that the final syllable of a noun or adjective is “extrametrical”, so should be ignored when you want to apply ESR.
vi. They also say that application of ESR should start at the extreme right
vii. The metrical phonologists also state that stress marking, or the application of ESR must start from the extreme right.
viii. Generally speaking most nouns and adjectives tend to have stress towards the initial position because as the metrical phonologists have stated, the last syllable is “extrametrical” meaning it should be discountenanced before the application of ESR. So do not stress the final syllable of words in these categories (Hogg and McCully, 1987).
ix. For words in the categories of verbs and adverbs, the rule states that the final syllable is often stressed, if and only if it is not a weak syllable or a syllable ending in the diphthong /əʊ/ (Roach, 2000: 98).

x. Certain affixes are stress “repellents” i.e. they push stress away from themselves by one or two syllables, eg.; some are “stress attractors” i.e. they attract stress towards themselves; Examples are some are -ion, -ity; while some are stress retainers i.e. they pull stress right on themselves. (Jolayemi, 2006).

xi. Most prefixes do not influence stress marking. Eg. imˈportant and unimˈportant ; un- the negative marker has no influence on the stress position.

Most of the ESR given above are applicable to isolated words only or operated at the word level. So, most of them are called Lexical Stress Rules (LSR).

xii. There is a rule that predicts stress occurrence in compound words only; this is called the Compound Stress Rule (CSR). It states that in the occurrence of a compound word, the first word of the compound word receives the primary stress.

xiii. The last of the ESR borders on longer utterances than the single words or compound words; it concerns a group of words that makes a phrase. The ESR often used to determine stress placement is called: Nuclear Stress Rule (NSR); and states that in group of words that form a phrase, place the primary stress on the final word of the phrase, if and only if it is in the categories of: noun, adjective, verb and adverb, if not, place it on the word that satisfies this condition before the final word.

This is just a summary of ESR; details can be sought from the reference and further reading list.

3.4 ENGLISH STRESS MARKING

Word and sentence level stress placement is the concern of this section, which is done under the sub-heading below.

3.4.1 Word-Level Stress Marking
3.4.2 Compound Stress Marking
3.4.3 Phrase/Sentence Stress Marking

3.4.1 WORD-LEVEL STRESS MARKING

Congratulations, you are completing a very crucial part of a course in phonology, a very important one for that matter, with a very stressful section: Stress Marking. I have so far explained to you some of the general rules that can assist in predicting the syllables that we can award the primary stress in English words and utterances. The objective of this Section, therefore, is the application of these rules in the placement of the primary stress on the acceptable syllables of words and utterances in English language using the generative and metrical theories.

Let us consider this group of English words from Chomsky & Halle (1968: 80) and Jolayemi (2006:52):

Noun	Adjective	Verb
A'merica	'manifest	main'tain
'cinema	'Shallow	e'lect
ho'rizon	'fran tic	de'termine

Under the noun category, we cannot place the stress on the final syllables of America and cinema because our rule says they are extrametrical, meaning we will ignore them before we apply the appropriate rule. We neither stress the penultimate, because they are weak syllables. This is what accounts for the initial stress pattern that we have observed for the two words under noun and the three adjectives. However, horizon defers this pattern by taken a penultimate stress marking instead of the final like the others. The reason is simple, and that is: we cannot skip the penultimate syllable /rai/ like we did for the rest because it is a strong syllable. This why we have the pattern ho'rizon and not ' horizon.

On the verb category, you will notice that we accurately stressed the last syllable of maintain, because it is made of a strong syllable of a diphthong, ˈtain /teɪn/. This is also applicable to elect, stressed as e'lect , because the last syllable, /lɛkt/, is strong. You still remember that a short vowel sound makes a strong syllable if two consonants serve as its coda (Module 6, Unit 3.2 above). But determine, the third word in the verb category, does not obey this pattern because its final syllable, /mɪn/, is weak, hence we have to transfer the stress to the next available strong syllable. Thus, we have the final

output of deˈtermine with /tɜ:/, a strong syllable being the recipient syllable.

If you follow and work through these practical examples given above, you will be able to use stress in English correctly, especially at word level.

3.4.2 COMPOUND STRESS MARKING

Remember that a compound word is often made up of two independent words, which are written separately (pen knife), written with a hyphen separating them (pen-knife) or in neither of these ways (penknife). In many cases, the first word of a compound often attracts the main stress. You will notice that this is what our formulated rule xi in Unit 2 of this Module states. Thus, let's use the compound word very common in the literature: blackboard. This word is in the noun category, which means a flat wide wooden slate painted black that is often placed at the front of a class for teachers to write on. So, it has the stress on black as in 'blackboard. Other examples are 'headmaster, 'word -stress, 'football, ' stress -shift. Stress marking may not be as straight forward as it seems here, as complication may arise when use as a phrase or within a phrase as it will be clear in the next sub-unit below.

3.4.3 SENTENCE STRESS MARKING

Let me make it clear from the outset that, by sentence, we mean anything above the word or the compound; therefore, we include here the phrase, short as it may be. Let me exemplify with "blackboard" and "black board" in these two sentences:

i. The teacher needs the blackboard to write the summary of his lecture.
ii. The teacher needs the black board to construct the stage for that scene.

In i. we mean a classroom material for teaching; in ii. We mean a board that happens to be black in colour for stage construction; it may necessarily be a board that is brown, green or white. Therefore, "black" in i. is an essential component of the classroom material, so the compound word is given the

Compound Stress treatment (CSR) as ˈblackboard. But “black” in ii is a mere adjective to describe the particular colour of the board that the teacher needs for the stage. It is therefore a phrase, an adjectival phrase, which essentially, must attract the Nuclear Stress Rule (NSR) stress marking giving blackˈboard.

Let’s take another near similar phrase: the blackboard eraser. Here, we must apply a complex of ESR to be able to correctly mark the stress. It will be helpful if we do this exercise one step after the other:

Step 1: decide if the above is a word, compound or phrase to know what rule or rules to apply. In this case, we know it is a phrase.

Step 2: what does the phrase rule state? Stress the word at the extreme right hand of the phrase. In this case: eraser.

Step 3: But you will notice that “eraser” has three syllables! So, we actually have multiple difficult tasks on our hands; namely (a) how do we decide where to break erase into three syllables: e.ra.ser, er.a.ser or er.as.er? (b) which of the three takes the stress diacritic [ˈe.], [ˈra], [ˈas] or [ˈer]? If you remember your maximum onsets principle (Module 7, Unit 2, Section 3.2 above), then, eˈraser, will be correct.

Step 4: the next word from the right is blackboard, which we know is a compound word and so takes stress mark at the initial position such as ˈblackboard.

Step 5: the last word at the extreme left is the; which, although may receive a main stress if it stands alone, but which does not fall into the category of words to be stressed in a phrase.

The phrase in question can be analysed in the following ways:

Classical Theory: the ˈblackboard eˈraser
6 4 5 3 1 2

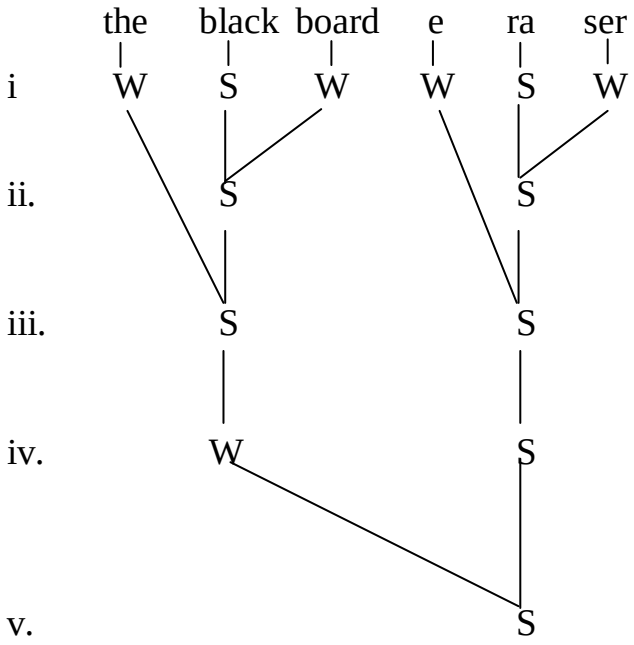
Generative Theory: the blackboard eraser (1is most stressed; 6 least stressed).

Metrical Theory: the blackboard ˈeraser

Autosegmental Theory: the blackboard eraser
- + - - + -
(- = no stress; + = stress)

For the benefit of those who will study phonology at the Postgraduate level, let me further explain how the metrical phonologists arrive at the stress pattern indicated above with

what is called the arboreal diagram, using Jolayemi's (2006: 105) Straight Tree System (STS):



This is the arboreal analysis of the phrase in the metrical phonology theory.

i. indicates the syllabic weight at the syllable level
ii. indicates the syllabic weight at the word level
iii. indicates the syllabic weight at the class level: the ˈblackboard (nominal adjective) and eˈraser (noun, head)
iv. indicates the syllabic weight at the phrase level (between "the ˈblackboard" and "eˈraser")
v. gives the ultimate prominence in the phrase to "eˈraser".

4.0 SELF-ASSESMENT EXERCISES I

i. What class of words normally receive the stress marking?
ii. By what diacritic can mark stress?
iii. From what direction do you start to apply ESR?
iv. What do you understand by extrametricallity?

SELF-ASSESSMENT EXERCISES II

i. Why does ˈimport (Nn) has a different stress pattern from imˈport?

ii. Put the stress diacritic on the right syllable of the following words:
Housemaster, among, stable, concentrate, congratulations.

iii. Put the stress diacritic on the right syllable of the following sentences:
   a. This is my driver.
   b. That answer is wrong.
   c. Shut the windows and lock the door.

Note: As I have said at the beginning of this course, you must possess a good pronouncing dictionary, which you can now use to check if some of your answers to these questions are right.

5.0 SUMMARY

This unit has explained:

- what stress is;
- the diacritics to mark stress;
- the importance of stress to English Language; and
- mentioned a few experts in the field of stress in English language

Also in this unit, I explained to you some common English Stress Rules (ESR) I also explained to you the steps you can take to be able to award the stress mark with emphasis on the application of ESR in the placement of the primary stress on the acceptable syllables of words and utterances in English language using the generative and metrical theories. I have also practically demonstrated, in the unit, how you can achieve this with “the blackboard eraser” as an illustration.

6.0 TEACHER MARKED ASSESSMENTS

Certain suffices participate in stress marking while some are unconcerned; with 2 examples each, discuss.

i. Put the stress diacritic on the right syllable of the following sentences:
    a. This is my driver.
    b. That answer is wrong.
    c. Shut the windows and lock the door.

7.0 REFERENCES AND READING LIST

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UNIT 4 ENGLISH INTONATION I

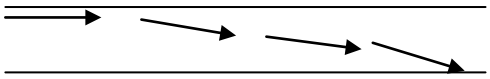
CONTENTS

Another main reason for the "musical" tune typical of the English language is the intonation features of the language. Intonation is defined as the rise and fall of the pitch of an utterance (Jolayemi, 1999: 82). It is also described as voice modulation; when you have your voice high or low. Gimson, 1980: 264) describes intonation as "variation of pitch". How this comes about is the issue to be explained in this unit and the next. Its main linguistic significance is the exhibition of non-phonemic gestures or information that often accompanies the spoken words. This may be for the purpose of showing surprise, agree/disagreement in subtle ways, command, etc. Please, note that what I will discuss here is intonation in the sense of its functional use. For a detailed and advanced discussion of intonation, its complexity and pedagogy, refer to an author like Roach (2000), who dedicates five chapters (Chapters 15-20) to this endeavour. You will find it on pages 156-203 of the 2005 Reprint. There, you will also have the opportunity to hear and practise the concept from guided tape-recorded conversations of native speakers of English if you are able to secure the tape, which I strongly advise, you should access.

Three main types of intonation pattern, which are often referred to as tunes, are usually identified, namely: Tune I, Tune II and the Polar Tune. The first of them, Tune I, is the concern of this unit, which is discussed under the sub-headings below.

1.0 INTRODUCTION

It is usually said of English that the language sounds musical. One way this is achieved is the lowering of the pitch towards the end of an utterance from a high level at the beginning of the utterance. This is what is popularly referred to as Tune I. Let me practically illustrate the flow of the Tune with these gradient arrows:



What the diagram explains is that the pitch produced by the utterance, which starts on a high level, gradually descends at the end of the utterance. Therefore, a black thick downward arrow is used to represent the tune: ↘ to indicate that the utterance starts at a somewhat high and ends up somewhat low level.

2.0 OBJECTIVES

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

- identify what Tune I is.
- explain when it usually occurs in connected English speech.
- Give examples of utterances that are rendered in Tune I.

3.0 MAIN CONTENTS

Occasions when Tune I is implored, are discussed below. A few utterances to illustrate each of the occasions also spice this section of the unit.

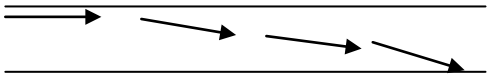
3.1 COMPLETE STATEMENTS OR LISTING

When complete statements, especially of short duration are made, the Tune I is implored. Also when listing items more than two, you can use this tune. Examples are:

i. Let’s go home.
ii. That’s good for you.
iii. The lecture starts right away.
iv. You may call me Mr Thompson.

v. I need a biro, a pencil and a book rap paper.
vi. Buy a spoon, a knife and a set of teacup.

You will notice that our example in ii. above generates the tune flow typical of the diagram illustrated in Unit 4.1.0 as shown below:



That's good for you

implicating that "That" is higher than "good", which is higher than "for" that is higher than "you". This can also be simply written as: That's good for you ↘

3.2 EMPHATIC STATEMENTS

When you want to lay particular emphasis on certain utterances you want to make in order to convey some special message, you often use Tune I. this is a speech act that we make very regularly. Examples are:

i. I do not hate you.
ii. Rivers flow downhill.
iii. That's not it.
iv. Corruption won't help there.

Note that almost any statement can be rendered emphatically; it all depends on the arrangement of the flow of the pitch.

3.3 COMMANDS

We often perform the speech act of command very regularly in daily interaction with friends, siblings and school-mates, whether we mean it as a joke or a fact. Whenever we perform this act, we often implore Tune I. Examples of such perfomative acts of command are:

i. Get out now
ii. Stop shouting
iii. Keep moving there.
iv. Drop that book now.

3.4 WH- QUESTIONS

Tune I is often the right tune to use when you ask questions from people which starts with wh-. Such question-words we have in mind are: what, where, when, which, who and why. Remember that each time you ask a wh- question, the utterance should start of as high while it should end up as low. Instances of such utterances where you can implore this tune are:

i. What is your name?
ii. Where are you going?
iii. When will you arrive?
iv. Which way do we turn?
v. Who is your right man?
vi. Why are you so cruel?

4.0 SELF-ASSESSEMENT EXERCISES (SAE)

i. Define intonation in relation to English language.
ii. Into what speech type of Tune I will you classify each of the following?
    a. What made you late?
    b. Drop that baby now.
    c. That's the right one.
    d. Smile as you eat.

5.0 SUMMARY

In this unit, I have:

- defined and explained the concept of intonation in English language
- identified for you what Tune I is.
- explained to you when Tune I usually occurs in connected English speech.
- given many examples to illustrate various types of utterances that are rendered in Tune I.

6.0 TEACHER MARKED ASSESSMENTS

With the aid of four diagrammed illustrations, explain what you understand by Tune I using examples from English.

7.0 REFERENCES AND READING LIST

Chomsky, Noam & Halle, Morris. (1968). *The sound pattern of English*. New York: Harper & Row, Publishers.

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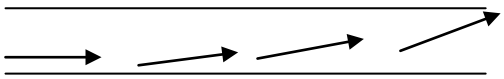
UNIT 5 ENGLISH INTONATION II

CONTENT

Welcome to last unit of this course book. Here, I will discuss Tune II, which is the direct opposite of Tune I. I will also discuss the Polar Tune, which you may also call Tune III because it combines the futures in Tunes I and II. This you will find done under the following sub-headings.

1.0 INTRODUCTION

This is the tune used by native speakers of English in a way that the voice pitch starts on a somewhat low level at the beginning of an utterance but rises towards the end of the utterance. I have earlier described it as the opposite of Tune I. Let me illustrate this with the reversed version of the diagram in Unit 4 of this module.



You may also identify the tune by simply denoting the rising tune with a black upward arrow such as ↗ at the end of the utterance. This tune can be implored when you want to make utterances that involve:

i. Yes or no or Polar Questions
ii. Non Wh- Questions and Non Yes or No Questions
iii. Incomplete Statements or Listing
iv. Question Tags

Each of these shall be discussed shortly.

2.0 OBJECTIVES

By the end of this unit, you will able to:

- identify what Tune II is.
- recognise Tag or Tune III
- explain when they usually occur in connected English speech.
- Give examples of utterances that are rendered in Tunes.

3.0 MAIN CONTENTS

3.1 YES OR NO OR POLAR QUESTIONS

During an interlocution (discussion) in English, you often ask questions that require “yes” or “no” answers. These types of questions are also known as polar questions. Such questions, essentially, require you to use Tune II. This is because the

native speakers will start the questions on a low pitch and end it on a high pitch; and you are expected to do the same. Examples of such polar questions are:

i. Are you ready now?
ii. Will you help me?
iii. May we meet tomorrow?
iv. Is she okay?

3.2 NON WH- QUESTIONS AND NON YES OR NO QUESTIONS

Anytime you want to make utterances that involve questions that do not start with wh-, just like those you have in 3.1, Tune II is your choice. If you also want to ask questions whose answers will not require “yes” or “no”, Tune II is what you need. These are many of the speech acts that you perform on a daily basis. Take these examples as illustrations:

i. Thank him for what?
ii. Will you describe the thief you saw?
iii. How shall I write the letter?
iv. How will he start all over?

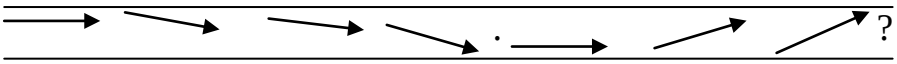
3.3 INCOMPLETE STATEMENTS OR LISTING OR QUESTIONS

Tune II is mostly implored when you make an incomplete statement; that is, because of some reasons, you do not complete the utterance you are making. Put in another way the speech act is hanging. Similarly, Tune II is used when you make an incomplete list of several items; that is, you hang up without completing listing of the items. Also, the same phenomenon manifests when you do not complete a question you want to ask. The examples below will concretise my explanation.

The campus is deserted but…
Must she and…
He needs a nail, a hammer,..
One, two, three, four,…
Are you aware of…?
Shouldn’t you alone do the…?

3.4 QUESTION TAGS OR TUNE III

One typical interactive native use of English in conversations is the deployment of short questions after a complete statement. These complementary questions are called tags or question tags; which serve as a means to confirm, agree, disagree or emphasise the statement made earlier. Using such tags requires a mixture of Tunes I and II. It is done in such a way that the first part of the utterance, which is a complete statement, starts on high-level pitch but ends up a low-pitch, typical of Tune I utterances. As soon as this ends, the question tag, seeking additional information and most of which are polar and non wh-, begins on a low and ends up on a rising pitch, a feature of Tune II. It is because of this distinct pitch variation, which combines the linguistic features of Tune I and Tune II that the pitch formation of the statement and its question tag is given the term Tune III. Like I did for Tunes I and II, let me diagrammatically represent below what I have explained to you on Tune III above. At the same time, I shall illustrate with a typical utterance, noting that the second syllable of the question tag is a phonetic rendition of a native speaker.



You don't love me. Do oo you?

Also, a curly arrow that descends (Tune I) and then ascends (Tune II) may such as this ↘↗ simply be placed at the end of an utterance to indicate that it has the Tune III features. Thus, the example above can equally be analysed as:

You don't love me, do you?

A few more examples that you can use to practise are given below:

i. You are not an undergraduate, are you?
ii. Give me the blackboard eraser, won't you?
iii. Oceans don't dry, do they?
iv. This course has come to an end, hasn't it?
v. You like phonology of English, don't you?

4.0 SELF-ASSESSMENT EXERCISES (SAE)

i. With the aid of four utterances, demonstrate your knowledge of Tune II.
ii. Into what speech acts in Tune II will you categorise the following utterances:
    a. Come along with your pair of bats, net and
    b. Do you understand?
    c. Cash has no enemy, does it?

5.0 SUMMARY

In this unit, I have:

- identified what Tune II is
- expatiated Tag or Tune III
- explained when these tunes usually occur in connected English speech.
- diagrammatically captured Tunes II and III
- given examples of utterances that are rendered in the tunes.

6.0 TUTOR MARKED ASSESSMENTS

i. With the aid of four utterances, demonstrate your knowledge of Tune II.
ii. Into what speech acts in Tune II will you categorise the following utterances:
    a. Come along with your pair of bats, net and...
    b. Do you understand?
    c. Cash has no enemy, does it?
iii. Tune I + Tune II = Tune III. Discuss.

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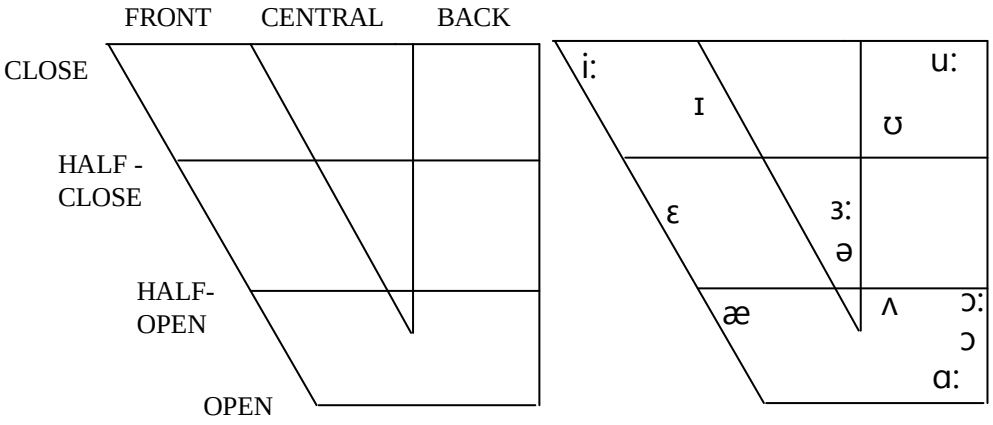

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