NATIONAL OPEN UNIVERSITY OF NIGERIA

FACULTY OF ARTS

COURSE CODE: ENG 241

COURSE TITLE: INTRODUCTION TO PHONETICS AND PHONOLOGY OF ENGLISH

ENG 241
INTRODUCTION TO PHONETICS AND PHONOLOGY OF ENGLISH

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NATIONAL OPEN UNIVERSITY OF NIGERIA

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Introduction

ENG 241: Introduction to Phonetics and Phonology is a first semester, 3 credit hours course, for beginners in the study of General Phonetics and the Phonology of a particular language. It is a language course for second year students of English but students at similar levels in linguistics may also find the course adequate for their needs.

The course consists of fourteen units which cover a general introduction to phonetics and the phonology of English; the concept and nature of language, phonetics and phonology, speech production and description as well as non-segmental features of tone/intonation; accentuation/stress, syllable structure, rhythm.

This course guide informs you about the course generally and how to go about achieving the best in it. You are advised to pay attention to every detail in what follows.

Course Aims

The course aims at introducing second year university undergraduates to a systematic study of the nature of language, the basic sound production processes and a description of the basic sounds of a given language – the English language. In addition, the course exposes the undergraduates concerned to appropriate non-segmental features of English.

Course Objectives

On successful completion of the course, you should be able, among other things, to:

    i)   explain what language is;
    ii)   comment on the speculations about the origin of language;
    iii)   distinguish between natural and artificial language;
    iv)   identify language mediums and their features;
    v)   Identify branches of phonetics;

vi) explain the nature of speech sounds and distinguish them from letters of the alphabet;

vii) explain the process of speech production/articulation;

viii) carry out a description of the basic sounds of English;

ix) undertake an analysis of syllable structure as well as rhythmic patterns using intonation, accentuation/stress.

Working through the Course

To complete this course, you are expected to:

(i) study and understand all the units;

(ii) read recommended books and other sources which the National Open University of Nigeria (NOUN) may recommend for you;

(iii) practice self-assessment exercise and submit Tutor-Marked Assignments (TMAs) for assessment by your tutor;

(iv) practice pronunciation following the recordings on your audio tapes;

(v) revise the study units and the accompanying exercises;

(vi) sit for and pass the final examination on the course.

Course Materials

The main materials in this course are:

(i) study units;

(ii) text-books;

(iii) assignment file;

(iv) presentation schedule.

Study Units

There are fourteen units in this course, thus:

A   **Module 1:**   **Introduction and Overview**

     Unit 1: Language: Nature, Origins and Mediums

     Unit 2: Major Components of Language; Defining Phonetics and Phonology

B   **Module 2:**   **Phonetics**

     Unit 3: Phonetics and its Branches

     Unit 4: The Phoneme and the Allophone

     Unit 5: Organs of Speech

     Unit 6: Speech Sounds/Production Processes

     Unit 7: The Basic Sounds of English

C   **Module 3:**   **The Phonology of English**

     Unit 8: Sound Patterning in English: Consonants

     Unit 9: Sound Patterning in English: Vowels

     Unit 10: Phonological System and Structure

D   **Module 4:**   **Non-segmental Features**

     Unit 11: Tone/Intonation

     Unit 12: Syllable Structure/Juncture

     Unit 13:   Accentuation/Stress

     Unit 14:   Rhythmic Patterns

Details of the study units are shown under each module.

Set Books

Books and other publications are recommended at the end of each unit. It is in your own interest to buy the recommended materials and to study them particularly the sections specifically recommended.

Assessment

The self-assessment exercises are for your practice. The Tutor-marked Assignments (TMAs) are to be assessed by your tutor for a continuous assessment score of 30 per cent. The final examination on the course accounts for 60%. Your score in TMAs and the final examination together will lead to your final score/grade in the course.

Tutor-Marked Assignments (TMAs)

At the end of every unit, there is a tutor-marked assignment which you are expected to carry out. Your total score from the assignments will be as indicated above….30%.

When you complete an assignment, send it, together with your **tutor-marked assignment file**, to your tutor. If for any reason you are unable to submit your assignment in time, inform your tutor to arrange an extension of time.

Course Marking Scheme

The following Table indicates a break-down of the entire course marking scheme.

Table 1: Examination and Grading

Assessment	Marks
Assignments 1-4 (the best three from all the assignments submitted)	Four assignments, marked out of 10%. The best three will be used to grade you, making a total of 30%
Final examination	70%
Total	100% of course marks

Course Overview

Unit	Title of Work	Activity Each Week	Assessment at end of Unit

1.	Language: Nature, Origins and Mediums	1	Assignment 1
2.	Major Components of Language; Defining Phonetics and Phonology	1	Assignment 2
3.	Phonetics and its Branches	1	Assignment 3
4.	The Phoneme and the Allophone	1	Assignment 4
5.	Organs of Speech	1	Assignment 5
6.	Speech Sounds/Production Processes	1	Assignment 6
7.	The Basic Sounds of English	1	Assignment 7
8.	Sound Patterning in English: Consonants	1	Assignment 8
9.	Sound Patterning in English: Vowels	1	Assignment 9
10.	Phonological System and Structure	1	Assignment 10
11.	Tone/Intonation	1	Assignment 11
12.	Syllable Structure/Juncture	1	Assignment 12
13.	Accentuation/Stress	1	Assignment 13
14.	Rhythmic Patterns	1	Assignment 14
15.	Revision	2	
16.			
17.	Examination	1	
Total		**17**	

Final Examination and Grading

The final examination on course ENG 241 will be of three hours duration and, as indicated already above, will be marked out of 70%. The questions in the examination will be based strictly on the information in the study units and will relate to the self-assessment exercises as well as the tutor-marked assignments. When you complete the last unit, i.e. unit 14, revise the entire course. Also, take a second look at the assignments to ensure your readiness for the final examination.

How to Get the Best from This Course

The National Open University of Nigeria (NOUN) has provided an opportunity for you to study through Distance Learning. This means that you have an opportunity to

receive university education which is not different in quality from that received through face-to-face learning in a conventional university. You must, therefore, seize every opportunity to concentrate fully on the study units knowing full well that they are of the same quality as those in the many other universities we have. Full concentration on the study units, on the text-books recommended at the end of each unit, and full attention to the assignments will all help you to achieve excellence in this enterprise.

Tutors and Tutorials

There are 8 hours of tutorials provided in support of this course. You will be informed about the dates, times and locations of the tutorials. You will also get to know the name and telephone number and e-mail address of your tutor.

Your tutor will mark your assignments and return them to you. When your assignments get back to you, note the comments and ask questions if there are issues you do not understand. Also ask your tutor questions if there are any parts of the study units or self-assessment exercises you do not understand.

Ensure that you keep strictly to deadlines, attend tutorials in the group you will be allocated and take a lively interest in all activities pertaining to your course.

Summary

ENG 241 is planned to make you knowledgeable in the most important starting points in general phonetics and the phonology of English. On the completion of the course, you will be well placed to appreciate some of the most essential issues for beginners in the study of general phonetics and the phonology of English. You should, for instance be in a position to understand the nature of language, sounds and their production in natural languages as well as non-segmental features such as intonation, accentuation/stress and rhythm.

You are welcome to the course!

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Unit 1:   Language: Nature, Origins and Mediums

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1.0   INTRODUCTION

It is commonly known that studies in phonetics and phonology are based on natural languages. Therefore, since language may be seen as the subject of phonetics and phonology, it would appear that a good knowledge about language will be a necessary background for an understanding of phonetics and phonology, especially at the introductory stage. Also, since language is expressed through mediums, it is important to understand the particular medium that concerns us in this unit.

2.0   OBJECTIVES

By the end of this unit, you should be able to
i)   explain what language is;
ii)   discuss aspects of its origin;
iii)   distinguish between natural and non human languages;
iv)   identify language mediums; and
v)   state how they are organised.

3.0   MAIN CONTENT

3.1   Language: Meaning and Origin

The simplest way to explain the term **language** is probably to say that it is a means of communication. Such communication may take place between individuals, groups and nations. Through language, people are able to live together to interact and to express their thoughts and feelings. The entire world bubbles and remains alive as a result of language. The world is, in a way, held together because people learn or acquire each others' languages thereby maintaining constant interaction and relationship. To use a modern expression associated with wireless communication, language helps mankind

to "stay connected!" Try to imagine how difficult life would be in the world, if there were no languages and mankind had to use gestures or other nonverbal expressions only for communication.

It is, however, almost disappointing that in spite of the communicative and social roles of language, nobody knows precisely how it originated. The matter has remained a speculation. One such speculation is the Divine Source. According to this source, God created Adam … and gave him the ability to speak … and whatsoever Adam called every living creature that was the name thereof (Genesis 2:19). There are other speculations such as the natural sounds source and the oral-gesture source (Yule 1996: 1-5). We have not gone beyond this point because the issue of language origin is not of a primary concern for us in this course. But it is good to have a hint about it, as done, so that those who are interested in finding out more about the topic can read it up in other sources. For now, it is enough to say that all the speculations lead to one direction: uncertainty about the origin of language.

Self-assessment Exercise 1
1. How does language enable us to "stay connected?"
2. State very briefly what you have learned about the origin of language.

3.1   3.2?? **Language: Technical definitions**
Even though the origin of language is not yet known, quite a few scholars have provided technical definitions. The definitions are useful because they tend to bring out the main features of language. Three of such definitions and their sources are cited below:
(i)   Sapir (1921: 18) sees language as:
> …a purely human and non instinctive method of
> communicating ideas, emotions and desires by means of
> a system of voluntarily produced symbols.

(ii)   Gimson (1980: 4-5) describes language as:
> …a system of conventional symbols used for
> communication by a whole community, the pattern of
> conventions covers a system of significant sound units,
> the inflection and the arrangement of words and the
> association of meaning with words.

(iii)   Hall (1968: 158) says that language is:
> …the institution whereby humans communicate and
> interact with each other by means of habitually used oral-
> auditory arbitrary symbols.

From the above definitions, we can isolate some features which are common to all languages. The first of these features is that language is arbitrary and conventional. This means that there is generally no necessary connection between a word and what it stands for. For instance, the word **school** has no necessary link between the name

and what it stands for. If English people or those who provided their various sources of borrowing had used the word **farm** to describe "an institution where learning (of all sorts) takes place", then by agreement and convention every speaker of English would have used the word in that way. Here we notice that even onomatopoeic words … words whose pronunciations suggest their meanings such as **clean, sneeze, flush** … are still subject to the arbitrary and conventional reference.

Secondly, we observe from the definitions that language is non instinctive. This means that it is an acquired or learned behaviour. A child born into a society acquires the language of its environment, and does so effortlessly. Do you remember how you acquired your first language? You hardly can! This is because the process of acquisition is normally without any really conscious effort, hence the description **effortlessly!** If the same child goes on to *learn* another language – a language different from the one he has acquired – he learns with some amount of effort and determination. The degree of success will depend upon a large number of factors, the most important being perhaps the child's innate ability at language learning, the quality of the person he takes as his model and the suitability of the environment for learning. You can see that while you acquired your first language effortlessly, you are still struggling to learn the English language which is a second language in Nigeria.

Thirdly, all the definitions show that language is essentially used among human beings. However, since it is commonly known that birds, animals and even machines have their own language, we can say that the three explications relate to "natural" languages i.e. languages used by human beings – languages into which human beings are born. The other languages may be said to be "artificial" or "nonhuman." Such include animal and machine language. There are also artificial languages crafted from existing natural language(s). These include **Esperanto** which was crafted in the late 19th century for international communication and the Nigerian **Wazobia**: "Wa-zo-bia" coined from the word meaning **come** in the three languages spoken by the larger ethnic groups in Nigeria (Hausa, Yoruba, Igbo) in an attempt to solve the problem of a lingua franca in Nigeria. It is important to note that artificial languages are not generally known to succeed, particularly when compared to natural languages which are culturally transmitted, and hence their chances of continuity are assured.

Self-Assessment Exercise 2
      (i)   Briefly explain the traits which unite all natural languages.
      (ii)   Briefly distinguish between *natural* and other forms of language.

3.2   Language: Its Mediums
A further highlight from the three explications of language in the last section is that languages are realized through symbols which are either oral-auditory (spoken) or graphic (written). This means that languages are made up of symbols which are either spoken or written. The majority of attempts to explain language state that it is made up of phonic, vocal, oral-auditory conventional symbols. The majority of sources on language indicate that speech is prior to writing. This means that practically all natural languages are usually first spoken and later written, if necessary. This explains why it

is true that there are many languages in the world which are not written whereas all are spoken. This is what is often described as the "primacy of speech." Sapir (1949: 1) summarises this primacy of speech thus:

> Language is ***primarily a system of phonetic symbols*** for the expression of communicable thought and feeling. In other words, the symbols of language are differentiated products of the vocal behaviour …

From the above, we have seen that natural languages are expressed through speech or through writing. These are the two main language mediums. Spoken language consists of sounds – organised sounds – which result from the action of the speech organs. The organised sound is perceived via hearing. For this reason the spoken medium is often called the **aural medium**. This is so because it is the sense of hearing that is utilised to perceive spoken language. The written language is produced by use of symbols that can be visually recognised by the reader, and is referred to as the **visual medium**. The written language is also used by the visually impaired in the form of the **braille** and similar systems. This consists of symbols that are identified through the sense of 'touch'. It is referred to as the **tactile medium** because the sense of **touch** is utilised. It is important to note that a medium is itself not language but a means through which language can be comprehended. This means that language is expressed through mediums. We shall return to the spoken and the written mediums in detail in the next unit.

A common feature of the mediums is that they serve as a link between the sender of a message and the receiver of it. What is normally perceived which affects the communication is the outcome of the activity which may be sounds or shapes. It is important to note that a language signal can be transferred from one medium to another. Thus, it is possible to write down what has been spoken and to read aloud what has been written.

4.0   CONCLUSION

In this unit, we have learned that human or natural languages can be distinguished by the features that are common to them. The features make it possible for languages to have organised sound systems and structure which is what you will learn in this course.

5.0   SUMMARY

This unit has shown that human language differs from artificial or non human language in that it has identifiable sounds and symbols that are organised. Three mediums through which human language is expressed were discussed: the aural, the visual, and the tactile. The relevance of the features of human language as the basis for description of sound systems (phonetics) and structure (phonology) is the focus of this course.

6.0 TUTOR-MARKED ASSIGNMENT

In about 2 pages, discuss the following topic and submit your answer to your tutor for assessment:

"The Things I now know about Language".

7.0 REFERENCES/FURTHER READING

Eka, D. & Udofot, I. (1996). *Aspects of Spoken Language*. Calabar: BON Universal Ltd.

Gimson, A.C. (1980). *An Introduction to the Pronunciation of English*. London: Edward Arnold.

Hall, R.A. (1968). *An Essay on Language*. Philadelphia and New York: Chilton Books.

Sapir, E. (1991). *Language: An Introduction to the Study of Speech*. New York: Harcourt Brace Jovanovich.

Sapir, E. (1949). *Culture, Language and Personality: Selected Essays*. California: California University Press.

Yule, G. (1996). *The Study of Language: An Introduction*. Cambridge: Cambridge University Press.

Unit 2: Major Components of Language

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        3.2   Major Components: Speech and Writing
4.0   Conclusion
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1.0   INTRODUCTION
A study of the major components of language may be approached through a consideration of the following: (i) levels of language such as phonology, phonetics, syntax, semantics; (ii) sounds and letters; (iii) speech and writing.
In order to have a balanced discussion, it is also important to consider overlaps between speech and writing. We refer to this here as mixed medium. A consideration of levels is important here also, but only two levels are discussed – phonetics and phonology being the key levels in this course.

2.0   OBJECTIVES
By the end of this unit, you should be able to:
    (i)   identify the major components of language;
    (ii)   distinguish between sounds and letters;
    (iii)   differentiate between speech and writing;
    (iv)   establish the relationship, other than differences between speech and
            writing.

3.0   MAIN CONTENT
3.1   Major Components: Sounds and Letters
One simple way to explain the term speech s*ound* is to see it as a unit of speech which is produced by the human speech organs. In a way, it is the most important component of language being the most frequently used in all languages including unwritten ones. Sound is usually heard. Here we can compare speech sound to noise which is also usually heard but whereas noise is a distraction and is also often meaningless, speech sound is an organised realisation from a natural language. The International Phonetics Alphabet (IPA) comprises the symbols that are used to represent speech sounds (see charts in Module).

For example, the symbol /i:/ represents the vowel sounds in the following words *bee* /bi:/ *tea* /ti:/, and *theme* /θi:m/. So, while the point remains that speech sounds are normally heard, it is equally true that they can be represented in writing. The number of speech sounds that exist in a language is determined by the difference the sounds make in meaning. For instance, the English vowels /ɔ, ɛ, ʊ, ɔ: / make a difference in meaning in the following words: /pɔt/ /pɛt/, /pʊt/, and /pɔ:t/.

Sometimes the word 'sound' is confused with the word 'syllable'. Such confusion should be avoided. A syllable is made of up of speech sounds and is considered to be the minimum speech unit. A syllable, as we shall see below, is sometimes the size of a word or the size of a speech sound. For instance, the word *bat* /bæt/ has one syllable which is one word; *our* /avə/ has one syllable which is pronounced as one (speech) sound (especially, if viewed as a triphthong; otherwise, it consists of two syllables made up of /av + ə/) and *Dav-* /deiv-/ in the word *David* is one syllable (with three speech sounds- d ei v). We have gone into these explanations and illustrations to ensure that you understand the use of the word 'sound' or speech sound.

Ordinarily, however, when we write in a language, we make use of letters of the alphabet. Letters are normally seen while, in comparison, (speech) sounds are normally heard. However, sounds and letters are related in that letters are the symbols with which speech sounds are represented on paper. Despite the above distinction, it is interesting to note that sounds and letters sometimes are of equal value. This happens in languages which are spoken the way the words are written. The majority of African and Nigerian languages are of this group. Can you cite examples from your language? For the English language, one to one sound-letter correspondence is an exception rather than the rule. For example, while the alphabets 'k, g, p, b, m, n, t,' etc correspond to the sounds they represent in words like

king   [kiŋ]
go   [gʊə] əʊ
pot   [pɔt] ɒ
bomb   [bɔm] ɒ
man   [mæn]
name   [neim] eɪ
type   [taip] aɪ

but, the letter alphabet 'a' is used to represent different vowel sounds in English:

late   [ei] [leit]
farther [a:] [fa:ð ə]
man   [æ] [mæn]
again   [ə] [əgein]

Similarly, the consonant sound /f/ is represented by the different letter alphabets:
f as in fine [fain]
ff as in off [ɔ:f]
fe as in life [laif]
ph as in physics [fɔziks]
gh as in cough [kɔf]
The letter 'c' of the English alphabet is pronounced as [s] in the words: *city* and *cite*, [sɔtə] [sɪtɪ] and [sait] [saɪt] while the same sound is [k] in the words *cup* and *cow:* [kɔp] [kɒp] and [kaʊ].
USE EXACT/CORRECT PHONEME SYMBOLS AS SHOWN

Self-Assessment Exercise 1
Briefly distinguish between speech *sounds* and *letters* in natural language.

3.2   Major Components: Speech and Writing

Spoken and written language display many important differences. The most obvious of the differences is that speech uses the medium of phonic units produced by movements of the vocal organs while writing uses the medium of graphic units, with symbols.

Apart from these physical differences there are other differences:

1. In speech, the focus is on clarity; therefore we tend to use simple words. This saves the listener the trouble of having to look up meanings of words from a dictionary. In writing emphasis is on appropriateness of usage. Even when an appropriate difficult or technical word is used in writing, the reader has every opportunity to confirm its meaning and usage from a dictionary.

2. In speech, there seems to be always a greater degree of repetition and the use of softeners such as 'you see, you know, what I mean is….' than in writing. This is because in speech, one does not have an enormous amount of time to think out new facts or illustrations especially if the speech is impromptu (delivered without previous preparation). In writing, the writer has the opportunity to choose between alternatives, thereby avoiding repetition.

3. Speech is made of sounds and is produced for the ears. Writing is made up of symbols and is produced for the eyes.

4. Speech is time-bound and dynamic. It is often in a situation of interaction between the speaker and his audience. Writing is space-bound and static. Your audience may be separated from you in space and in time.

5. Meaning in speech can be made clear through such extra linguistic cues like facial expression, gestures or applauding. Writing does not easily lend itself to these or other extra linguistic cues. In writing therefore, there is need to clearly state what you mean very graphically to make your communication intentions self-evident

Self-Assessment Exercise 2
Briefly distinguish between *speech* and *writing*. Which of these is of greater concern for you in this course?

4.0   CONCLUSION

In this unit, we can conclude that speech sounds and letters as well as speech and writing are very important components of natural language. However, we have also seen that there are illustrative cases in which both sounds and letters have the same linguistic value and that speech and writing sometimes overlap.

5.0 SUMMARY

In this unit, we learned about the nature of (speech) sounds as well as letters as components of natural languages. We also learned about the differences between them as well as the exceptions to the general occurrences.

6.0 TUTOR-MARKED ASSIGNMENT

Discuss in detail the view that sounds and letters as well as speech and writing are not always different in natural languages.

7.0 REFERENCES/FURTHER READING

Abercrombie, D. (1975). *Elements of General Phonetics*. Edinburgh: Edinburgh University Press.

Akpan, E. (1987). "Expressive Communication as a Responsive Behaviour". In: Unoh, S. O. (ed), *Topical Issues in Communication Arts*, Vol. 1. Uyo: Modern Business Press Limited, pp. 294-308.

Crystal, D. (2001). *The Cambridge Encyclopedia of the English Language*. Edinburgh: Cambridge University Press, pp. 290-297.

Eka, D. & Udofot, I. (1996). *Aspects of Spoken Language.* Calabar: BON Universal Ltd.

Unit 3: DEFINING PHONETICS AND PHONOLOGY

1.0 INTRODUCTION

The dual function of language makes it possible for one to study human language at any linguistic level. In the language hierarchy, 'Phonetics' comes first and it is followed by 'Phonology'. Phonetics constitutes the study of the smallest unit of speech and it provides the raw materials for phonology to build on. As such, without phonetics there would be no phonology. The aim of this unit is to help you understand the basics of linguistic study, especially as it relates to phonetic/phonological study.

2.0   OBJECTIVES

At the end of this unit, you should be able to:
define Phonetics and Phonology
explain the relationship between Phonetics and Phonology
distinguish Phonetics from Phonology
identify the different aspects of Phonetics and Phonology
explain their functions in natural language

3.0   MAIN CONTENT
3.1   Defining Phonetics and Phonology
3.1.1   Phonetics
Phonetics is concerned with the study of the sounds of natural languages…languages into which human beings are born. You are able to recognise the difference and distinguish between sounds of the English language. The approach to phonetics is scientific in the sense that its analysis of the subject matter is accurate and verifiable. You will also be able to identify the restrictions in the occurrence of English consonants and vowels. For example, the string of consonants *zbf is not permitted in English, but [str-] is, as in [streit].

Phonetics is the study of production of sounds as produced by the organs of speech. It deals with the analysis of the sounds of languages in terms of articulation, transmission and perception. Phonetics seeks to identify sounds that constitute speech units which are distinct from all other possible human sounds.

There are three major branches in the study of phonetics, namely acoustic Phonetics, articulatory Phonetics, and auditory Phonetics.

Acoustic Phonetics.
This deals with the transmission of speech sounds through the air (sound waves). Different instruments are used to measure the characteristics of these sound waves.

Articulatory Phonetics.
Articulatory phonetics is the study of how speech sounds are produced. Sounds are classified according to the place of articulation in terms of the organs of speech used in their production (bilabial, alveolar, palatal), and according to manner of articulation in terms of how airflow from the lungs is obstructed in their production e.g. stops, fricatives, affricates, etc.

Auditory Phonetics.
Hearing, or audition, is one of the traditional five senses, and refers to the ability to detect sounds. In human beings hearing is performed traditionally by the ears which also perform a function of maintaining balance. A common rule of thumb used to describe human hearing is that human hearing is sensitive in the range of sound wave or frequency of 20 decibel or Hertz to 20 kHz. Auditory phonetics studies how the human hearing organ perceives sound.

The above statement implies that phonetics is approached by first determining the basic sounds (vowels and consonants) of natural languages. In a phonetic study, square brackets [ ] are used to enclose phonetic symbols. For instance to indicate the consonant sounds of the following English words: *boy, saw, too*, square brackets are used by convention:

[b] as in boy: [bɔɪ]
[s] as in saw: [sɔ:]
[t] as in too: [tu:]

Phonemes, which are the distinguished sounds in human languages, constitute the basic unit of study in Phonetics.

3.2   3.1.2??**Phonology**
Phonology, on the other hand deals with the organisation, grouping, patterning and distribution of the basic sounds of natural languages (vowels and consonants). It studies the restrictions and regular patterns of sound combinations. The syllable is the basic unit of study. Symbols which are used to indicate the pronunciation of sounds,

syllables or words are written within slanting lines / /, sometimes called slashes or oblique slashes, following phonological convention.

When the differences in sound combinations are as a result of non-segmental phenomena like tone, intonation, rhythm and accentuation, it is referred to as **suprasegmental** or prosodic phonology. For example, when the first syllable in the word *import* is stressed, it constitutes a difference in meaning in that it functions as a noun, but as a verb if the stress is on the second syllable.

In phonology, distinctive features of speech sounds (otherwise called phonemes) are determined and used to describe, compare and contrast phonemes. The distinctive features of a speech sound refer to the group or bundle of features which differentiate a sound from other sounds. The features are derived from the parameters for classification of sounds. Consonants are classified according to the parameters of place and manner of articulation, and voicing. Vowels are classified according to the parameters of tongue height, rounding of the lips, and length of production, among others. Note pls: Generative phonology recognizes speech sounds, NOT phonemes.

Below is the distinctive feature chart for consonants and vowels in English:

For example, /iɔ/? and /uɔ/? are distinctive in English because of the bundle of features that mark each sound out as shown below:

/**i** / /**u** /

| + High |
| - Low |
| - Back |
| - Round |

| + High |
| - Low |
| + Back |
| + Round |

Phonological studies or analysis is also concerned with how sound patterns are conditioned in the context of other sounds. For example, plural formation occurs in English by adding a suffix '-s' to a noun root morpheme. The suffix, '- s' has three variants known as allomorphs /-s/, /-z/ and /ɪz/ and their occurrence is conditioned by a phonological rule.

3.3 3.2??Phonetics and Phonology

The relationship between phonetics and phonology is such that human speech is the subject matter. However, Phonetics is the starting point while phonology takes off from where phonetics ends. The example of aspiration in English will illustrate this relationship. Through phonetic analysis, the consonant /p/ is a distinct speech sound in English in terms of the parameters of classification, place and manner of articulation. Through phonological analysis, /p/ is a distinct phoneme because it constitutes a difference in meaning when in combination with other sounds in a syllable. Also, /p/ is produced with a puff of air when it occurs in word initial position and before a vowel as in *people* [pi:pl]. This production of /p/ is a variant called an allophone. It is aspirated and represented as [p^h]. The second /p/ in *people* does not meet the

conditions of occurrence and so is not aspirated. Note however, that the aspirated [p^h] is not a distinct sound nor is it a distinct phoneme of English. In other words, its occurrence in words in contrast to unaspirated [p] does not constitute a difference in meaning.

4.0   CONCLUSION

Phonetics is the starting point in any language as it deals with how sounds are produced (articulated), sent across (transmitted) and perceived (reception). In other words, phonetics accounts for how human beings generate speech sounds, the physical properties of the sounds and how they are received by the hearers, while Phonology focuses on speech sounds as well, but in a different way. It deals with how the sounds of a language are identified, classified and organised to function in that language.

5.0 SUMMARY

In this unit we have discussed the concepts phonetics and phonology. The study of human speech begins with phonetic analysis and is followed by phonological analysis. Phonetics has to do with the physical realisation of sounds as produced by the organs of speech. Phonological studies/analysis takes off where Phonetic studies/analysis ends.

6.0 TUTOR MARKED ASSIGNMENT

1. Define Phonetics and discuss its various components.
2. What is Phonology?
3. Explain the relationship between phonetics and phonology.

7.0 REFERENCES

Adetugbo, A. (1993). *English Phonetics: A Course Text*. Lagos: University of Lagos Press

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UNIT 4: INTERFACE BETWEEN PHONETICS AND PHONOLOGY

Table of Contents

1.0 INTRODUCTION

Interface between phonetics and phonology refers to the relationship between the two levels of language studies. One of the characteristics or designed features of human language is its duality. This feature makes it possible for one to study human language from any if its strata. Every language can be studied from the level of phonetics, phonology, morphology, syntax, semantics and pragmatics, among others. Each language level is related to each other and the level of relationship depends on how beneficial is one level to the other. It is this level of relationship we want to find out between Phonetics and Phonology in this unit.

2.0. OBJECTIVES

The aim of this unit is:
- To establish the relationship between Phonetics and Phonology as levels in language study.
- To find out the extent of the relationship.
- To find out whether the relationship is mutual
- To know whether the relationship extends to other levels as well.
- To know the essence of this relationship in language study.

3.0 MAIN CONTENT

3.1 INTERFACE BETWEEN PHONETICS AND PHONOLOGY

The dual nature of human languages makes it possible for languages to be broken down into various units so that it is possible to be learnt. Language can be studied at different linguistic levels such as the Phonetics (sounds), Phonology (structuring of sounds), Morphology (words), Syntax (sentence) and Semantics (meaning), Pragmatics (level larger than meaning- meaning in context). In linguistics the study of sounds is in phonetics and phonology. The words are studied in morphology (and lexis) while sentences are studied under syntax (or grammar). All these help in the development of the complex nature of human languages.

Phonetics and phonology are so closely related that they can hardly be separated. However, they are studied at different levels of linguistic analysis, because they constitute different levels of language structure. As earlier said, the dual nature of human language makes this a reality.

Phonetics as a level of language study deals with the physical realization of sounds as produced by the organs of speech. It deals with the study and analysis of the speech sounds of languages in terms of articulation, transmission and perception. Thus, phonetics has three major components, which are acoustic phonetics (the physics or instrumental production of sounds), articulatory phonetics (production of sounds with the speech organs), and auditory phonetics (perception of sounds with the ears). Details deriving from these branches (of phonetics) facilitate the development of writing systems, that is, orthographies. Without phonetics, it will be extremely difficult to study phonology as it produces the basic raw materials or building blocks for phonology to build on.

Human beings produce a whole lot of sounds ranging from the non-linguistics (belching, grunting, and hissing) to the linguistics (consonants and vowels; stress and tones/tunes). Out of all the sounds produced some of them are not linguistically relevant. So, phonetics deals with the production of the relevant sounds for speech in human languages.

These sounds in phonetics do not belong to any particular language, they are universal sounds. Phonetics basically deals with all possible speech sounds by human beings, the useful and the seemingly useless sounds. Human beings can produce even the novelty sounds, which nobody had ever produced or heard.

These phonetic and non-phonetic segments which are universal sounds constitute the raw material for phonology to build on. Without some output from phonetics there will be no input for phonology. It is where phonetics leaves off that phonology starts. N It is enough to say that there would not have been any phonology if there was no Phonetics.

Phonology is a branch of linguistics that deals with useful sounds of a specific language. It studies the ways sounds of a language are organized into systems. At the phonetics level a wide range of sounds, which are not phonemic, are produced; only a very small number of these sounds are contrastive or significant for meaning (i.e. phonemic). It is these significant speech sounds that phonology is concerned about.

Adetugbo (1992:103) says, "phonology takes phonetic facts…but goes further to study speech sounds as constituting a system in any language" Among the possible sounds capable of being produced by human beings, only a minute number of them can be combined to bring about meaningful utterances in a language. Atolagbe (2000:11) defines phonology as the sound system of a language, the speech sounds that are combined into meaningful and acceptable patterns for communication purposes, in a specific language.

Phonology is particular to a language. Several languages may share the same or similar sound segments, but structure these sounds differently to suit the system of

that language; for example English and Yoruba have the sound /p/. This sound is structured differently by each language based on phonological rules of each language (grammar is basically rule governed). Thus, we have Yoruba phonology, Igbo phonology, Hausa phonology and English phonology.

After phonetics has produced the useful and the "useless'' sounds it stops its work. It is here that phonology comes in to pick and select the sounds and the non-sounds from the phonetic sound repertoire. Remember, we have said that 'Phonology is specific to a particular language'. No two languages share exactly the same rules in their organization of sounds. So, each language after selecting the sounds that are useful to it now structures these sounds to suit the rules of that language. It builds on the raw material produced at the phonetic level.

4.0 CONCLUSION

Phonetics is the science of language that deals with the study and analysis of the speech sounds of languages in terms of articulation, transmission and perception, while Phonology is a branch of linguistics that deals with useful sounds of a specific language. It studies the ways sounds of a language are organized into systems. The two are closely related in that without one the other cannot exist. They are used in language development, mostly in the development of a language orthography, transcription and establishment of contrastive units in languages.

5.0 SUMMARY

Interface between phonetics and phonology refers to the relationship between the two levels of language studies. There is a very close relationship between Phonetics and Phonology. Phonetics is the minimum level in language in the hierarchy of language analysis. It is general in that no language can lay claims to it. It contains the useful and the seemingly useless sounds of languages. It is these useful and useless sounds of the language that constitute the raw materials which Phonology needs to build on. Thus, Phonology is a branch of linguistics that deals with useful sounds of a specific language. It studies the ways sounds of a language are organized into systems.

The relationship between Phonetics and Phonology is that in the hierarchy of language studies, Phonetics comes first and it is followed by Phonology. Secondly, Phonetics produces the raw materials which phonology builds on. Without Phonetics there will be no phonology, phonology cannot be studied without phonetics.

6.0 TUTOR MARKED ASSIGNMENT

1. Phonetics produces the raw material which Phonology builds on. Discuss.

2. In your opinion, can phonetics be studied without phonology?

3. What is the level of relationship between Phonetics and Phonology?

4. Phonetics is general while Phonology is specific. Discuss these claims with corpus or data.

7.0   REFERENCES/FURTHER READING

Adetugbo, A.A. (1993) *English Phonetics: A Course Text.* Lagos: University of Lagos Press.

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MODULE TWO: PHONETICS

Unit 1: Phonetics and its branches
Unit 2: Speech Sounds/Production Process
Unit 3: The Basic Sounds of English

Unit 1: Phonetics and its Branches

Table of Contents

1.0   INTRODUCTION
In this unit, you will be introduced to the meaning of, and the procedure for, studying phonetics. You will also be exposed to the different branches of phonetics, how they differ from each other as well as what they share in common.

2.0   OBJECTIVES
By the end of this unit, you should be able to:
i)   do phonetic analysis;
ii)   identify the different branches of the subject; and
iii)   show how the branches relate to each other.

3.0   MAIN CONTENT
3.1   Phonetics: Meaning and Procedure- Compare with Table of contents above!
In Module 1, you were introduced briefly to the study of phonetics. Phonetics is the scientific study of human speech sounds. The study provides methods for the identification, description, classification, and transcription of human speech sounds.

Definitions of Phonetics
1) Identification of human sounds
2) Description of ??

3) Classification of ??
4) Transcription of ??

3.1.1 Phonetics: Articulatory

Articulatory phonetics refers to the approach to the phonetic medium that seeks to explain and classify speech sounds in terms of the variations in the production of the speech sounds.

It is about the most highly developed and longest established branch of phonetics. It sees speech as an activity of the speaker and concentrates attention on the human speech organs and how these organs function singly and in combination with each other to modify exhaled air from the lungs into speech sounds.

In articulatory phonetics speech sounds are described in terms of the organs which produce them and how these organs behave during their production. For instance a description of the sound [p] will include the fact that the two lips come together and momentarily completely block the passage of air coming from the lungs and then a sudden release of the air or a sudden parting of the lips occurs resulting in some kind of **explosion**. It is for this reason that the phonetic description of [p] includes the terms "bilabial plosive". In this course we are mainly concerned with this aspect of phonetics – Articulatory Phonetics. Unit 5 of this Module provides essential information on the organs of speech.

3.2.1 Phonetics: Auditory

This branch of phonetics sees speech mainly as an activity of the hearer: how the hearer perceives and interprets speech sounds. This branch of phonetics is also sometimes said to be perceptual. In addition to being concerned with the basic sounds of natural languages, it deals with such properties of sounds as pitch, accentuation and loudness – non segmental issues which affect sound perception.

Generally, the hearer does not listen to a sound for its own sake; he listens in order to get meaning. This means he listens for sounds in association with other sounds. As you become mature in your phonetic training, you will be able to listen to sounds analytically – listening in order to appreciate specific sound features. The person who has not received phonetic training should, other things being equal, be different from you. He would be one only capable of listening naturally – more concerned with meaning than with the sound features which produce the meanings.

 Self-assessment Exercise
(a) Why is auditory phonetics sometimes said to be **perceptual?**
(b) Distinguish between listening **analytically** and listening **naturally**.

3.2.3.   Phonetics: Acoustic

This branch of phonetics concentrates attention on studying the physical properties of the sound waves generated when the speech organs go into activity. It also seeks to explain how sound is transmitted through the air from the speaker to the hearer.

Recently this branch has made a lot of progress and has helped to clarify a lot of information relating to articulatory phonetics. Acoustic phonetics has emphasized the fact that speech is a continuous flow of speech sounds. It utilizes machines such as the spectograph and the oscillomink to measure sound waves particularly the frequency and the amplitude of sound wave. Engineers, builders and construction experts frequently make use of acoustic information. For the purpose of ensuring accuracy of information, machines and other instruments used for acoustic measurement must be properly maintained by qualified engineers. Laboratory instruments which are well maintained will hardly ever have "bad days." i.e. days during which they break down or produce wrong information.

3.2.4 Relationship of the Branches

The different branches of phonetics may be taken to represent separable approaches to the study of the subject. Any of the approaches may be adopted because of the investigator's purpose or convenience. For instance, an architect who has to design a sound–proof studio, theatre or auditorium would find acoustics very useful. A big hall in which people find difficulty in hearing an address from a central position, may be said to have poor acoustics. A well constructed language laboratory is normally said to possess good acoustics. On the other hand a linguists, particularly an expert in general phonetics and the phonology of a particular language, finds articulatory phonetics – the realization of sounds of natural languages – very important. Equally, such an expert finds auditory phonetics – the perceptual aspect of sounds – very relevant to his interest.

In some respects, however, the three branches are interconnected. For instance, if we pay attention to realization (pronunciation) and perception (hearing) of the sounds [p] and [b], which are both bilabial plosives, all the three branches would be seen to be relevant: articulatory phonetics would add the dimension of vibration of the vocal chords or folds to bring about voicing in the case of [b] and the absence of vibration of the vocal chords in the case of [p].

Auditory phonetics would supply information that differentiates voiceless [p] from voiced [b] in terms of the voicing heard for [b]. In a third way, the differences would feature more prominently in an acoustic analysis of the same sounds where **evidence** of voicelessness would be available in the sound wave for [p] and **evidence** of voicing would be available in the sound wave for [b].

So, while the three branches of phonetics: articulatory, auditory and acoustic are separate (and separable) all the three are, as we have seen above, also united in their functions. The three branches also underlie the study of phonology.

4.0   CONCLUSION

From this unit, we have seen that phonetics is separable into three branches – articulatory, auditory and acoustic. We have seen that each branch is important and that also the three are also interconnected. Also, they all relate to the study of phonology.

5.0 SUMMARY

In this unit, you have studied three branches of phonetics – articulatory, auditory and acoustic – and the main concern of each branch. You have also studied the branches which are the main concern of the phonetician (articulatory and the auditory) and the one which, apart from being of technical importance to the phonetician, is also of use to people in other walks of life such as architecture and building engineering. You are now adequately prepared to begin a study in which your knowledge of articulatory phonetics in particular will come in handy.

6.0 TUTOR MARKED ASSIGNMENT

In about 2 pages of your answer paper, discuss the branches of phonetics, making certain that in your discussion you indicate how the three branches are related. Submit your answer to your tutor for assessment.

7.0 REFERENCES/FURTHER READING

Eka, D. and Inyang Udofot (1996): *Aspects of Spoken Language*. Calabar, BON Universal Ltd.

Gimson, A.C. (1980): *An Introduction to the Pronunciation of English*. London: Edward Arnold.

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Unit 2:   Speech Sounds/Production Processes

Table of Contents
This unit introduces you to processes for sound production. The unit is arranged thus:

1.0   INTRODUCTION
In this unit, you are going to be exposed to speech production processes in natural languages. Before then you will revisit the nature of speech sounds. You will also be exposed to a technical matter: articulation of sounds.

2.0   OBJECTIVES
By the end of this unit you should be able to:
    (i)   explain the nature of speech sounds;
    (ii)   isolate the focus of speech production;
    (iii)   explain the main processes of speech production
    (iv)   discuss articulation of sounds in natural languages

3.0 MAIN CONTENT
3.1 The Nature of Speech Sounds: Revisited
One way to describe speech is to see it as a medium of transmission for language. It is the phonic substance of language, as compared to writing, the graphic substance. That it constitutes the phonic substance presupposes that the spoken medium (as opposed to the written medium) is made up of sounds. To be more specific we relate sounds to speech and refer to them as *speech sounds*.

This implies that a speaker utters sounds which combine to form syllables (syllables, if they are not of word status) are combined to form words while words are combined to form groups and longer stretches of utterances with which human beings communicate. The whole process of production and perception of speech which we are concerned with in this course is known as speech processing.

3.2   Speech Production: The Focus

Normal people speak very many times each day: to members of their families, to those in their communities and to others in the larger society. Particularly in a situation of first language acquisition, the effortless nature of the acquisition of the speaking skill makes it understandable that some speakers hardly ever ask: What is speech? How is it produced?

For those who study linguistics (particularly those whose interest is mainly in the branch called phonetics), and for those who study the way languages operate, it is important to understand what speech is and how it is produced. These are our concerns here.

3.3   Speech Production Process [involves Initiation, Phonation and Articulation]

3.3.1   Respiratory and Phonatory Stages   [vocal folds/chords preferred to vocal **lips** pls]

When air leaves the lungs (where it is normally stored), it moves through the trachea to the larynx which covers and encloses the vocal bands (vocal cords or vocal folds). At the centre of the vocal folds, there is space (the glottis). When this space is closed, the vocal folds are brought together through the action of the elastic membranes which stretch from the front to the back, across the larynx. This closure of the vocal folds naturally leads to a building up of air pressure below them. The air so built up forces itself through the vocal folds in periodic puffs. The vocal folds will then open under this pressure, first from the bottom and then upwards creating a kind of rippling action. The combined effects of the forced opening and closing results in a vibration of the vocal folds. A sound that comes with the vibration is normally voiced. Voice may, therefore, be seen as a technical term that refers to phonation – a pre articulatory output from the vibration of the vocal folds. All voiced sounds in all natural languages are produced when the vocal folds are in a closed position – a position that prepares the way for vibration.

But the vocal folds do not always remain in a closed position: sometimes they are partially open and at other times they may be fully open. When they are partially open, the air that passes through them results in a whisper. When they are fully open, air passes through them without vibration and that results in the ensuing sounds being voiceless. Thus, the vocal folds help us to distinguish between voiced and voiceless sounds and when they assume a posture of intermediate opening, they help us to identify whisper. Perhaps more importantly, the vocal folds help us to distinguish between vowels and consonants: in the realization of vowels, in practically all natural languages, there is a vibration of the vocal folds. This follows the fact that all vowels in all natural languages are normally voiced. On the contrary, consonant sounds in all natural languages are either voiced or voiceless. These statements do not exclude the issue of devoicing which is possible in all cases.

3.3.2 Articulatory Stages

From the vocal folds, the air passes through the pharynx. At this point, the brain carries out a quick, sharp action, directing the soft palate (also called the velum)

particularly the uvula (the pendulous end of the velum), on what to do: the uvula will either be lowered to block the oral cavity or raised to the back wall of the throat to block the nasal cavity.

The blocking of the oral cavity takes place when nasal or nasalized sounds are to be realized. The blocking of the nasal cavity takes place when oral sounds are to be produced. It should however, be noted that in practice that almost any sound can be nasalized to demonstrate organ control although speech defect can also lead to it.

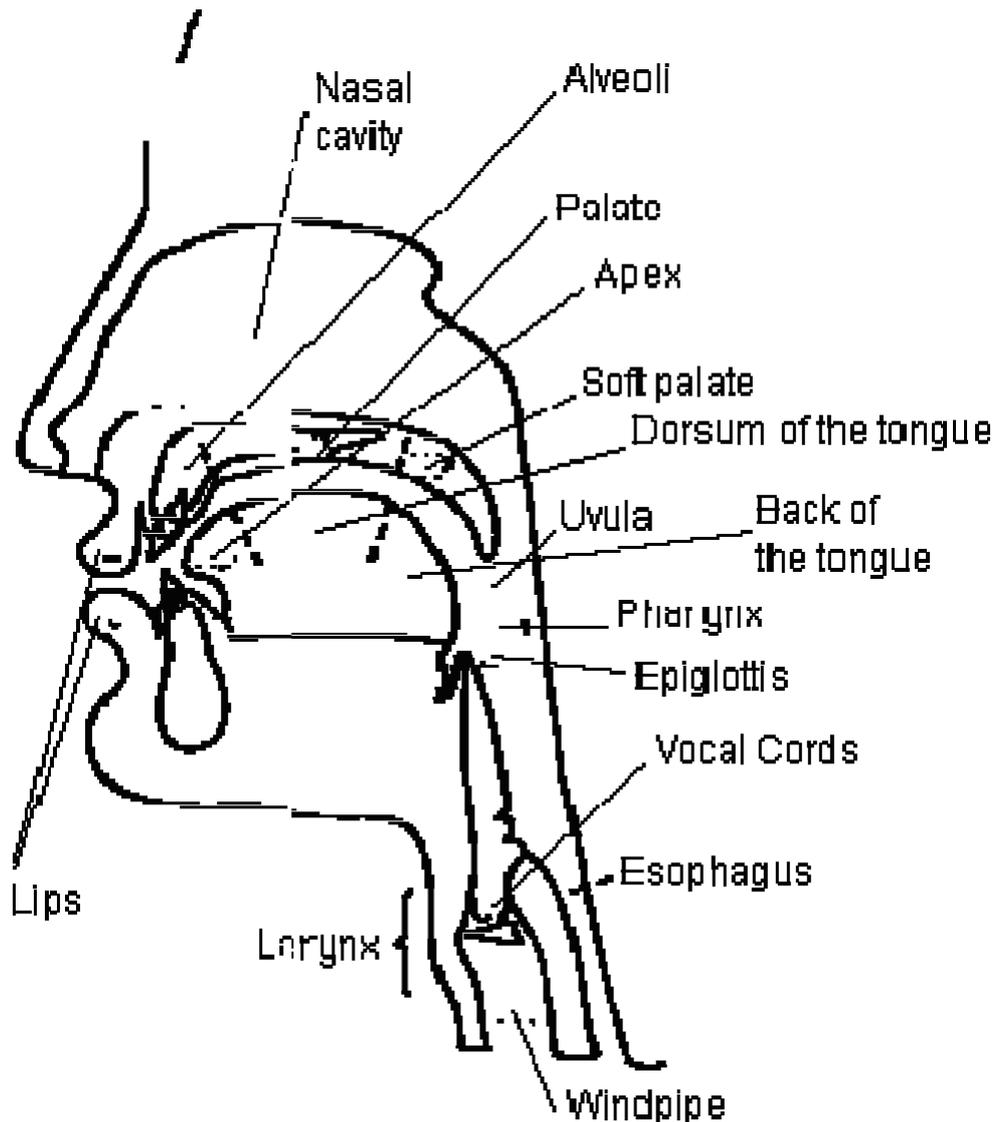The entire production process can be seen at a glance in Figures 4a/4b below:

Figure 4a: The Speech Production Process in the Upper Vocal Tract
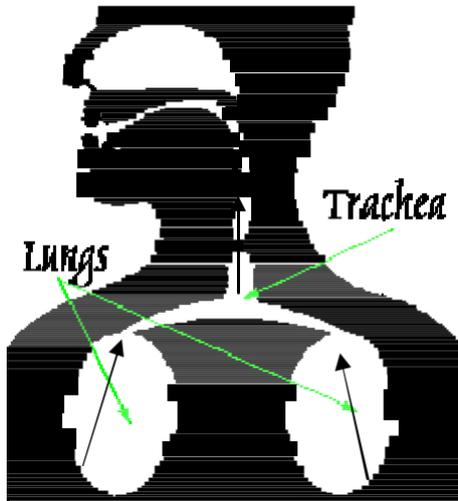**Adapted from courses Washington.edu**

Figure 4b: Arrows Showing Airstream from the Lungs to the Trachea

Figs. 4a & 4b. Diagrams showing speech production process.

Self-assessment exercise 2
Attempt a brief discussion of the process of sound production

3.4   Sound Articulation: Specific Issues
We have seen in this course that the terms *sound production and* sound articulation
refer to precisely the same events. So, practically everything we have discussed in this
course so far can come under the heading: sound articulation. In this section therefore,
we shall tidy up a lot of the things we have so far discussed in this course, but will
also place appropriate emphasis on issues which may be more gainfully discussed
under the heading sound articulation.
First, we can refer to the organs of speech as the articulators. In that case the
articulators may be seen as belonging to two groups – those which are relatively fixed
and those which are relatively movable. The fixed articulators are generally said to be
passive ones; the movable articulators are generally said to be active ones.

This is accurate from a physical/anatomical viewpoint: a fixed organ is inactive and
thus passive from the standpoint of mobility; a movable organ is agile and thus active
from the same standpoint of mobility. In phonetic terms however, a passive articulator
is not necessarily fixed in the physical or traditional sense: it is simply the articulator
that remains motionless, waiting (so to say), for the movable one to get to it for the
purpose of a particular sound articulation. The active articulator on the other hand is
phonetically the one that ensures or sparks off the articulation of a particular sound.
An illustration will make this clear: even though the upper/lower lips are generally
classified among the movable organs yet in the realization of sounds the upper lips are
(sometimes) the passive articulators while the lower lips are the active articulators, for

example in the realization of labio-dental sounds. Also, if in the articulation of a sound, the uvula is made to play rapidly against the back of the tongue, the uvula thus remains as the active articulator while the back of the tongue becomes the passive articulator…It is important to note that articulatory movements are largely upward movements (cf, Abercrombie, 1975:43), i.e. the active articulators which are largely located on the lower side of the vocal tract tend to *move upward* to meet the passive articulators which tend to be on the upper side of the vocal tract. So it is more accurate to say that while the great majority of the so called fixed organs of speech are passive articulators and the great majority of the so called active articulators are the movable organs, it is the specific role of a given organ at a given instance, that determines passivity or activity.

4.0   CONCLUSION

You have studied in this unit that speech production is a very important event in both phonetics and phonology. From this unit, you are also in a position to appreciate the roles played by specific human organs as well as the stages in the production of speech.

5.0   SUMMARY

From this unit, you have:

    (i)   revisited the nature of speech sounds;
    (ii)   studied speech production processes;
    (iii)   identified stages of speech production _ INITIATION WAS LEFT OUT!.

6.0   TUTOR-MARKED ASSESSMENT

6. Briefly state how you would trace the journey of any given sound from the time it leaves the lungs to the time it is produced. Specify the language.

7.0   REFERENCES/FURTHER READING

Abercrombie, D. (1975): Elements of General Phonetics. Edinburgh: Edinburgh University Press.

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Unit 3: The Basic Sounds of English

Table of Contents
This unit introduces you to a formal description of the basic sounds of a given language – English. The unit is arranged thus:

1.0   INTRODUCTION
This unit introduces you to various preliminary issues involved in the description of the basic sounds (of English) and then a formal description of such sounds.

2.0   OBJECTIVES
By the end of this unit, you should be able to:
(i)   explain the term **basic sounds;**
(ii)   identify the full range of basic sounds in English;
(iii)   explain the key matters involved in the description of the sounds;
(iv)   carry out a formal description of the consonant as well as the vowel sounds of English

3.0 MAIN CONTENT
3.1 Preliminary Steps to a Description of Vowels and Consonants
We have made the point in this course that sounds are better referred to by the use of symbols. That is precisely our targets in this section: to use symbols to represent sounds. Meanwhile, it is important to note that speech sounds in natural languages are traditionally known to fall into two groups: vowels and consonants. The vowels are those sounds which are generally produced (or realized) without any definite obstruction to the outflowing airstream used in their production. The realization of consonant sounds, on the other hand, always involves some definite form of obstruction which could be partial or total.

At this stage in your study, you are exposed to the basic sounds of one language (English) with appropriate illustrations. You are instructed to apply the same principles in the determination of basic sounds in your language. At the next section of this unit, you will be in a position to learn to **describe** each basic sound as a way of ensuring your greater mastery of the subject. The issue of speech organs is also very important. Turn to unit 5 of this Module and familiarize yourself with specific organs

which produce specific sounds. After that, study the following full list of vowels and consonants as preparatory steps to their description.

(a) **Vowels -DO NOT ITALICIZE SYMBOLS/SQUARE BRACKETS PLS**
1. [i:]   *as in eat, beam, fee.*
2. [ɪ]   *as in it, sit, city.*
3. [e] *as in egg, bed, fed.*
4. æ]   *as in atmosphere, pan, tan.*
5. [a:]   *as in ark, part, bar.*
6. [ɒ]   *as in on, pot, dot.*
7. [ɔ:]   *as in order, port, war.*
8. [ʊ]   *as in took, full, pull.*
9. [u:]   *as in ooze, pool, too.*
10. ʌ]   *as in up, bud, cut.*
11. [ɜ:]   *as in early, girl, stir.*
12. [ə]   *as in ago, forward, after*

These twelve are generally referred to as the pure vowels or the monophhongs. Beyond these, there are 8 sounds, each of double symbols – the first one marks **the starting point in the realization** and the second one marks **the direction** of movement. These are called diphthongs. The 8 diphthongs are:
13. [eɪ]   *as in age, maid, say.*
14. [aɪ]   *as in eye, tied, thy.*
15. [ɔɪ]   *as in oil, toil, boy.*
16. [əu]   *as in ago, home, so.*
17. [au]   *as in now, pound, how.*
18. [ɪə]   *as in ear, here, fear.*
19. [eə]   *as in pair, chair, hair.*
20. [uə]   *as in poor, tour, sure.*

As can be observed, each vowel in the 8 diphthongs, had already been listed, so the diphthongs are made up of selections from the pure vowels; a diphthong is a single vowel with two elements.

Still under the vowels, English has 5 triphthongs. Triphthongs are three sounds **in one**, usually with a diphthong followed by [ə]. The triphthongs are:
21. [ei+ ə; eiə]   *as in player.*
22. [ai + ə; aiə] *as in fire.*
23. [ɔɪ + ə; iə] *as in lawyer.*
24. [əu + ə; əuə] *as in lower.*
25. [au + ə; auə] *as in hour*

(b) **Consonants**
We have shown in section 3.0 that consonants constitute the second set of basic sounds in a set of basic sounds in natural languages, in this case English. In line with our approach, we list below the consonant sounds of English with appropriate

illustrations for the obvious reason that we shall revisit them for the purpose of **description**.

The consonants of English are: -ITALICS REMOVED HERE PLS

    [p]   as in pin, tipper, leap.
    [b]   as in boy, baby, babe
    [t]   as in tin, sitting, dart.
    [d]   as in do, divider, did.
    [k]   as in king, market, kick.
    [g]   as in good, plugging, mug.
    [f]   as in fire, fifty, life.
    [v]   as in voice, reviving, survive.
    [θ]   as in thigh, thought, path.
    [ð]   as in th is, breathing, bathe.
    [s]   as in sing, past, brass
    [z]   as in zoo, losing, booze.
    [ʃ]   as in shoe, washing, push.
    [ʒ]   as in measure, treasure, vision.
    [h]   as in hide, rehearse.
    [ʧ]   as in change, preaching, teach.
    [ʤ]   as in John, enjoy, judge.
    [m]   as in man, naming, comb.
    [n]   as in know, burning, none.
    [ŋ]   as in bring, singing.
    [l]   as in love, lulled, pull.
    [r]   as in rice, price.
    [w]   as in war, bewitch
    [j]   as in young, yes, mayor.

3.2   Formal Description of the Consonant Sounds of English

You are now in a position to combine your knowledge of the speech organs and of the consonant sounds of English to make sense of the following descriptions of English consonant sounds:

    [p]   *voiceless bilabial plosive.*
    [b]   *voiced bilabial plosive.*
    [t]   *voiceless alveolar plosive.*
    [d]   *voiced alveolar plosive.*
    [k]   *voiceless velar plosive.*
    [g]   *voiced velar plosive.*
    [f]   *voiceless labio-dental fricative.*
    [v]   *voiced labio-dental fricative.*
    [θ]   *voiceless dental fricative.*
    [ð]   *voiced dental fricative.*
    [s]   *voiceless alveolar fricative.*
    [z]   *voiced alveolar fricative.*
    [ʃ]   *voiceless palato-alveolar fricative.*

[ʒ]   voiced palato-alveolar fricative.
[h]   voiceless glottal fricative.
[tʃ]   voiceless palato-alveolar affricate.
[dʒ]   voiced palato-alveolar affricate.
[m]   voiced bilabial nasal.
[n]   voiced alveolar nasal.
[ŋ]   voiced velar nasal.
[l]   voiced alveolar liquid (lateral).
[r]   voiced alveolar liquid (rolled).
[w]   voiced bilabial semi-vowel.
[j]   voiced palatal semi-vowel.

Below is the English Consonants Chart

	Bilabial	**Labio-dental**	**Dental**	**Alveolar**	**Palato-Alveolar**	**Palatal**	**Velar**	**Glottal**
Plosive	p b		t d				k g	
Nasal	m			n			ŋ	
Liquid (lateral) Liquid (rolled)				L R				
Fricatives		f v	θ ð	s z	ɔ ɔ correct pls			H
Affricates					ɔ ɔ correct pls			
Semi vowels	w					j		

Fig. 5 English Consonant Chart

Self-Assessment Exercise
(a) Attempt a clear description of the following consonant sounds: [r, d, z, **ʔ,** m]
(b) Briefly distinguish between vowels and consonants from the viewpoint of production.

3.3   Formal Description of the Vowel Sounds of English
Just as you have done in the case of consonants, you are now in a position to describe the vowel sounds of English.
The twelve English vowels which qualify as pure vowels or monophthongs have conventionally been assigned numbers. These are PLS DESCRIBE CORRECTLY!!

1.   [i:]   close, front, unrounded, long.

2.   [ ]   *between close and half-close, front, somewhat retracted,*
          unrounded, short.= half-close, front, unrounded, short..
3.   [e]*between half-close and half-open, front, unrounded, short.*
4.   [æ] *between half-open and open, front, unrounded, short.*
5.   [a:]   *open, almost back, unrounded, long.*
6.   [ ]   *nearly open, back, rounded, short.*
7.   [:] *between half-open and half-close, back rounded, long.*
8.   [u]   *between close and half-close, back, rounded, short.*
9.   [u:]   *close, back, rounded, long.*
10   [ʌ]   *half-open, central,unrounded, short.*
11.   [ɜ:]   *between half-close and half-open, central, unrounded, long.*
12.   [ə]   *between half-open and half-close, central, unrounded, very short.*

The other vowels of English are combinations which result in either diphthongs or triphthongs, as we can see later in this section.

Below is the English Pure Vowels Chart- ENLARGE THE SYMBOLS PLS
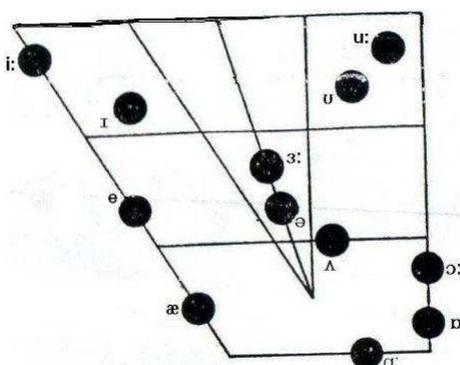
Fig. 6 Diagram illustrating the formation of the pure vowels of English

4.0   CONCLUSION - NO EXPLANATIONS ON THESE PARAMETERS FOR DESCRIBING THESE SOUNDS, VOWELS IN PARTICULAR- why so called?!!
      You have in this unit seen the differences between the vowels and the consonants and have learnt the formal description of each set of basic sounds. You can listen to the realization of the vowels and consonants as recorded on your enclosed audio tapes.

5.0   SUMMARY
      From this unit, you have been exposed to the conditions which help you to understand the formal description of the vowels and consonants of English. You are also now in a position to appreciate the formal description of the basic sounds of English.

6.0   TUTOR MARKED ASSESSMENT
      Select any 5 vowels and any 5 consonants of English and attempt a formal description of them. Do not include any entries from the self-assessment exercise of this unit.
7.0   REFERENCES/FURTHER READING

Eka, D. & Inyang Udofot (1996): **Aspects of Spoken Language:** Calabar, BON
 Universal Ltd.

Eka, D. (ed.) 1993: **Fundamentals of Communication in English**: Calabar, BON
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Gimson, A. C. (1980): **An Introduction to the Pronunciation of English**, London:
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MODULE THREE: PHONOLOGY

Unit 1: Sound Patterning in English: Consonants

Content

1.0   INTRODUCTION
In the last module, you were introduced to the phonetic description of English; this module introduces you to the phonological description of English sounds. This first unit brings to your attention the sound patterning: grouping and organization of English sounds. In this unit, you are going to study the patterning of sounds in English, with particular focus on consonants. The issues concerned relate to manner/place of articulation as well as the state of the glottis at the time of production.

2.0   OBJECTIVES
By the end of this unit, you should be able to:
   (i)   identify the consonant sounds of English;
   (ii)   describe the production process of the English consonants;
   (iii)   determine the consonant sounds according to the states of the glottis and the position of the vocal folds/cords.

3.0   MAIN CONTENT
3.1 Consonants
The previous module introduced you to consonants and vowels as the basic sounds of English. However, there are many more features of consonants which we need to be familiar with if our mastery of this set of basic sounds is to be adequate.

In their production, consonants show greater constriction of the vocal tract and are less sonorous, less prominent than their counterpart – the vowels. In a majority of the world's languages, a vowel can serve as a syllable or a word, but a consonant cannot, except it is accompanied with a vowel. Although we can produce certain sequences

like mm, mmn, sh, shr, zsr, etc. (all made up of consonants), such sequences cannot rightly be claimed to belong to any particular language, they are simply identifiable human sounds which may express some kinds of emotion in certain situations. In a majority of the world languages also, the consonants are marginal or peripheral in the structure of words while the vowels are central in such structural patterning.

In the production of sounds generally, there are three operative terms which all students of the subject should be firmly knowledgeable about. These are the terms **plosive, fricative** and **nasal**. Practically all natural languages have plosive consonants, fricative consonants and nasal consonants, in varying numbers and in varying distributional patterns.

In the realization of a plosive consonant, four stages described here in sporting terms are notable:

(i) Two articulators come together – the articulators may be the lips coming together; the tongue moving up to be in contact with the teeth ridge (alveolar ridge) or the back part of the tongue being in contact with the soft palate. We may refer to this as the preparatory or the "on-your-marks" phase.

(ii) The air from the lungs is now held completely in check; the united organs prevent it from escaping. We can call this the 'get -set' phase.

(iii) There follows a sudden parting of the organs, a process which allows the imprisoned air to escape. This is the 'go' or the ' plosion' phase.

(iv) What follows immediately in the wake of the plosion may be voicing or voicelessness depending on the action of the vocal chords: vibration or absence of it. We may call this the post-plosion (the "pp" stage).

These four stages are applicable to the articulation of plosive consonants in practically all natural languages. From these four stages we can also appreciate why **plosive** consonants are sometimes referred to as stop consonants.

With respect to English, six consonant sounds /p, b, t, d, k, g/ are often realized following the four stages outlined above. Of these six, /b,d,g/ are generally said to be voiced (even if they are not equally vigorously voiced in all word positions), while /p, t, k/ are generally said to be voiceless. It has also generally been claimed that the voiceless plosives are produced with a great exertion of energy and so the consonants are said to be **strong** or **fortis**.

On the other hand, it is generally claimed that the realization of the voiced plosives /b,d,g/ takes a comparatively less exertion of energy in their realization and so the plosives are said to be **weak** or **lenis.** The terms **fortis** and **lenis** are however not restricted to English alone. Indeed, any language in which the dichotomy of energy exertion is observable may employ the terms for the description of plosive or any other consonant sounds for that matter.

The next term in our preliminary discussion of consonant is **fricative**. Fricative consonants are realized when articulating organs get near to each other, leaving a small space between them. Because of the narrowed space, the air that passes through

makes some kind of hissing sound. Such consonants are often said to be **continuant consonants**, and this is because of the fact that the fricative sounds can be continued almost indefinitely so long as the speaker has enough air to continue the pronunciation at any given time.

The last of our operative terms is **nasal**. Nasal consonants are those which are realized through the nose. For this to happen, the soft palate must be lowered to cover the mouth cavity and this allows the nasal cavity free for the air to pass through. In all natural languages, consonants of this class exist and are explicable in terms of this kind of lowering of the soft palate. This possibility of lowering the soft palate during sound production presupposes that even oral sounds can be nasalized, (for illustration or for any other reasons).

The process of "nasalized'' is a very crucial one in sound production because it makes the important difference between two sets of sounds – oral and nasal. Ordinarily, all vowels and all consonants produced without a lowering of the soft palate belong to one class – oral sounds. All other sounds which pass through the nose cavity are nasal sounds. In a majority of the world's languages, all nasals are voiced. So, in a detailed description of a nasal, it is superfluous to say something like. ***Voiced velar nasal*** for /N/. It is enough to say: ***velar nasal***. It's here and now you can do away with voiced N

3.1   A Summary of Consonant Patterning

Consonants in English may be patterned according to place of articulation. Here, from the view point of:

(i)   **place** of articulation, English has four **bilabial** consonants – those sounds realized between the two lips: /p,b,m,w/

(ii)   two labio-dental consonants – those sounds realized with the lower lip and the upper front teeth: /f,v/

(i)   two interdental (or dental) consonants – those sounds realized with the tip of the tongue between the two rows of teeth: /θ,ð/

(ii)   seven alveolar consonants – those sounds realized with the tip of the tongue at the teeth ridge (alveolar ridge): /t,d,l,n,r,s,z/

(iii)   Four palato-alveolar consonants – those sounds realized with the tip of the tongue simultaneously against the hard palate and the teeth ridge: /ɔ,ɔ,ɔ,ɔ/

(iv)   one palatal consonant – the sound realized with the tongue touching the hard palate /j/

(v)   three velar consonants – those sounds realized with the tongue touching the soft palate: /k,g,ŋ/

(vi)   one glottal consonant – the sound realized in the g lottis: /h/

This grouping of consonants according to ***place*** of articulation can be brought together thus:

⇒ Bilabial: /p,b,m,w/

⇒ Labio-dental: /f,v/

⇒ Dental or interdental: /θ,ð/

⇒ Alveolar: /t, d, s, z, l, n, r/
⇒ Palato-alveolar: /ɔ,ɔ,ɔ,ɔ/
⇒ Velar: /k,g,ŋ/
⇒ Glottal: /h/

From the viewpoint of manner of articulation, English has the following consonants:

(i)   six plosive (stop) consonants – those sounds realized through the bringing together of the articulating organs and a ***sudden*** release of the sounds (or a ***sudden*** parting of the organs): /p,b,t,d,k,g/

(ii)   nine fricative consonants – those sounds realized through a narrowing of the space between the articulating organs and a filtering through of the sound, resulting in some kind of hissing: /t,v,θ,ð,s,z, ɔ,ɔ,h/

(iii)   two affricate consonants – those sounds realized through the bringing together of the articulating organs – similar to the plosives, the difference being a gradual release of the sounds afterwards: / ɔ,ɔ/

(iv)   three nasals /m,n,ŋ/ - those with air passing through the nose at the time of production, following a lowering of the velum;

(v)   two liquids /l,r/ - the various kinds of /l/ and /r/ sounds in various environments. During the production of the liquid lateral /l/ in particular, one or both sides of the tongue are lowered while the middle is raised, causing the air to flow out from the sides of the mouth as against the centre of the oral cavity.

(vi)   two semi-vowels /j,w/ - realized sometimes like vowels, sometimes like consonants.

Information on this grouping may be seen at a glance thus:
⇒ Plosives: /p,b,t,d,k,g/
⇒ Fricatives: /f,v,θ,ð,s,z, ɔ,ɔ,h/
⇒ Affricates: / ɔ,ɔ /
⇒ Nasals:/m,n,ŋ/
⇒ Liquids:/l,r/
⇒ Semi-vowels: /j,w/

3.2 Consonants may be grouped from the viewpoint of observed state of the glottis – whether there is or there is no vibration of the vocal chords at the time of production of the sound. As already known, vibration of the vocal chords leads to the production of voiced consonants; absence of vibration of the vocal chords leads to voicelessness. The voiced consonants from the broad indications are:
/b,d,g,v,z,ð, ɔ,ɔ,m,n,ŋ,l,r,j,w/ the voiceless consonants are: /p,t,k,f,θ,s,ɔ,h, ɔ/

Self-Assessment Exercise
Distinguish between plosives and fricatives

4.0   CONCLUSION

???

In this unit we have used our exposure to the concept of phonemes and sounds to group the consonants of English. We have done so according to manner of articulation, place of articulation and state of the glottis at the time of speech production.

5.0   SUMMARY
You have in this unit, specified the grouping (patterning) of the consonant sounds according to the following criteria.
    (i)   voicing and vibration of the vocal folds/cords;
    (ii)   the manner of articulation;
    (iii)   the place of articulation

We are now ready to go on to the patterning/grouping of the vowel/phonemes.

6.0   TUTOR-MARKED ASSIGNMENT
    Mention the criteria and then group the consonants of English.

7.0   REFERENCES/FURTHER READING

Abercrombie, D. (1975). **Elements of General Phonetics.** Edinburgh: Edinburgh University Press.

Eka, D. (1996). **Phonological Foundations 1: English:** Uyo: Scholars Press.

Clark, J & C. Yallop (1990): **An Introduction to Phonetics and Phonology;** Oxford; Basil Blackwell.

Unit 2: Sound Patterning in English: Vowels

Table of Contents
This unit introduces you to sound patterning, grouping and organisation. The language of illustration is English. The unit is arranged thus:

1.0 INTRODUCTION
In this unit, you are exposed to the patterning, grouping and organisation of the vowel sounds according to their relative duration; according to the part of the tongue raised or lowered and according to the extent of the raising of the tongue towards the roof of the mouth.

2.0 OBJECTIVES
By the end of this unit, you should be able to:
i) separate vowels from the standpoint of their relative duration;
ii) identify the vowels according to the part of the tongue raised;
iii) organise the vowels according to the extent of the raising of the tongue towards the roof of the mouth.
iv) identify vowels based on the lip posture

3.0 MAIN CONTENT
The English language has a total of twenty vowels: twelve pure vowels and eight diphthongs. Pure vowels, also called monophthongs, are those vowels which are produced by the movement of the tongue in one direction only. Pure vowels are also described as simple vocalic sounds that are said to have 'a steady state articulation', implying that the tongue, lips and jaw achieve, however briefly, a stable configuration, commonly called **Target Configuration**, if produced in isolation (Clark & Yallop, 1990:73). It is common knowledge that the tongue and lips undergo transitions in anticipation of a sound that follows or was produced before another sound but these transitions notwithstanding, a vowel sound which appears to have a stable auditory quality qualifies to be called a pure vowel.

The diphthongs are often characterised by a glide from one vowel position to another. In such vocalic sounds, according to Clark & Yallop, (1990: 73), 'the glide component is so prominent even though it is still heard as a single sound.' Unlike the pure vowels, they are not tied to conventional numbers. The word diphthong comes from Greek. It means 'double sound.' The first vowel in a diphthong marks the starting point while the

second sound marks the direction of tongue movement. The first vowel is often longer and louder than the second. Diphthongs are often transcribed, using diagraphs made up of two vowel symbols, which represent the starting point and the direction of movement of the tongue during articulation. The eight English diphthongs are thus:

[ei] as in day, make, great, late
[ai] as in time, light, try, buy
[ɔi] as in boy, noise, joy, buoy
[əu] as in both, soap, know, sold
[au] as in sound, town, owl, cow
[iə] as in dear, idea, hero, here
[uə] as in poor, sure, tour, truant
[eə] as in share, pair, wear, Mary

In addition to eight diphthongs, we also have five triphthongs. In careful and slow pronunciation, it is often possible to distinguish three vowel sounds articulated together. These are called triphthongs. For example, a careful pronunciation of the vowel in the word 'tower' shows three vowels in one sound thus: [tɔuə].

In English, there are five triphthongs made up of the five closing diphthongs with schwa [ə] added to them. Thus we have: PLS CORRECT ALL PHONEME SYMBOLS, USING MY PREVIOUS CORRECTIONS EARLIER.

[ei] + [ə] – [ei ə] as in player, layer
[ai] + [ə] – [aiə] as in fire, tyre
[ɔi] + [ə] – [ɔiə] as in royal, loyal
[əu] + [ə] – [əuə] as in sower, lower
[au] + [ə] – [auə] as in flower, tower

In each case, the glide is from the first sound to the second and to the third. As already noted, it is only the slow and careful English speaker whose speech can feature these complex vowels. In rapid or normal speech, triphthongs are often reduced to long vowels and diphthongs with the middle vowel heard only slightly or not at all. The grouping of these vowels can be seen at a glance in Section 3.1 below.

3.1 Grouping of the Vowel Sounds of English
The vowel sounds of English may be grouped, first, following the relative duration of the sounds. Here, four subgroups are generally recognised. These are:
i)   Long monothongs (pure vowels): [i:, ɔ:, ɔ:, u:, ə:]
ii)   Diphthongs (glides): [ei, ɔi, ɔi, əu, əu, iə, eə, uə]
iii)   Trigpthongs [eiə, ɔiə, ɔiə, əuə, əuə]

As you already know, the above are all long vowels.
iv)   Short monophthongs (pure vowels): [ɪ, ʌ, e, æ, ɒ, u, ə]

Secondly, the vowel phonemes of English may be grouped according to the part of the tongue raised. There are three subgroups of vowels here:

i) Front   [i:, ɪ, e, æ]
ii) Back   [ɒ, ɔ:, u, u:]
iii)   Central[ʌ, ə, ɜ:]

There is a vowel that does not neatly fit into any of these three subgroups. It is [ɔ:] [a:]?? usually grouped as **nearer back than front**. CLASSIFY CORRECTLY!!

Thirdly, the vowel phonemes of English may be grouped according to the **extent of raising of the tongue** towards the roof of the mouth. Six subgroups are generally noted here:

i)   Close   [i:, u:]
ii)   Half-close[ɪ, u]
iii)   Half-open[ɔ] [e]??
iv)   Between ii) and iii) [e, ə:, ə]??
v)   Open [ɔ:] [a:]??
vi)   Between iii) and v) [æ]??

The close vowels [i:, u:] may, alternatively, be grouped as **high** vowels; the half-close and half-open [ɔ, u, ɔ] may be said to be **mid** vowels while the open vowel [ɔ:] may be said to be **low** vowels.

With regard to the position of the lips at the time of pronunciation,

i)   [u:, ɔ:]- USE ROUNDED VS UNROUNDED
ii)   [u, ɔ]- OR ROUNDED, NEUTRAL, SPREAD.
iii)   [i:, ɔ, e, æ, ɔ, ə:, ə, ɔ:] are realised with spread or neutral lips.

Self Assessment Exercise
How are diphthongs and triphthongs similar to long monophthongs?

4.0 CONCLUSION
In this unit, you have studied four main groups in relation to the vowel sounds of English. You have also seen that the vowels of English are quite complex and can pose problems of organisation, patterning or grouping. However, the different formats of patterning based on the duration of pronunciation, the extent to which the tongue is raised, and lip rounding were all used as the parametric determinants of the vowels of English. Parameters tense/lax (fortis/lenis), oral/nasal not necessary for English vowels but need mentioning don't you think?

5.0   SUMMARY
From this unit, you have learnt the grouping of vowels according to:
     i)   their relative duration;
     ii)   the part of the tongue raised towards the roof of the mouth;
     iii)   the extent of raising of the tongue; and
     iv)   according to the position/shape of the lips.

6.0   TUTOMARKED ASSIGNMENT
        Attempt a brief grouping of vowels sounds of English according to the part of
        the tongue raised to the roof of the mouth and the extent of such a raising.

7.0   REFERENCES/FURTHER READING
        Abercrombie, D. (1975). *Elements of general phonetics*. Edinburgh: Edinburgh
                University Press.
        Eka, D. & Inyang, U. (1996). *Aspects of spoken language*. Calabar: BON
                Universal
        Eka, D. (1996). *Phonological foundations of English*. Uyo: Scholars Press
                (Nig.) Ltd.

Unit 3:   The Phoneme and Allophone

Table of Contents
This unit introduces you to two very important issues in your course. The issues are
the *phoneme* and the *allophone*. The unit is arranged thus:

1.0   Introduction

1.0   INTRODUCTION

This fourth unit takes you into another very important set of issues in your course – the *phoneme* and the *allophone*. You are taught the meaning of both terms and the relationship which holds between them.

2.0   OBJECTIVES

By the end of this unit, you should be able to:
   (i)   explain the terms *phoneme* and *allophone*;
   (ii)   show the relationship between the two;
   (iii)   illustrate how one symbol could be used to indicate both the phoneme and the allophone.

3.0   MAIN CONTENT
3.1   The Phoneme

We saw in Unit 2 of Module 1, that of the major components of language, sounds stand out as easily the most important. We also noted that a sound segment which is capable of changing meaning when replaced by another segment is said to be significant, contrastive or distinctive. A significant sound segment may be said to represent a *phoneme*, but it is very important to note that the *phoneme* itself is an *abstraction* – something which exists in our thought! A phoneme manifests itself in the form of a significant sound, so it is our realization of the segments which is particularly important in natural language, not the isolation of the abstraction.

If we consider the phonological rank scale which has *the tone group, the foot*, *the syllable* and *the phoneme*, we can say that the phoneme is the smallest meaningful unit within a phonological rank scale. Hyman (1975:59) defines the phoneme in a way similar to the above popular definition: *"a minimal unit of sound capable of distinguishing words of different meanings."* Thus, the sounds / r / and / l / are phonemes realized in English and shown to be responsible for the difference in meaning between the English words *read* /ri:d/ and *lead* /li:d/.

A traditional way of arriving at significant sounds in all natural languages (and hence phonemes in them), is through the construction of minimal pairs. If we take two words which appear to be the same (morphologically) except in one respect, the different sound which causes a change in meaning is a phoneme. For instance:

(i) pen, ten   /pen/, /ten/
(ii) right, fight   /raɪt/, /faɪt/
(iii) sing, king   /sɪŋ/, /kɪŋ/

The first sound in each group - /p, t, r, f, s, k/ is a phoneme.
(i) in setting up minimal pairs, we should be careful to note that even though the initial sounds in each pair are important in signalling differences in meaning, the remaining sounds in each pair are also representative of phonemes because a change in any of them will bring about a change of meaning.

Self Assessment Exercise
Briefly distinguish between the terms *sound* and *phoneme.*

3.2   The Allophone
A single phoneme can be realized (pronounced) in different ways depending on where the sound occurs in the word. For instance, the English sound / p / may be aspirated word initially as shown in Unit 2, Module 1, and would be shown thus [ph]. The same sound /p/ in the middle of a word will most likely be unaspirated [p], at the end of a word the same /p/ sound may be unreleased [p]. These three "different" /p/ sounds realized as [ph, p, p] are all allophones of the same phoneme /p/. If we take Jones' (1931:74) definition of the term phoneme as "a family of sounds made up of an important sound and various realizations of that sound" we can come to the conclusion that in the words *park*, *spark*, and *wrap* the phoneme /p/ is the important sound and [ph] and [p] and [p] are members of the family representing three different realizations: word initially [ph], word medially [p] and word finally [p]. We shall revisit the *phoneme* and the *allophone* in Module 3, Unit 11 – when we shall be dealing with phonological system and structure.

4.0   CONCLUSION
        From this unit, we have seen that the phoneme is the smallest meaningful phonological unit of analysis while the allophones are varied forms of the phoneme. We have also shown that both the phoneme and the allophone play important roles in the analysis of the sounds of any natural language.

5.0   SUMMARY
In this unit you have studied two separate but related issues in the analysis of sounds in natural languages. You have noted why it is generally said that a phoneme is a family of sounds while the allophones can be said to be members of the family of a phoneme. You are therefore in a position to appreciate the next topic: organs of speech.

6.0   TUTOR-MARKED ASSIGNMENT
Briefly distinguish between phonemes and allophones.

7.0   REFERENCE/FURTHER READING

Abercrombie, David (1975). Elements of General Phonetics; Edinburgh, Edinburgh University Press.

Eka, D. and Inyang Udofot (1996): *Aspects of Spoken Language;* Calabar, BON Universal Ltd.

Gimson, A.C. (1980): *An Introduction to the Pronunciation of English*, London: Edward Arnold.

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Unit 4:   Phonological Processes 1

This unit introduces you to two important issues in phonology: phonological system and phonological structure. The unit is arranged thus:

Table of Contents

1.0   INTRODUCTION
We saw in Unit 2, the meaning of, and procedure in, phonology. In this unit, you are taught the coverage of phonology, its system and its structure.

2.0   OBJECTIVES
By the end of this unit, you should be able to:
    (i)   explain the coverage of phonology;
    (ii)   distinguish between phonological system and structure;
    (iii)   discuss freely key issues in phonological structure.

3.0   MAIN CONTENT
            3.1   Phonological Study: The Coverage
We have already known that when we talk about phonology, we are concerned with the way the sound system of a particular language is organized. We have also known that when we talk about the *sound system* of a given language we usually mean the number of phonemes or distinctive and significant sounds as well as the variations of sounds which may be occasioned by the phonological environment in which the sounds of such a language occur. This issue of variations is sometimes simplified to mean the position in which a given sound occurs in a word: whether word initially, word medially or word finally. All of the above may be referred to as the segmental phonology of a particular language.

In addition to the above, phonological studies are also concerned with features such as those of accentuation or rhythm, pitch, intonation or nasalization(-delete, not a suprasegment in English) which extend to more than one segment in an utterance. When this happens the phonological study is said to be concerned with *nonsegmental*

phonology. The term *suprasegmental or prosodic* is also used in some sources, particularly the early ones… to describe what happens in relation to nonsegmental phonology. The prefix –supra – suggests that the features are simply attached to the segments, whereas *they run over a segment*. So the term nonsegmental is apparently more descriptive of the functions of features such as intonation and rhythm. Module 4 of your course is devoted to aspects of nonsegmental phonology of English.

Self-assessment Exercise
Briefly distinguish between segmental and nonsegmental phonology.

3.2   Phonological System

A phonological system is generally concerned with phonological units which are significant and/or contrastive and are therefore differentially replaceable with other significant units within a given language. Such units constitute the *core* of the phonological system. A major feature of the phonological system is that the units in each system have the function of distinguishing or isolating words and changes in words as a result of occurrence in mutually inclusive environments. They have little or no opportunity of influencing each other with regard to pronunciation since they enter vertical arrangements.

Phonological units in vertical arrangement are usually said to be those in *paradigmatic* distribution. They are separate and are realizable generally in isolation. If we take the words (a) port (b) keen and (c) milk for example and arrange the contrastive sound units paradigmatically, we notice the following:

A   B   C
p   K   M
ɔ: i: ɪ
t   N   l
                  k
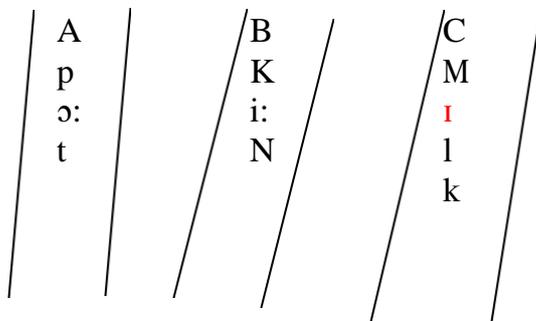
An analysis of these entries shows that in A the /p/ cannot be said to be aspirated neither can we claim that the voiceless consonant /t/ at the bottom of the first arrangement has had the effect of reducing the length of /□:/ in any way. For the vowel sound in B there can be no claim that the /n/ at the bottom has led to the slightest attempt at nasalizing /i:/. In C the quality of the liquid lateral /l/ does not suggest that it has occurred in the middle of the word! It is as clear as it would have been if it had occurred at the beginning. All these show that items in paradigmatic distribution which form the core of the phonological system do not normally influence each other.

3.3   Phonological Structure

A phonological structure is generally concerned with phonological units which co-occur together in a horizontal arrangement. Such co-occurrence is generally known to exhibit reciprocal influences as a result of nearness to each other. For instance, if a long sound occurs at the end of a word, it is likely to remain long in a normal pronunciation of words like:

bar /ba:/
see /si:/
we /wi:/

But if these long sounds are arrested by consonants, for instance if we now
      have barred /ba:d/
      seen /si:n/
      weed /wi:d/

The durations are slighted affected. If they were arrested by voiceless consonants, the durations of /a:/, /i:/ and /i:/ in *bar*, *see* and *we* would have been greatly reduced. These facts will become clearer to you when your programme takes you to a study of synchronic sound change. Also expect further clarification when we get to Unit 12, Module 4. If however, we go back to our examples under phonological system – *port*, *keen* and *milk*, we are likely to understand what happens under phonological structure. The arrangement would then be syntagmatic (as against the one of phonological system which we had as paradigmatic). The syntagmatic arrangement is horizontal thus:
      port /pɔ: t/
      keen /ki:n/
      milk /mɪlk

In the first illustration, the influence of / t / ending the word /pɔ: t/ is to reduce the length of /ɔ:/ drastically.

In the second illustration, the influence of the nasal /n/ is to create a situation of partial nasalization for the vowel /i:/.

In the third illustration, the occurrence of the liquid (lateral) /l/ word medially shows that ordinarily the /l/ cannot be *clear*, it must be *dark* or *velarized*. This is so because in English the clear /l/ occurs only word initially. Medially and finally, the /l/ becomes *dark* and is represented thus: /ɔ/??. *Milk* would then be shown to be /mɔɔk/.?!

Indeed, a lot of reciprocal influences occur with items in phonological structure and with syntagmatic distribution which marks the *core* of the phonological structure. However, we shall take a look at two more issues in connection with the phonological structure. These are *complementary distribution* and *free variation*.

3.4.1 Complementary Distribution
Within the phonological structure of English, there are sounds which enter into complementary distribution. Such sounds are normally allophones of phonemes.

Allophones in complementary distribution are those which cannot be replaced by other allophones without bringing about a change in the meaning of the words(-allophones don't result in change in meaning, that's why they are called ALLOPHONES, OR ELSE they would be PHONEMES IN THAT LANGUAGE!!) concerned. Put differently, sounds in complementary distribution occur in *mutually exclusive* environments: they have no contexts in common.

If we take the /l/ sound, we notice that word initially it is always *clear* /l/, word medially and finally it is usually dark or velarized: [ɫ]. So, normal speakers of English cannot use the clear /l/ word medially or finally just as they cannot use the dark [ɫ] word initially. Notice that the dark [ɫ] is usually written with a tilde across it.

In a similar way, if we take three words: *cat, Kate* and *caught, w*e notice that each starts with [k] which is an allophone of /k/. But the [k] in *cat* is "different" from the [k] in *Kate* and both are "different" from the [k] in *caught*. But the differences are not significant: the /k/ sounds adjust themselves to the nearby vowels - /æ/ in /kæt/, /ei/, in /keit/ and /ɔ:/ in /kɔ:t/. This is the sense in which the [k] sounds are allophones of /k/.

3.4.2 Free Variation
Within the phonological system of English there are contrastive items which may be used *not* for the purpose of bringing about a change in the meaning of a given word, but with the intention of bringing about a change in pronunciation. When this happens, the items within the phonological system are seen to operate within the phonological structure. Thus the words.

> *embrace   may be pronounced ['embreis] or [' mbreis]*
> *either may be pronounced ['ai:ð ə] or ['i:ð ə]*
> *economics   may be pronounced ['i:kn miks] or ['ekn miks]*

It should be noted that *free variation* is not a universal event: there are many people who stick to the pronunciations they had learnt from the beginning or who are not easily influenced by speakers around them. But every speaker has the capacity to notice when sounds are used in free variation.

4.0   CONCLUSION
You have, in this unit, been exposed to coverage of phonology. You have also learnt additional very important issues in this unit: phonological system and phonological structure.

5.0   SUMMARY
The main issues discussed in this unit are:
   (i)   the coverage of phonology
   (ii)   phonological system – the core
   (iii)   phonological structure – syntagmatic/complementary distribution; free variation

6.0   Tutor-Marked Assignment

Briefly distinguish between sounds in complementary distribution and those in free variation.

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Unit 5: Phonological Processes 2

1.0 Introduction

1.0 INTRODUCTION

Phonological processes are a common and predictable part of phonological development often recognized as simple pronunciation alteration. When phonemes are combined to form words, the segments of neighbouring phonemes become juxtaposed and sometimes undergo changes. Changes can also occur based on phonological environment. Such changes are found in word initial, medial and word final positions in relation to a segment and are all referred to as 'phonological processes'.

4.1 OBJECTIVES

The aim of this unit is to:
differentiate sound changes that occur in or within words.
state what causes these changes
identify the relationship between sounds in a sequence.
differentiate phonological processes.
discuss how phonological processes function in languages.

3.0 MAIN CONTENT
3.1 **Phonological Processes**
Phonological processes are the changes sounds undergo for occurring with other sounds in a particular phonological environment. They are a set of restructuring which link the underlying structure to the phonetic surface structure. It presents the realised sequence from the deep structure to the surface structure. One interesting aspect of the phonology of languages is that organised sounds of each language are not always static. They are constantly affected by the surrounding or neighbouring sounds, that is, the neighbouring segments always condition them. These conditioning are governed by rules called,' Phonological Rules'. Sometimes phonological changes are not merely strictly phonological, changes may occur in the morphology or syntax that warrant a phonological change'

Phonological rules have to be exact in their scientific accounts of linguistic analysis. As such the rule should be scientifically and notationally represented:

$$X \longrightarrow y \ / \ b$$

In the formula above, 'X' which is the main focus of the analysis refers to the input to the alternation, while 'y' shows the feature changed to, by rule application. The slant '/' refers to the context or environment in which the change occurs.

One important thing about this formula is that any of the elements (x, y, b) could be null. This makes it possible to capture different phonological processes within this formula. If in an analysis, we discover that the input 'x' is null, the rule will appear,

Ǿ⸻⟶y / b

This kind of a change can be noticed in some varieties of spoken language. For example, most Nigerian languages do not tolerate consonant clusters. Whenever a Nigerian speaker of English as a second language meets a word in English that has consonant clusters, he is likely to break the cluster and simplify the structure to suit his own language for easier articulation. For example,

'bread' /bred/�⟶[buredi}
CCVC ⟶CVCVCV

In the above the English 'CCVC' structure has been simplified to 'CVCV' structure.

Phonological processes are the principles or norms which explain how abstract units are combined and vary when they are used in speech, such processes are assimilation nasalisation, dissimilation, coalescence, contraction, elision, neutralization, metathesis, insertion etc.

3.1.1 Assimilation

Assimilation is a phonological process where a speech sound changes and becomes more like another sound, which follows or precedes it. e.g.:

Im – possible	impractical
In – tolerant	impatient
In – tangible	impartial
In – decent	immaterial
In – delible	indirect
In – sincere	imbalance

In the above, the forms with the prefix as 'im-' take bilabial plosives as /p/ and /b/ or nasal /m/, while those with 'in-'prefix take alveolar plosives or fricative /s/ . There is anticipation as both are articulated at the same place and this decides which phoneme that is to follow.

On the other hand, the difference between /s/ in the English word 'cats' and the /z/ in 'dogs' is another kind of assimilation.

The most common phonological rule is assimilation, as many other process have their root in assimilation.

The functions of assimilation are:
- To save time

- To anticipate other sounds
- For ease of articulation

Assimilation is considered in terms of features as: this is totally unclear from the examples above.

ɔ ──────→ m/-b ɔ/-

           f n/-l or

           d ŋ/-k

           ŋm/-gb

Assimilation can be either:

(i)   Progressive Assimilation: The assimilated sound follows the conditioned sound. It is a sort of hand over phenomenon. It is when the change proceeds from left to right.

        Man   /mãn/

        No   /n ə̃ʋ/

     Notationally, this can be captioned as:

       /V/ ──────→ ˜V/N-

(ii)   Regressive Assimilation (anticipatory) takes place from right to left (R – L). The assimilated sound precedes (comes before) the conditioning sound.

        bon   /b˜ɔ/ So which is the assimilated sound, and which the conditioning sound? Also, let a secretary place the tilde (nasalization symbol over the vowels)

        bomb / b˜ɔm/

        song /s˜ɔŋ/

        son   /s˜Dn/

By rule application, the above phonological process can be notationally stated:

      V ──────→ ˜V /-N (before)

This means that a non-nasal sound changes to a nasalised sound in an environment before a nasal sound.

Nasalisation

Nasalisation is a phonological process whereby a non-nasal sound picks on the features of a nasal sound because it occurs in the same distributional environment. e.g.

     sing   [sĩŋ]

     pin   [pĩn]

pen   [pĕn]

sand [sãnd]

It is a secondary articulation, which results from the process of assimilation.

Dissimilation

Dissimilation is a process whereby sounds become less similar to their surrounding segments. This process is less common than the assimilation. It creates distinctiveness in sounds in the same environment. In English the adjectival suffix – 'al', has two phonetic realizations of '-al' or '-ar' e.g.

A		B		
Noun - Adjective	Noun	-	Adjective	
Electric – electrical	Angle	-	Angular	
Culture – cultural	Single	-	Singular	
Region – regional	Title	-	Titular	
Orbit – orbital	Circle	-	Circular	

When the '-al' is added to a word that already ends in '–l', it takes the form –ar, where the '–r' is dissimilar to the '–l' of the noun. However, there are exceptions to this rule(s). This is morphologically-induced.

Coalescence

This is a phonological process whereby two contiguous sounds are replaced by one which, though different from each of the two, shares some properties in common with each of the two original sounds. In English coalescence occurs when a morpheme final alveolar plosive or fricative /t, d/ or /s, z/ is followed by [j], a palato – alveolar fricative results, mostly when the segment is followed by the suffix "-ion" e.g.,

relate /rileit/   relation /rilei∫ ∂ n/

confuse /k ∂ nfju:z/   confusion /kənfju:∫∂ n/

Contraction

Contraction is a phonological process whereby a sequence of two identical segments is reduced to one. This process is always identifiable with vowels and it is usually a direct result of vowel assimilation, but can also be found in consonants. This process is dominant in Nigerian languages e.g. Isoko

da   +   udi

drink   water

by assimilation   Duud
i

by contraction   Dudi

drink water

Vowel Reduction

Vowel Reduction is a phonological process whereby unstressed vowels are weakend to schwa, this process abounds in English, e.g.

phone /fəun/   phonemics /feəni:mIks/

phone /fəun/   phonetics /fənetiks/

photography /fəutəgra:f/   photography /fətɒgrəfI/

able /eIbl/   ability /əbiləti/

super /su:pə)   superior /sə:pIərIə/

                        telegraphy /təlegrəfi/

telegraphy   /tləgra:f/   /teləgra:f/

Elision /Deletion

This is a phonological process whereby a segment that had existed is lost or becomes zero. The process may affect a vowel or a consonant. Some segments that are heard in a deliberate or slow articulation of a word in isolation may get deleted/elided or lost in festination (fast speech) and this can even affect an entire syllable. Deletion exists in many forms:

(i)   Aphaeresis: This affects a morpheme or a sound at initial position. This is initial deletion e.g. I have – I've
The loss could be diachronically (history) traced.

Other examples are:

      Knight   /nait/

      Know /nəu/

      Pneumonia /njiuməniə/

      Psychology /saikəlɒdʒi/

(ii)   Syncope (Syncopation) is the internal deletion e.g.
listen/lisn/

sword   /sɔ:d/

often   /ɔfn/

castle   /kæsl/

plumber   /plɔmə/

secretary   /sektri/

chocolate   /ʧɒkleit/

(iii)   Apocope (Apocopation) is the deletion of the final segment e.g.

and   /ə n/

last time   /læstaim/

Apocopation abounds in French words borrowed into English e.g.

coup   /ku:/

debut   /debju:/

depot   /dep∂u/

chalet   /ʃæleɪ/

sachet   /sæʃeɪ/

In French, the final vowels of the definite article 'le' and 'la' are always deleted if the following word begins with a vowel. This process prevents sequences of vowels from occurring across word boundaries and thus maintains the preferred 'CV' structure.

le garcon   [l∂ ga:sən]   The boy

le ami   [l'ami]   The friend (male

la fille   [la fɪj]   The girl

la amie   [lamie]   The friend (female)

Neutralization

This is a fact of language. It is a process, which takes place when two distinctive sounds (phonemes) in a language are no longer distinctive. This usually occurs in particular positions in a word. For example /t/ and /d/ are neutralized inter-vocalically (in between vowel sounds) in American English as in:

Betting   [beɔɔŋ   ]

Bedding   [be ɔɔŋ]

In German /t/ and /d/ do not contrast at word final positions e.g;

Rad   [ra:t]

Rat   [ra:t}

Metathesis

This is a phonological process whereby the order of segments is juxtaposed. The process involves movement, permutation or reversal of segments in a string. This is common in speech errors and children's language.

Some refer to it as spoonerism coined from Professor Spooner who liked juxtapositioning segment e.g.

professor   prossefor

ask	aks
comfortable	comfterble
certificate	cerfiticate
relevant	revelant
disc	dics

This process has shaped many English words historically. The discrepancy between some spellings and pronunciations is caused by metathesis. For example, 'iron'. Even 'bird' in English was once 'bryd', 'run' was once ' irnan', 'horse' was 'hros', 'wasp' was 'wæps', and 'hasp' 'hæps'.

4.0 CONCLUSION

Phonological processes are the natural facts of languages. It is natural because it is common among all the languages of the world. Phonological processes are the changes phonemes undergo because they happen to occur with other sounds in the same environment. The most common of all the processes is 'Assimilation'. All other processes like nasalization, metathesis, neutralization, insertion, deletion etc can be traced to assimilation process.

5.0 SUMMARY

Phonological process is the change sounds undergo for occurring in the same environment with other sounds. These changes could be phonological, morphological and syntactic. Phonologically, a sound change can be conditioned based on phonological environment as in 'physics' /fiziks/. The's' changes to /z/ because it occurs in between two vowel sounds. The sound's' is a voiced, while 'y' and 'i' consonant are voiced sounds. The voiceless sound /s/ has to change to [z] a voiced sound to be like 'y' and 'I' in terms of voicing. It could be morphologically conditioned when it happens across word boundary. Consider the English regular past tense formation '-ed' and the regular plural suffixation '-s'. These processes are meant for ease of articulation, save time and anticipation of neighbouring sounds.

6.0 TUTOR MARKED ASSIGNMENT

1. What are phonological Processes?

2. List the various phonological processes and explain only five with copious examples.

3. What are the functions of these processes in language development?

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Unit 6: Minimal Pairs

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1.0 INTRODUCTION

Minimal pairs are an important means of establishing the distinctive nature of a phoneme in English. Until a phonetic form passes the test of its being compared to a contextual form in which it is not replaceable by another phoneme, it cannot be placed in a distinct class of independent sound. The meaning content can also not be established. It is seen more as a mere phone, a mere sound made but with no particular meaning being distinctly conveyed by it. This unit will therefore show you how to establish the distinct form of a sound through the use of minimal pairs. It will also discuss the instruments for distinguishing phonetic elements. It is also going to show the distinct nature of phones, phonemes, and allophones to avoid confusing them. This unit will also give examples of minimal pairs in the segmental and suprasegment forms.

2.0 OBJECTIVES

At the end of the unit, you should be able to:
- discuss the nature of minimal pairs
- identify types of minimal pairs
- state the instruments for establishing minimal pairs
- discuss the different aspects of phonetics that contribute to establishing minimal pair types
- give examples of segmental minimal pairs
- give examples of suprasegmental minimal pairs

3.0 MAIN CONTENT
3.1 Minimal Pairs
Minimal pairs are representative of elements of speech, which have difference only in one segment of their make-up. What this means is that just one sound segment being changed can cause a difference to the word in terms of its meaning and possibly status. Also, the change in the syllable stressed in some English words can lead to a change in their class and function. You may of course find this comparable in the Yoruba tonal structure, at the semantic level. In the Yoruba tonal structure as is common with many Nigerian indigenous languages, the placement of the tonal mark has implication for the pronunciation of the word and also its semantic content. As such, a word like [agbon] will have different meaning due to change in the direction of the pitch of voice. As such,

1. Àgbon (coconut)
2. Agbòn (basket)
3. Àgbòn (jaw)
4. Agbón (wasp)

are only different on the basis of tonal placement on the word. This affects what they mean even though they are spelt the same way. Naturally, their having different tone position leads to different pronunciation. The four examples above clearly indicate that tone is phonemic in the Yoruba language. This could be found to be the same in many Nigerian languages. The examples above illustrate the way minimal pairs function as it is obvious that what makes a difference in the words is just the movement of the tone from one point to the other.

Nonetheless, the best language to illustrate this functioning of minimal pairs appears to be English. Examples of minimal pairs in English could be seen below. For instance, the difference between [bit] and [pit] is just the sound segments [b] and [p]. It is obvious then that minimal pairs clearly make a difference in the meaning that words have. The essential concept is that when a segment is replaced it changes the meaning of the word as we see in the words pit and bit. The change in the initial segment thus changes the meaning of the words. This makes it easy to establish that these two sounds are different sounds. This essentially is what minimal pairs are used to do in the phonology of the English language. In this way, it establishes the difference in two segments or suprasemental elements. Minimal pairs are then possible tools that can be used to establish phonemic status of sounds and other speech elements.

Self-Assessment Exercise
Discuss, with 10 examples from your language, some words or phrases in which tone is phonologically significant.

3.2 Types of Minimal Pairs
Minimal pairs can occur at the segmental sound level and the level of the suprasegmentals, especially that of stress. As the examples above have illustrated, minimal pairs are not the exclusive preserve of segmental elements in English. Stress

placement can have implication for the meaning and the pronunciation of a word. For example, a word like import can have two different meanings due to the position its stress occupies in the word. As it is obvious, the word has two syllables [im.port]. The syllable division is done with the dot within the word in the square bracket to divide it into two syllables. When the primary stress is placed on the first syllable, the word is pronounced with the first vowel having full realisation. But when the stress shifts to the second syllable, the second vowel now has full realisation while the first one becomes unstressed.

In addition, the class of the word changes due to the stress positioning. What this means is that the first realisation of the word with the stressed syllable being the first one makes the word realised as a noun. However, when the stress shifts position to the second syllable, it is realised as a verb. This shows that stress is also phonemic in the English language. The question then is what are these phonemic elements that enable us to establish the phonemic status of the phonetic elements in English?

Self Assessment Exercise 2
State two types of minimal pairs that you are familiar with.

3.3 Phonetic Base for Minimal Pairs
The phonetic base for minimal pairs can be found in the phonetic elements that help us to determine the nature of a sound. In phonology, there are not just speech sounds, but the function each one performs is important in establishing its nature. This is why we continue to say that phonology is about the functioning of sounds in language. The terms phone, phoneme and allophone are different based on their nature and the functions they perform in language. We will thus discuss these terms to establish what they are and how they contribute to minimal pairs functioning in the English language. Let us look therefore closely at the terms: phone, phoneme and allophone.

3.3.1 Phone
When we talk of a phone, we are referring to the sound elements made within a language. When we make sounds, we are merely producing phonic entities. Thus, in producing [p, t, k, l, r, e, ɔ, ɔ:, a:, etc.], we are merely making sounds. (Note: the square brackets are used to indicate phones while the slanting brackets indicate the sounds have been established as phonemes.) But to establish them as being significant will require another test. And this is where minimal pairs become a useful tool in establishing the significance of any phone. When it becomes significant, it is referred to as phoneme.

3.3.2 Phoneme
A phoneme is a sound segment that has been found to possess significance in terms of its existence and meaningfulness within a language. Thus, to establish a phone as being an actual phoneme requires putting it in the environment of other sounds in order to see if it can function meaningfully.
Thus by putting [p] in the environment of segments like [-it] to form *pit*, we see that it can combine with other sounds to form a meaningful word. But to establish its being an independent phoneme in contrast to some other phonemes now requires its sharing

this environment with them. Thus, we may replace /p/ with [k] in the environment of /-it/ in order to create *kit*. In this way, we are able to establish that /k/ is different from /p/ in that they can both occur within the same environment. This is the convention that is called minimal pair. That is the pairing of sound segments at minimal levels to establish their independent forms.

3.3.3 Allophone

Allophones are usually variants of the same phoneme. Unlike in the case of different phonemes, these cannot occur in the same environment. They are usually mutually exclusive. And the reason for their occurrences is more often phonological. When a single phoneme is realized in different environments by a series of phones, we say the different occurrences are the allophonic variations of the same phoneme. What this means is that a phoneme gets realized in a particular manner in a particular environment. This particular manner of being realized is a peculiar way of being realized by this phoneme in this sort of environment. The phoneme may not get realized in this particular manner in another environment.

We may take, for instance, the sound /t/. This sound can get greatly influenced by different situations around it. This phoneme is what is regarded as the phonemic representation or underlying representation of the phoneme. The alternative realizations are that /t/ becomes aspirated in the stressed syllable initial position. This allophonic realization of /t/ is written as [t^h], the phonetic realization.

/t/ also gets nasalised when followed by a homorganic nasal. That is, when followed by /n/, which is also an alveolar sound like /t/, sound /t/ begins to anticipate the pronunciation of the following /n/ sound and thus releases its air stream partly through the nose. We write it as [t^N].

/t/ also becomes lateralised when followed by a homorganic lateral. That is, the alveolar lateral /l/ following /t/ in a word like *bottle* /bɔt^{L}l/ gets anticipated in the course of finishing the production of /t/ in the word above. Thus, /t/ gets finished in producing /l/

We can thus see four possible realizations of /t/. It may be just the voiceless alveolar plosive as in *bat* or *cat*. It may be realized with aspiration as in *tape* or nasalised as in *cotton* or lateralised as in *kettle*. These four realizations occurred in different environments and they are therefore referred to as allophonic variants of the same phoneme.

We however note that they cannot be regarded as different phonemes because the sound underlying the representations can still occur in the same environment in a minimal pair. Thus,

tape – take, bat – bet, etc.

Self Assessment Exercise 3
Using any segment as example, fully discuss the allophonic variation that are possible
with your chosen sound.

3.4 Examples of Minimal Pairs
3.4.1 The Sound Segments

/i:/	/ɪ/		/f/	/v/
feel	fill		fan	van
wheel	will		fail	vale
seat	sit		fain	vain
feet	fit		fewer	viewer
leak	lick		fear	veer

/æ/	/ɑ:/		/s/	/z/
bad	bard		seal	zeal
pack	park		loose	lose
had	hard		house(n)	house(v)
mad	marred		these	this
ban	barn		bus	buzz

/e/	/ʌ/		/i:/	/ /
bed	bud		cheap	sheep
said	Sud		catch	cash
bet	But		cheese	she's

/ɜ:/	/ɑ:/		/r/	/l/
fur	far		rack	lack
bird	bard		brake	Blake
burn	barn		road	load

/ʌ/	/ɜ:/		/ /	/s/?!
bud	bird		shot /ɒ/	sot
puss	purse		shoot /u:/	soot
such	search		shed /e/	said

/ɒ/	/ɑ:/		/p/	/b/
cot	caught		pill	bill
rot	wrought		pin	bin
cod	cord		pen	Ben
don	dawn		rip	rib

/u/	/u:/		/t/	/d/

full	fool		team	deem
soot	suit		tin	din
wood	wooed		try	dry

/ʌ/	/ɒ/		/k/	/g/
done	Don		cap	gap
stuck	stock		lack	lag
putt	pot		rack	rag
shut	shot		craze	graze

/e/	/eɪ/		/t/	/θ/
debt	date		tick	thick
get	gate		bat	bath
red	raid		writ	wreath
wedge	wage		tree	three

/ɔ:/	/əu/		/θ/	/ð/ born
	bone		thigh	thy
court	coat		wreaths	Wreathes
walk	woke		teeth	teethe
porch	poach		mouth (n)	mouth (v)

/əu/	/au/		/ð/	/d/
tone	town		then	den
boat	Bout		than	Dan
drone	drown		breathe	breed
wrote	rout		lather	ladder

/ɔi/	/ai/		/v/	/w/
boy	Buy		vent	went
oil	Aisle		vale	wail
boil	Bile		vain	wane

/l/	/j/		/ð/	/z/
loo	ewe		breathe	breeze
lose	use		writhe	rise
lawn	yawn		seethe	seize

/z/	/ʒ/		/ʃ/	/ʒ/
composer	composure		ruche	rouge
Caesar	seizure		shone	genre
bays	beige		Aleutian	allusion

| /m/ | /n/ | | /n/ | /ŋ/ |
| maim | name | | thin | thing |

dame	*Dane*		*sinner*	*singer*

/h/	/w/		/ŋ/	/g/
horse	*worse*		*bang*	*bag*
who	*woo*		*sang*	*sag*
hate	*wait*		*hang*	*hag*

/h/	/ - i: /
heat	*Eat*
hill	*Ill*
heel	*eel*

Self Assessment Exercise 4
Give examples of ten sounds and the possible minimal pairs of the sounds.

3.4.2 Stress as a Phonemically Significant Element
The position in which the stress is placed in this group of words is phonemic. That is, it is significant in terms of its function and meaning.
Such words are usually spelled or written orthographically in exactly the same manner. However, as we are well aware by now from all our previous discussions, a stressed syllable has its nucleus fully realized whereas a non-stressed syllable will be realized as the weak form. Thus, the position of the stress in these words affects the pronunciation of certain syllables. While a syllable that has a full-vowel realization has one pronunciation of the word, the other may have the weak form realized due to the shift of the stress mark in another.

Examples are:
I have inserted ALL the stress marks AND correct phoneme symbols where ommitted!

Noun/Adjective	*Verb*
ˈpermit /pɜːmɪt/	perˈmit /pəmɪt/
ˈperfect /pɜː fikt/	perˈfect /pəfekt/
ˈcombined /kəmbaind/	comˈbine /kəmbain/
ˈpresent /preznt/	preˈsent /prizent/

You should try and get other examples of your own.

Self Assessment Exercise 5
Give about 10 examples of words that have stress significance in their usage and demonstrate how they operate.

4.0 CONCLUSION
In this unit, we have learnt about minimal pairs. We have seen that minimal pairs are very important in establishing the significance of a phone for it to become a phoneme. We have also seen that allophones are mere variants of the same phoneme as opposed

to how minimal pairs help us to establish individual phonemes through the means of substitution. It is thus obvious that minimal pair is an important device in establishing independent phonemes/sounds of English. The copious examples given reveal this.

5.0 SUMMARY

This unit discusses minimal pairs. It specifically defines what minimal pair is and how it functions. It outlines different types of minimal pairs possible in English language as segmental and suprasegmental. It also establishes phonetics as the base for the phonological establishment of minimal pairs. It gives copious examples of segmental and suprasegmental minimal pairs that are possible in English language.

6.0 TUTOR MARKED ASSIGNMENT

1. Discuss what you understand by minimal pairs in English.
2. State clearly two points in phonetics at which minimal pairs can be applied.
3. Identify three phonetic points that form basis for minimal pairs operation in the English language.
4. Give 10 different examples of segmental sounds and two possible minimal pairs formed with each.
5. Give 15 examples of minimal pairs formed with the suprasegmental element of stress in English sentences.

7.0 REFERENCES/FURTHER READING

Daniel, I. O. (2005). *Introductory Phonetics and Phonology of English.* Ibadan: Safmos Publishers.

Cruttenden, A. (1994). *Gimson's pronunciation of English* . New York: Edward Arnold.

Arnold, G. F. & Gimson, A. C. (1973). *English pronunciation practice*. Kent: Hodder and Stoughton Educational.

MODULE 4: NONSEGMENTAL FEATURES

Unit 1: Tone/Intonation
Unit 2: Defining the Syllable
Unit 3:   Syllable Structure/Juncture
Unit 4:   Accentuation/Stress
Unit 5 : Rhythmic Patterns

Unit 1:   Tone/Intonation

Table of Contents

This unit introduces you to the nonsegmental features of tone and intonation. The unit is arranged thus:

1.0   Introduction
In this unit, you are going to study variations of pitch in natural languages, how the variations result in tone and intonation, as well as the different types of intonation and accentual patterns in English.

2.0   Objectives
   By the end of this unit, you should be able to:
   i)   explain variations of pitch in natural languages;
   ii)   distinguish between tone and intonation;
   iii)   describe types of intonation patterns;
   iv)   express the functions of intonation in English
   v)   listen to and practise the production of intonation patterns as recorded on your audio tape.

3.0   Variations of Pitch in Natural Languages
It has generally, (indeed universally) been observed that natural languages are never spoken at one level of voice pitch for a considerable length of time. When people speak (or read aloud), the voice pitch is always falling or rising, rising or falling, falling and then rising, rising and then falling and only occasionally level for a specific effect.

In some languages, the variations indicated here are generally noticed in relation to the sentence, the clause, the group or even the word. In other languages, the variations indicated above are usually noticed in relation to the word only. When the variations relate to items higher than the word, they are normally said to signal **intonation**, the patterns of which occur at the ends of specific utterances. Languages which use pitch variation in this way are generally said to be **intonational**. English, German and Russian are examples of intonational languages. When variations in pitch relate to the word, they are usually said to signal **tone**. The variations in that case, feature within

the words. The languages which use pitch variation in this way are usually classified as **tonal**. Chinese, Spanish, Italian and the majority of African and Nigerian languages like Hausa, Igbo, Yoruba and Ibibio are in this class.

So, we can talk about intonation patterns in English for instance, and tone patterns in Ibibio, for example.

The two variations in pitch shown above create melody in natural languages. But as hinted here, they create melody (musical effect) in different ways and with different results. As we are concerned in this unit mainly with intonation, we shall restrict our discussion to intonation in English.

Self-assessment Exercise 18 -Pls number previous assessments (which I deleted)
18. Briefly discuss the term "variability of pitch in natural languages."

3.1   Intonation in English: Key Notions and Variability

It is now commonly known that there are many speakers of English who, in their performances, have exploited the rich, variable and almost inexhaustible possibilities within intonation in English. People in this group are essentially those who speak

English as a first language (L_1) and those nonnative speakers (L_2 or foreign) who are appropriately educated in the language. The users of English in this second group (most probably only a few), have generally employed intonation patterns for two main purposes – to distinguish meanings and to show various forms of attitude and emotion. Even for such users of the language, complete agreement on intonation usage has never been achieved. Indeed, while it is quite possible, (even easy), to reach agreement on one aspect of functional use of identifying meanings of utterances, it is not so possible and not so easy to reach agreement on one functional level, namely that of indicating attitude or emotion. It is for this latter purpose that intonation has been described as being largely idiosyncratic, conventional to a group and generally variable from one individual to the other.

There are also some groups of English speakers who have never managed to get near to exhausting the full range of possibilities offered by intonation in English. Various groups within L_2 speakers and users of English as a foreign language are in this category. Probably the most easily identifiable in this group are the nonstandard speakers of the new Englishes in particular. Indeed one can see why the intonation of a large number of speakers of the new Englishes is often said to be colourless; for a large number, there is hardly any variation beyond the fall and the rise, with the former dominating.

Nevertheless, it is worth emphasizing, as in O'Connor (1970: 137-138), that intonation is a major source of meaning variation in English. Let us illustrate with the words "Yes" and "No". These words are common for speakers of English. However, they can be said in a great variety of ways to bring out various shades of meaning in English. The morphological shapes of the words may remain the same, but their meanings could vary with each intonation tune, pattern or contour. For instance, the word "Yes" can be said with a falling tune, (\ ). In that case, the word would suggest

agreement on an issue stated or argued. It can be said with a rising tune, (/   ). In that case it could suggest a doubt in the mind of the speaker. On a different occasion, a

rising tune could be used to show that the speaker did not understand what was said. The intonation options shown here in respect of "Yes" are also possible in respect of "No".

In a similar way, the words "thank you" may be said on a falling tune, when they are intended to express gratitude; they may be said on a rising tune when they are intended to demonstrate casual acknowledgement of something said or done.

Again, the words "good morning" could be said on different tunes. When said with a falling tune, it suggests formal greeting, which, ordinarily, would need a reply.

When said with a rising pattern, it tends towards causal exchange of pleasantries often referred to as "phatic communion" which may be replied to in an equally causal manner. The greetings could even be ignored without creating a problem for the speakers. Tone, tune, - so what's the difference? Used confusingly here.

Self-assessment Exercise 19
19. Briefly illustrate variability with regard to intonation usage.

3.2   Types of Intonation and Their Functions in English
Put very simply, intonation in English may be classified into two groups in the first instance:

    i)   those with pitch movement involving no change of direction on the tonic syllable;
    ii)   those with pitch movement involving change of direction on the tonic syllable.

Intonation in the first group may be said to be simple or undirectional; intonation in the second case is said to be complex or bidirectional. The fall, the rise, the level tunes are undirectional. The fall-rise, the rise-fall are bidirectional. You can appreciate these points by going through the following intonation patterns.

i)   The Falling Pattern
      Statements without implication, mild commands, wh-questions are generally known to be realized on a falling intonation. The following are examples:

1(a)   Statements without implication

    (a)   Peter is in London.
    (b)   Mary played the piano.

1(b)   Mild Commands

    (a)   Take your feet off the chair.
    (b)   Put the book on the table.

1(c)   Wh-questions

(a)   Which is the correct answer?
(b)   What is your name**?**

ii)   The Rising Pattern
When the pitch of the voice rises at the end of an utterance or at a tonic syllable, we have a rising intonation. A rise of that nature generally signals none finality such as we notice in none final coordinates, none final subordinates, first parts of enumerations, the second parts of some tags.

The rising intonation pattern is also generally noticed in questions requiring the answer "Yes" or "No", in requests as well as in statements with implication.

You should note carefully that we are dealing with two types of rises: the unidirectional rise as in questions requiring the answer "Yes" or "No", and the bidirectional rise as in utterances involving a majority of none finality and statements with implication. The following are examples:

i)   None final Coordinates
(a)   I wanted to go to London;   my wife preferred going to Canada

(b)   Peter got on a bus;   Alice went by sea

In each of the above examples, the falling-rising pattern of intonation occurs at the tonic syllable of the nonfinal coordinates, namely, London, and bus, while the falling pattern of intonation occurs at the second coordinate which marks the end of each sentence.

ii)   Nonfinal subordinates- MAKE BOLD/CLEAR PLS. The tones= [\ / ∨ ∧]
(a)   A year ago,   I studied Mathematics

(b)   Without further explanation, the case ended

In the two examples above, we see that the falling-rising pattern is at the nonfinal subordinates marked by both ago and explanation.

iii)   First parts of enumerations
For first parts of enumerations, there are two patterns: either the fall throughout or the rises plus a final fall. So, we can have either

a)   Peter bought a book   a pen   a pencil   and a ruler
or
b)   Peter bought a ∨book, a ∨pen   a ∨pencil   and a \ruler

iv)   Requests
      With regard to requests, we often notice the bidirectional rise: the falling-rising. Examples here include:

      a)   Could I have your ∨pen?●

      b)   Come over now, please●

v)   Questions requiring the answer "Yes" or "No" Examples here include:

      a)   Should we start off at six?●

      b)   Was Alice at home?

What you have so far studied here are the more common, regular, objective, grammatical or even routine functions of intonation. There are other functions which tend to be situational, depending on attitude of the speaker to his audience and to the general context of utterance, to the speaker's emotion or changes in situations. For instance, we can say

      i)   routinely:
              'This   is   my   book'

              _____
                                    ●

                   .   .
              _____

      ii)   We can say enthusiastically:
              'This   is   my   book'

              _____
                                  ●
                 ●   .   .
              _____

      iii)   We can say this same sentence with a shift of the tonic syllable as in the three examples below here

      (a)   'This   is   my   'book
              _____
                            ●

•　　　　　•　　　　(tonic on <u>my</u>)
─────────────

(b)　'This　is　my　'book
─────────────

　　•
　　　　.　.　　•　　　(tonic on <u>this</u>)
─────────────

(c)　'This　is　my　'book
──────•──────

　•　　　.　　•　(tonic on is)
─────────────

These last three examples are sometimes referred to as contrastive stress. So, we move on from here to our next focus: accentuation (stress).

Self-assessment Exercise 20
20. Listen to the voice on the audio tapes and practice the intonation patterns.

4.0　Conclusion
You have, in this unit, been exposed to the melody of language through your study of tone and intonation. You have also studied various functions of intonation in English.

5.0　Summary
In this unit, you have defined the term **intonation** and have contrasted it with **tone.** You have isolated the various uses of intonation patterns such as the falling pattern, the rising pattern, the fall-rise pattern (the commoner patterns). You have also learnt that in real life, intonation patterns are much more varied than we have seen here.

6.0　Tutor-Marked Assessment 11
11.　Briefly discuss the functions of intonation in English.

7.0　References and Recommended Texts

Eka. D. (1996). Phonological Foundations: English; Uyo, Scholars Press (Nig) Ltd.

Gimson, A. C. (1977) A Practical Course of English Pronunciation: A Perceptual Approach; London, William Clowes and Sons Ltd.

O'Connor, J. D. (1970). Better English Pronunciation; Cambridge; Cambridge University Press.

Unit 2: DEFINING THE SYLLABLE

13.0 INTRODUCTION

A syllable is the smallest unit of pronunciation in a word. It can also be defined as the puff of air(?) that accompanies the production of speech sounds. This corresponds to a peak in the flow rate of the pulmonary air stream. Syllable can also be considered as the most prominent or sonorous sound in a sound neighbourhood(?) or phonetic environment. Vowels usually form the peak of the syllable, as they are always louder than consonants. However, some consonants, called syllabic liquids / l, r / and nasals /m, n/ can also function as the peak of the syllable(s). 13.1 OBJECTIVES
The aim of this unit is to:
- Make you understand the concept: Syllable.
Know the different theoretical definitions of syllable.
Know the different types of syllables.
Know the structure of a syllable.
Know how to determine syllable boundaries.
Know how to determine the strength or weight of a syllable.

13.2 DEFINING THE SYLLABLE

The exact definition of syllable has been elusive, because of the problems associated with syllabification of words. Considering the different phonological theories of syllables, syllables can be defined based on:
13.2.1. CHEST PULSE THEORY
Physiologically, Stetson using CHEST PULSE THEORY defines syllable from the point of view of its production as a "puff of air pushed upward through the

vocal tract by a compression of the intercostals muscles". This corresponds to a peak in the flow rate of the pulmonary air stream. He says, every syllable consists of three successive phases:

- The release phase
- The culminate phase
- The arrest of the pulse phrase

The consonant sounds form the release and the arrest of the pulse phases (onset and coda), while the vowel sound or the nucleus or the peak form the culminate phrase. Thus a syllable is described structurally as comprising:

- The onset
- The nucleus or peak
- The coda

Syllable

Rhyme

Onset

Peak   **Coda**

13.2.2 PROMINENCE/ SONORITY THEORY
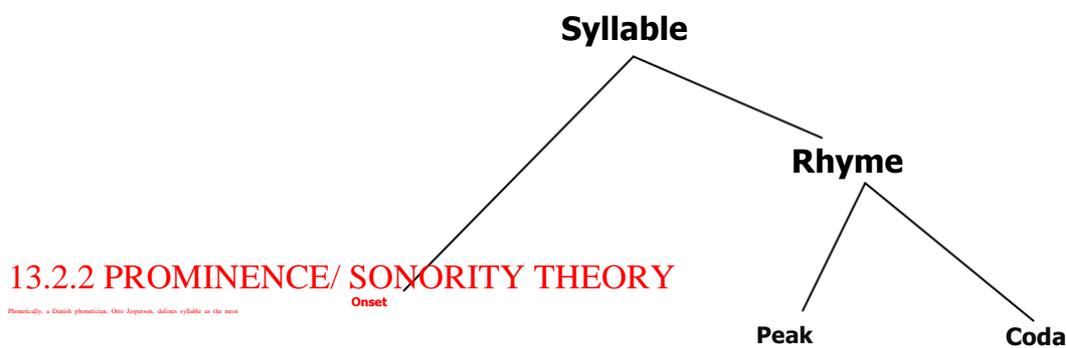
Phonetically, a Danish phonetician, Otto Jesperson, defines syllable as the most prominent or relatively loudest or most sonorous sound **(Nucleus)** in a sound neighbourhood or phonetic environment. Vowels usually form the peak of the syllable, as they are more sonorous than consonants. However, some consonants, called syllabic liquids / l, r / and nasals /m, n, / can also function as the peak of the syllable(s).

Sonority is the phonetic loudness of sounds, thus syllables are associated with the peak of sonority. Oral stops are the least sonorous while vowels are the most sonorous. Thus, he came up with sonority hierarchy table. –Arrange correctly

Stops Vowel	Fricatives	Nasals	Liquids	semi-vowels
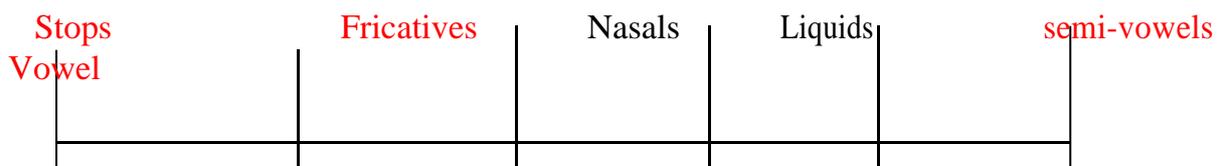
Note that the sonority of a sound is determined primarily by the size of the resonance chamber through which the air stream flows. Thus within vowels, the low vowel is more plainly audible than a higher vowel / i, I, u: u / uttered with the same force, and any vowel is more sonorous than any consonant.

Goldsmith (1990:11) Sonority Hierarchy

Vowels	sound	sonority index
-low vowels	a	10
-mid vowels	e, o	9
-high vowels	i, u	8
Glides	r	7
Liquids	l	6
Nasals	m, n	5

| Obstruents	s	4
Fricatives	v, z, ð	3
Affricate	f, θ	2
Stops	b, d, g, p, t, k	0.5

<div align="right">Arithmetic system</div>

The larger the chamber of the mouth, the more sonorous the sound. For example, compare / i, e, a / or / u, ɔ , a /. Producing these sounds as arranged, there is a sort of grading in terms of resonance based on the opening and the chamber created as the production of these sounds progress. The articulation of / a / sound in the two groups has a greater resonance than any other sound in the groups.

Among the sounds that constitute the word 'claim', the diphthong / ei / is the most sonorous as shown in the graph below.
Claim /kleim/

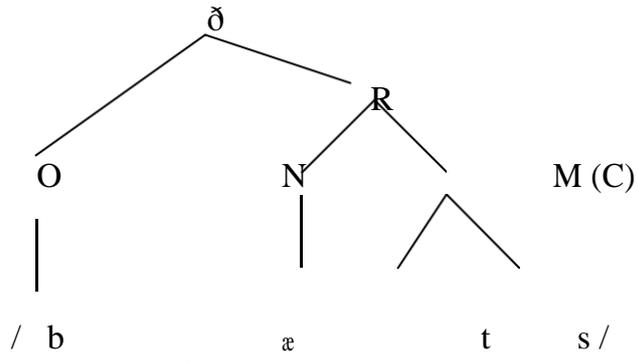**Sonority Peak**
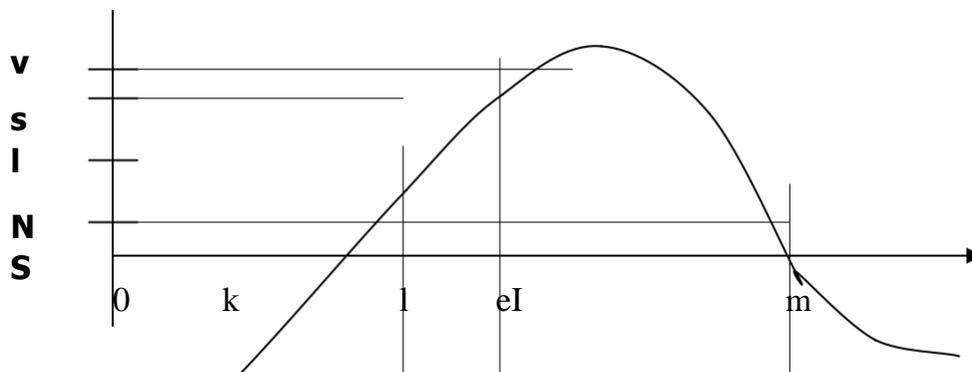
13.2.3 THE STRUCTURE OF SYLLABLE

Syllables are usually described as consisting of a centre, which has little or no obstruction to air flow, and which sounds comparatively louder; before and after this centre, there will be greater obstruction to airflow and / or less loud sound.

The four major structures are:

- A minimum syllable with a single vowel in isolation e.g. are /a: /, or /ɔ: / and err /ɜ:/
  These are preceded and followed by silence. Structurally this is a V-syllable structure.
- Some syllables have an onset e.g. bar /ba: /, key / ki: /, more /mɔ: /. CV-structure
- Syllables with no onset, but coda e.g. am /æm/, ought /ɔ:t /, ease /i:z/. VC structure
- Syllables with onset and coda e.g. run /rʌn /, sat / sæt /, fill / fɪl /. CVC structure

Thus syllable structure can be represented thus:
a) bats / b æ t s /

ð

R

O   N   M (C)

/ b   æ   t   s /

b) Ever   / e v ə /

ð   ð

R   O   R

N

/ e   +   v   ə /

c) Little / litl /

ð   ð

O   R   O   R
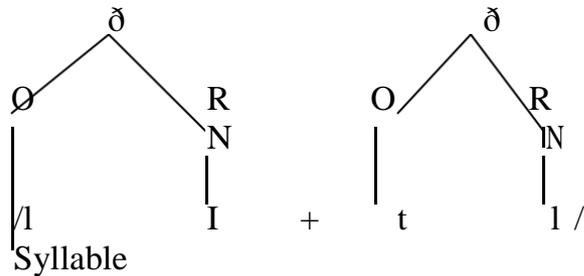
N   N
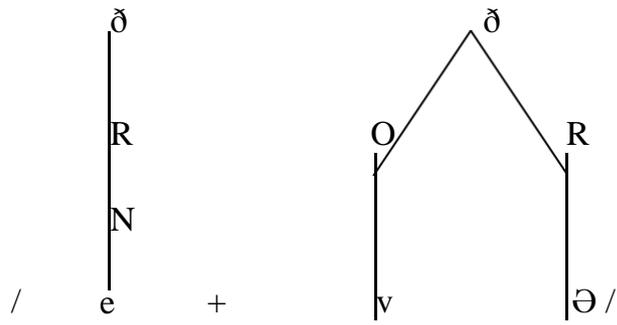
/l   I   +   t   l /

Note:ð -   Syllable
   O – Onset
   R – Rhyme
   N – Nucleus
   M – Margin
   + - Syllable boundary

The major problem in the phonetic description of the syllable is on the division between syllables or syllable boundary (+). There are some words that the exact syllable boundary cannot be determined. For example;

        I. Aroma   / ∂r∂uma /
       II. Extra   / ekstrə /
   e + kstrə   ek + strə   eks + trə   ekst + ə   ekstr + ə

In the word 'going' / g ∂uIŋ /, does / ɪ / belong to the first or second syllable, since its articulation is slightly closer to obstructing airflow than the vowels next to it. Phonologically, / ɪ / is part of the / əu / diphthong phoneme. This makes syllabification a bit difficult.

Syllabification provides a way of grouping arrays of CV elements into syllables. It is clear that each V-element will be associated with a syllable peak. What is confusing is which syllable nodes are C-elements e.g. panic "CVC VC-structure". The onset first principle (Khan 1976, Clements and Keyser 1983) says,

a)   Syllable-initial consonants are maximised to the extent consistent with the syllable structure of the language concerned.

b)   Subsequently, syllable-final consonants are maximised to the extent consistent with the syllable structure of the language in question.

Principle (a) must apply before (b) in any derivation. In a word like [e + və] the Onset First Principle requires that the string be divided up as 'V + CV' rather than 'VC+V', that is,

 [e + v ə] and not [ev+ ə].

Another example is 'a + spire' or 'asp+ ire'. The former is correct using the onset first principle.

        Clements and Keyser (1983: 38) also say:

a)   Underlying every 'V' of the 'CV – tier' is linked to ð, this shows that no syllable exists without a V-element (as nucleus)

b)   Link each C- element to the nearest V-element to its right provided the resulting sequence of segments does not violate any language specific rules. This procedure creates syllable onsets.

c)   Repeat the procedure in (b), this time linking the 'C- elements' to the nearest 'V' to its left. This procedure creates syllable co da / margin.

Consider the example below,

a) 'Conscript' -/ k ∂nscript /

        / K∂n /   / script /
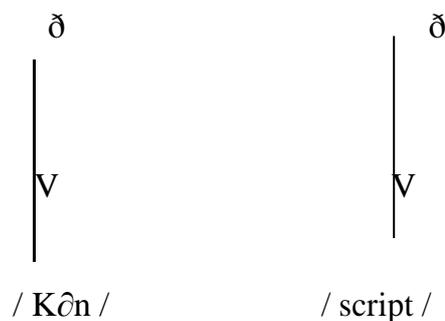
Linking V element with by convention 'a'

b)

$$\eth$$

C   V   C $\eth$
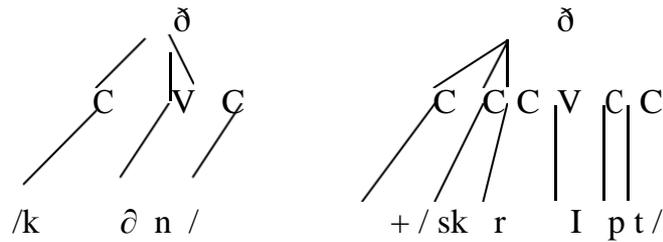
/k   ∂ n /   C C C V C C

           + / sk r   I   p t /

By convention 'b' link c-element to the V on their right, one at a time provided the resulting sequence is permissible in the language. Thus /skri/, but not /nscri/ because in English nasals are not allowed to occur at the beginning of a syllable initial consonant cluster.

c) By convention 'c', link C-elements to the V preceding them, so long as the resulting sequence is allowed.

$$\eth$$

C   V   C   C   C C   VCC

/ k   ∂ n   s k r I   p t   /
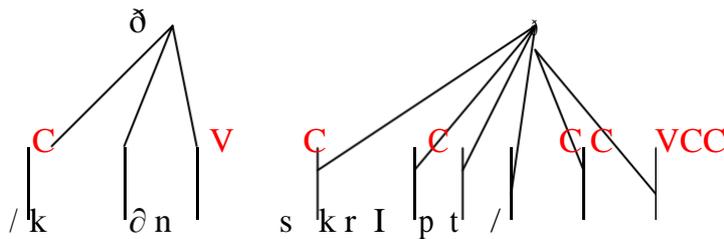
Phonotactically, syllable rules in English say, if the first syllable of a word begins with a vowel (any vowel may occur, though / ɔ / is rare, such syllable has a zero onset. If the syllable begins with one consonant, that initial consonant may be any consonant except / ŋ /, / ɔ/ which is rare. In terms of initial consonant clusters, the maximum is three:

C1   C2   C3

$ P   l

         t   r

         K   w

                j
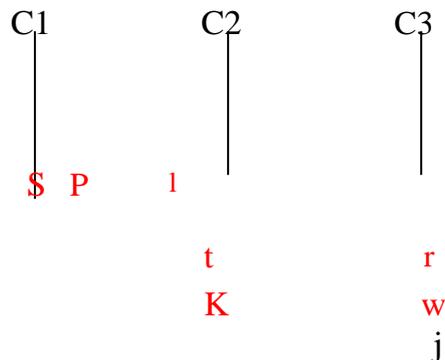
The pre-initial consonant must be /s/, the initial must and could be any of /p t k/, which the post-initial could be any of / l, r, w , j /.

Pre-initial		initial	post-initial			
S	+	p	l	r	w	j
		T				
		K				

At the onset the C- elements range from 0-3 = C 0-3

On the right margin or coda, consonant clusters range from 0-4=C0-4

It is zero coda when there is no final consonant e.g. tea, air, ear. It is final or one consonant coda when there is one consonant only. It could be any consonant, except / h, r, w, j /.

In terms of two consonant codas, there are two types,

A) A final consonant preceded by a pre-final consonant. The pre- final consonant form a small set: / m, n, ŋ, l, s / bump, bent, bank, belt, ask.

B) A final consonant followed by a post-final consonant. The post-final consonants also form a small set: / s, z, t, d, Ɵ / bets, /bets/, beds/bedz/, backed /bækt/, bagged /bægd/, eighth /eIt Ɵ/. N/B. The post final consonant can be identified as separate morphemes (though not always, e.g axe /æks/ is a single morpheme, and its final / s/ has no meaning)

THIS SECTION HAS BEEN POORLY EXPLAINED. THE SYLLABLE STRUCTURE (C)0-3V (C)0-4 and its constituent elements need to be clearly explained first before citing examples of each. Phonotactics too (and the rule constraints).Roach (2000) explains it well

There are two types of final three consonant clusters:

A) The first is pre-final + final + post final:

		Pre-final	final	post-final	e.g
Helped	h e	l	p	t	
Banks	b æ	ŋ	k	s	
Bonds	b D	N	d	z	
Twelfth	twe	L	f	Ɵ	

B) The second type shows that more than one post-final consonant can occur in a final cluster, i.e. final + post-final + + post-final 2.

Post-final 2 can be one of / s, z, t, d, Ɵ / e.g

Pre-final?!		final	post-final 1	post-final 2
Fifths	fi	-	f	Ɵ	s
Next	ne	-	k	s	T
Lapsed	l	-	p	s	T

C) Most four -consonant clusters can be said as consisting of a final consonant preceded by a pre-final and followed by post-final 1 and post- final 2 e.g.correct!!

		Pre-final	final	post-final 1	post-final 2
Twelfths	twe	l	f	Ɵ	S
Prompts	prD	m	p	t	S

The below shows a final consonant with no pre-final?! but three?! post-finals

		Pre-final	final	post-final 1	post-final 2
Sixths	sI	-	k	s	Ɵ
Texts	te	-	k	s	T

In the final analysis, English syllable may be described as having the following maximum phonological structure:

$$C_{0-3}VC_{0-4}$$

This specification states that the syllable structure in English can have an onset of no consonant at all or up to three consonants, an obligatory vowel as the peak, and a coda made up of no consonant at all or up to four consonants.

13.2.4 SYLLABLE STRENGTH (WEIGHT)

Traditionally, a syllable could be said to be:

- Open syllable- syllables without a final consonant e.g to- //tu:/
- Closed syllable- syllables that end with consonants e.g rat / raet /

In contemporary linguistic syllables phonological system is described in terms of syllable weight. In many languages the factor that determines the applicability of certain phonological rules is the weight of the rhyme (i.e. [the peak/nucleus (+coda)])
Essentially, a syllable is light if it contains a non-branching rhyme. In a light syllable the rhyme contains a short vowel.
A syllable is heavy if it contains a branching rhyme. In a heavy syllable that rhyme contains either:

A) A long vowel or diphthong, optionally followed by one or more consonants or
B) A short vowel followed by at least one consonant e.g.

Syllable weight forms the heart of poetry metre, which is written in verse.

13.3 CONCLUSION

We have defined syllable as the smallest unit of pronunciation in a word. We added that it can also be defined as the speech sounds within a puff of air that accompanies the production of speech sounds. Scholars defined syllable differently based on individual conviction. Syllable has a structure made of onset, nucleus and coda. The onset and coda must be consonantal sounds, while the nucleus, otherwise called 'the peak' must be the vowels or syllabic consonants. The possible syllable structures in English are: v, cv, vc, cvc and different combinations, up to the maximum cccvcccc. Syllable has weight and this forms the heart of poetry metre, which is written in verse.

13.4 SUMMARY

A syllable is the minimal pronounceable unit in words. There are three types of syllables which are: monosyllabic, disyllabic and polysyllabic words. Every syllable must take a stress mark which could be primary, secondary or tertiary. Structurally, syllable comprises: the onset (the first consonant sound(s) in a syllable), the nucleus or peak (the element of the syllable that takes the stress mark on syllabic sounds) and the coda (the last consonant(s) on a syllable). The general formula for English syllable is $C^{0-3} V C^{0-4}$. A syllable may not have any consonant at the initial position of words. It may have one and must not exceed three. At the final position, it may have none, may have one, two and must not exceed four. Syllable structure varies from language to language.

13.5 TUTOR MARKED ASSIGNMENT

1. Define a syllable using any of the theoretical approaches.

2. Divide the following words into syllables and place the primary stress correctly:
communication, aroma, university, open, television, facilitator, student, hospital,
little, button, bottle, water, go, isolation, education, cup, house, soldier.

3. With copious examples, when is a syllable said to be light or heavy?

4. Discuss the syllable structure using the Schema $C^{0-3} V C^{0-4}$.

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Unit 3:   Syllable Structure/Juncture

Table of Contents
This unit introduces you to Syllable Structure/Juncture. The language for illustration is English.

1.0   Introduction

This unit exposes you to the nature of the syllable in English. It provides for you some of the key ways of considering the meaning of the term syllable and the issue of juncture.

2.0   Objectives

By the end of this unit, you should be able to:
i)   explain what a syllable is;
ii)   illustrate how sounds are combined to bring about syllables (i.e. the structure of the syllable);
iii)   appreciate the hypothetical or composite structure of the syllable;
iv)   practise juncture demarcation using specific words.

3.0   The English Syllable: Meaning

Many attempts have been made by many scholars in phonetics and phonology to explain the term **syllable**. Apparently, there is hardly any single satisfactory explication. In spite of this (or rather because of it), we are going to examine various views and approaches and then to help you to decide on the one that seems most nearly satisfactory.

We can attempt to explain the syllable from the viewpoint of phonetics and from the standpoint of phonology. With regard to phonetics, the attempts are in two parts – from the viewpoint of articulatory phonetics and from the viewpoint of auditory phonetics. Connected with the articulatory phonetics is the **pulse theory** which states that when the pulmonic air stream mechanism is in action, the respiratory muscles alternately contract and relax so that the air is expelled in a succession of small puffs with each contraction.

The resulting puff of air then constitutes the basis of the syllable. The syllable from this viewpoint then becomes an audible movement called a chest pulse, breath pulse or syllable pulse. Since at least one such movement must be involved in

whatever we say, the syllable has been taken to be **the minimum utterance or the smallest sound produced with one pulse of breath**.

This is the explanation which is usually said to be universal: the pulse theory covers the syllable in all natural languages.

Self-assessment Exercise 21
21. Discuss the *pulse theory* as the basis of explaining the term syllable

Secondly, from the viewpoint of auditory phonetics, there exists what has usually been referred to as the **prominence theory**. According to this theory, syllables may be distinguished in terms of their peaks and valleys of sonority, the peaks denoting the areas where the sound comes out most audibly, the valleys designating the areas of comparatively less audible sound produced. For example in the word **caught** /k□:t/, it is generally known that the sound [□:] is more sonorous than either [k] or [t]. In the word **remedy** /'r ImIdI/ we have three syllables with the vowels /e/, /I/ and /I/ constituting the peaks; the /r/, /m/ and /d/ making up the valleys. Those who propounded the theory have, from their findings, come to the conclusion that plosives are the least sonorous of all sounds while the semi-vowels are the most sonorous of all consonants. The vowels, on the other hand, remain at the other extreme of being the most sonorous of all sounds.

Thirdly, from a specific, functional viewpoint, the syllable may be explained taking into account the phonological rank scale in the first instance. Since, in this scale, we have: "the tone group, the foot, the syllable and the phoneme" (cf. Halliday *et al* 1970: 45). We can say that the **syllable is that unit of phonological description which comes between the phoneme and the foot**.

Fourthly, from the specific functional viewpoint, the syllable may be explained from the viewpoint of structure. According to this viewpoint, the English syllable is describable as **the linking of vowels and consonants with the vowels generally forming the nucleus or central part of the syllable**. In this explication, it is important to note such operational terms as **the onset** (the opening segment of a syllable) the **centre or nucleus** (the central segment of the syllable), and the **coda** (the closing or arresting) segment of the syllable. (cf. Crystal 1991: 339).

Self-assessment Exercise 22
22. Explain the *syllable* from the viewpoint of phonological rank scale and from the viewpoint of structure.

3.1   The Syllable in English: Its Structure
The last explication of the syllable that we have offered here (from the viewpoint of structure), seems most suitable and applicable for our purpose. It also leads us naturally to this second part of our description – the structure of the syllable in English. However, occasional references may be made to other explications.

As a starting point, we know that the vowel is the most sonorous part of a syllable and that it (the vowel), can stand on its own as a syllable. So, an English syllable can be made up of a vowel alone, as in the entries: **are, our** or **air**. To show that in this type of syllable there are no consonants (whether as onset or coda), we can represent this structure as: O   V   O

or simply, V. Here "O" means no consonant at the syllable initial position and none at the final position; V means the presence of a vowel or nucleus. Very rarely, we have something like a consonant alone. For instance, in the utterance: **sh!** we can represent the syllable to show that it occurs as a consonant constituting the onset followed by nothing else (no nucleus and no coda). However, since utterances (interjections) like **Sh! Ah! Oh! Mm!** Are not language specific, (they occur across languages), we can exclude the occurrence of only a consonant in an English syllable, (except as it affects the foregone explication).

More usually however, we have English syllables which combine vowels and consonants. For instance, we can have one consonant onset combining with a nucleus as in the syllables: **tea, fee, see, pear** and **sow**. To demonstrate the presence of an onset and a nucleus and the absence of a coda, we can represent the structure thus: C V O. Here, you are advised to note again that we are concerned with **sounds** (not letters), and that the syllables: **tea, fee, see, pear** are of the CVO structure because they are transcribed as:

/ti:/, /fi:/, /si:/ and /pe↔/ respectively.

Also, it is worthwhile drawing your attention to the fact that **tea, fee, see, pear** and other items of a similar syllable structure are syllables which in morphological terms are of word status.

3.1.1 More Complex Structures

We can also have syllables in which the three components are present: the onset, the nucleus and the coda: CVC. A syllable of this nature can be found in items like: pet, set, read, pool

We can have a maximum of three initial consonants: CCC – and a maximum of four final consonants – CCCC in an English syllable. Of CCC initial, the following are examples of items: **spread, street, spleen;** of – CCCC final consonants we have the following examples: **prompts, thousandths.** The information we have so far in relation to the structure of the English syllable can be summarized as in the following Table.

Table I: Syllable Structure in English

Entry	Consonant (onset)	Vowel (nucleus)	Consonant (coda)
Our	O	V	O
Go	C	V	O
boat	C	V	C
clear	CC	V	O
clean	CC	V	C
cleans	CC	V	CC
straw	CCC	V	O
street	CCC	V	C
streets	CCC	V	CC

strengths	CCC	V	CCC
prompts	CC	V	CCCC

Strengths=/streŋkɵs/cccvcccc.

Taking into account the fact that the nucleus is the compulsory element in the structure of an English syllable and the fact that the consonants do occur along with the nuclei, we can indicate a composite or hypothetical structure of the English syllable thus: (C) (C) (C) V (C) (C) (C) (C)
Alternatively, the composite or hypothetical structure may be shown thus:

$$C_{0\text{-}3}\ V\ C_{0\text{-}4}$$

The first composite structure simply shows that the consonant-syllable initial and syllable final – are optional, the vowel is compulsory.

The second composite structure has the information that we can have an English syllable that has no initial consonant and none with more than three initial consonants. Also, we can have an English syllable that has no final consonant and none with more than four final consonants. In either case, the vowel remains constant: a required element.

3.2   Syllable Juncture

The term syllable **juncture** refers to the demarcation of a word of more than one syllable into its syllable components. In Eka (1992: 1-8; 1995 (1-29) this matter, along with relevant modifications – juncture raising, juncture lowering and juncture levelling – are discussed.

Here we consider it sufficient to indicate that juncture in English is a controversial matter. Abercrombie (1975: 36) for instance, indicates that the English word **better** which apparently has two syllables can be uttered as a word of one syllable. For many English words, scholars have tended to demarcate syllables of words differently. However, the following syllable demarcations are functional (attested), and so deserve your attention:

> Dav-id
> Jan-et
> dis-trib-ute
> mad-am
> cal-en-dar
> con-trib-ute
> cav-al-cade
> cir-cum-scribe
> cir-cum-spect
> dif-fer-ent
> fes-tiv-ity
> fet-ter
> in-cho-ate
> in-cli-na-tion
> in-tel-lect
> in-ter-act

in-ter-est
                    pol-ite
                    pon-der-ous
                    top-ping
                    vis-ible
                    writ-ing
                    hect-or
                    start-ed

You should also do yourself a favour by looking up English words in any good dictionary for the purpose of identifying syllable junctures.

4.0   Conclusion

In this unit, you have studied the word **syllable** and can explain it in four different ways. You have also studied the English syllable with attention to its three components and to its juncture.

5.0   Summary

You have, in this unit learnt to explain the term syllable in four different ways. You have also understood the structure of the English syllable with attention to such important concepts as the **onset, the nucleus** and the **coda**. You have also been exposed to syllable juncture concept and can identify syllable juncture in some English words such as:

                    Dav-id;
                    Mad-am;
                    Pet-er.

6.0   Tutor-marked assignment 12

Explain the composite or hypothetical structure: $C_{0-3} \ V \ C_{0-4}$

7.0   References and Recommended Texts

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Unit 4: Accentuation / Stress

Table of Contents
This unit introduces you to accentuation/stress in English. The unit is arranged thus:

1.0   Introduction
        This unit exposes you to a very important phonological issue -accentuation. The unit also explains the difference between accentuation and accent, accentuation and stress and points out for your attention generally acceptable accentual and stress patterns.

4.0   Objectives
By the end of this unit, you should be able to:
   (i) explain the terms accentuation and accent; accentuation and stress and be able to differentiate between them
   (ii) indicate general/common applications of the terms accentuation/stress
   (iii) apply the terms to specific words and utterances.

3.0   Accentuation/Accent: Difference
        The terms accentuation and accent are not normally used interchangeably: accentuation refers to the emphasis or the totality of energy that makes a sound, a syllable, a word or even a stretch of utterance to stand out from the other sounds, syllables, words or stretches of utterances. Thus, an item such as a sound or a syllable that receives accentuation may be said to have been accented and such an accented syllable or sound naturally becomes prominent, (easily heard) by virtue of its being louder than the other sounds or syllables in the specific environment. In this unit we are concerned with an introduction to the entire accentual system in the phonology of English.
        Accent on the other hand refers to a variety of pronunciation associated with a particular person or group. It has practically nothing to do with variation in grammar or vocabulary. From a functional viewpoint, the term accent can be used by an L_1 speaker to single out and to characterize nonnative (L_1 or foreign) pronunciation as compared to the pronunciation of the given language by another L_1 speaker. Similarly, an L_2 or foreign speaker can single out and characterize native pronunciation as compared to the pronunciation of the given language by another L_2 or the foreign

speaker. In each case, we can emphasize that the focus of attention is the pronunciation not the grammar or the vocabulary.

However, it is only the L_1 speaker or the L_2 or foreign speaker educated in the language who is often known to refer to others outside these categories as "having" or "speaking with" an accent. Having or speaking with an accent therefore implies a departure from L_1 norms or the norms of the standard variety of any language. With regard to the English language, L_1 speakers or educated L_2 or foreign speakers are often known to refer to others, particularly other speakers of the new Englishes as "having" or "speaking with" an accent.

3.1 Accentuation and Stress

The terms accentuation and stress are quite often confused even by some who are above the foundation stage in their study of phonology. This situation is easy to appreciate when we consider the fact that many authorities in phonology have used the terms in different ways. We shall briefly consider a few of the diversifications in this connection.

Ward (1972:156) sees accentuation as prominence which can be achieved through a very intimate combination of two or more of length, stress, pitch and inherent sonority of sounds. Gimson (1977:33) sees accentuation in a way quite similar to the above: as prominence which can be achieved through any or all of four factors: stress, pitch, quality and quantity.

In this unit stress is indicated specifically as: "loudness for the listener" while pitch prominence associated with it (stress) is considered the most important correlate for the determination of the accentual system of the given language. Thus, we see that these two sources see accentuation as prominence – an embodiment with identifiable components. Clark and Yallop (1990:288) on the other hand, indicates that accentuation and stress are sometimes used as alternative terms, and in this rather loose sense, what is referred to as word stress or lexical stress may, alternatively, be referred to as word accent or lexical accent. Sommerstein (1977:37-38) is apparently more specific on the matter: while considering both terms as embodying prominence, it shows stress as the actual realization of prominence and accentuation as the objective realization of the same phenomenon. In other words, we can analyze or describe stress in perceptual terms: the place that the hearer perceives prominence whether in the sound or the syllable or the word or a longer utterance. We can therefore analyze accentuation in phonological terms: the way prominence is organized in relation to sounds, syllables, words or other utterances. Where, therefore, we use the word accentuation in this unit the reader is free to think about stress… its component in perceptual or phonetic terms.

Self-assessment exercise 23
23.   (a) briefly distinguish between accentuation and accent
        (b) accentuation and stress

3.2 General use of Accentuation/Stress in English

When we pronounce English words in isolation, it is easy to notice that word accentuation is fairly regular, almost fixed. For example, in isolation the words: David, people, reason, teacher, Janet can be observed to have accentuation always on the first syllable. On the other hand, the words: forget, success, proclaim, decide, extend can be noted to have accentuation always on the second syllable.

As indicated in section 3.1 it is always useful to separate accentuation from stress as Gimson (1977) does. As a rough guide, whenever you pronounce a word and place prominence in it, you can be said to have employed accentuation. When your study partner pronounces a word, the part of it that sounds louder for you e.g. suc'cess, is the stressed part. When you analyze written texts, you can use the word stress. What follows is a general guide on the use of accentuation or stress as appropriate.

(i)   Generally all English words of more than one syllable can be said to have stress at a particular place when the word is heard in isolation.

(ii)   Words of one syllable are generally known to show stress if they are **nouns, full verbs, adjectives or adverbs.**

(iii)   Interrogative pronouns are generally heard as stressed. Example: **What** are you doing?

(iv)   Demonstrative pronouns are generally heard as stressed. Example: **This** is the teacher.

(v)   Relative pronouns are generally heard as stressed if each is preceded by a preposition. Examples:
   (a) The overhead bridge under **which** the beggar lives.
   (b) The premise on **which** the conclusion rests.

Even though other words like pronouns, modifiers, conjunctions, prepositions (grammatical items) are not normally heard as stressed when in isolation, they can be accented and hence can be heard as stressed in connected speech for special purposes e.g. contrastive purposes.

3.3   Specific Words and their Accentual Patterns

As already stated, all English words of more than one syllable are normally accented in one (fixed) position when the words occur in isolation.

Also, words of one syllable (monosyllabic words) are generally given accentuation if they are open class items, i.e. if they are:
   (i) nouns such as John, house, peace, tree, pen;
   (ii) or they are full verbs such as sweep, dance, eat, read, sing;
   (iii)   or they are adjectives such as good, bad, prim, clean, poor;
   (iv)   or they are adverbs such as there, here, past, well, very.

All other monosyllabic words are generally observed to be unaccented and therefore heard as unstressed. For example:
   (i) pronouns such as: I, we, he, you, she
   (ii) specific and nonspecific modifiers (articles) such as: the, a, an
   (iii)   conjunctions such as: and, or.
   (iv)   Prepositions such as: in, on, at, from by.

As a further step in the provision of words and their accentual/stress patterns, you should note the following:

Pattern 1: Examples of words of two syllables with accentuation/stress on the first syllable only:

Absent	antics	Agnes
Ever	even	erring
Fully	finger	fever
imprest	instant	inches
passive	panther	pastor
zealous	zealot	zebra
zenith	zig-zag	zoning

Pattern 2: Examples of words of two syllables with accentuation/stress on the second syllable only:

admit	across	along
effect	Event	erode
inform	Impress	ignore
July	Japan	jocose
narrate	neglect	negate
without	within	whereas

Pattern 3: Examples of words of three syllables with accentuation/stress on the first syllable only:

abdomen	Abigail	afterward
janitor	juvenile	odorous
telephone	televise	talking-drum
uvular	upkeeping	varnishing
wonderful	willingly	yesterday

Pattern 4: Examples of words of three syllables with accentuation/stress on the second syllable only:

addition	abrasive	abundant
December	decision	develop
important	inferior	intrinsic
perfection	perennial	perception
tomorrow	taxation	volcanic

Pattern 5: Examples of words of four syllables with accentuation/stress on the first syllable only:

auctionary	dictionary
February	January
valuable	veterinary

Self-assessment Exercise 24

24. (a) Select 20 words from your dictionary and indicate their stress patterns. Endeavour to avoid the words listed in this unit.

(b) Listen to the voice on your audio tape and practise the accentual positions indicated therein.

3.4   Accentuation of words in Connected Speech

You studied in section 3.2 that every accentable word in English has a specific accentual position which every speaker keeps to in order to ensure appropriateness in the phonological shapes of words.

In connected speech however, above information becomes modified in quite significant ways, the following being some of them:

(i)   in connected speech, practically every English word has been known to be accented for specific reasons. For instance, in the sentence:

(ii)   I think he wants to read;
only three words would be accented thus:
I 'think he 'wants to 'read The dots used below aren't totally correct; pls confirm

If however, a speaker intends to emphasize his opinion and to contrast it with other people's views, he can change the nucleus from read to I, thus leaving the sentence as:

I   think he wants to read
───────────────────

     •
          •   •   •
───────────────────
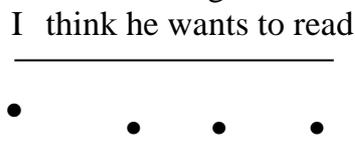
The same speaker or another one, may decide to place the emphasis on the word he to draw attention to the fact that he means a particular person, not another, so the nucleus of the sentence could move to the word *he* thus giving it the shape:

I   think he wants to read
───────────────────

        •
    •   •   •
───────────────────
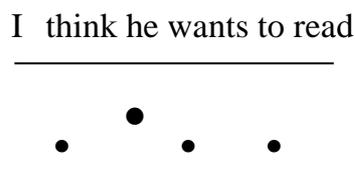
Again, the speaker may have in mind a contrast between **need** and **want.** In that case, he may thus emphasize this fact that the person he is referring to wants to read, not that he needs to! So, the nucleus could then shift thus:

I think he wants to read
───────────────────

       •
   •   •
───────────────────
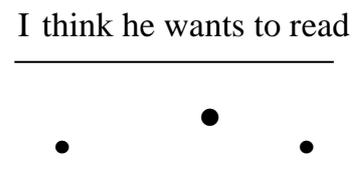
The second important point to note about accentuation in connected speech is that speakers generally tend to avoid "clashes" when two or three accented syllables come together in a stretch of utterance. For instance in the utterances.

(i) good food;

(ii) beautiful girl;
(iii)   honest intention;
(iv)   heavy rain;

we notice that each word has or represents an accented syllable. To avoid two strongly accented syllables coming together, it has generally been observed that speakers tend to make some of the accented syllables attain the status of weak syllables to ensure appropriate rhythmic patterning. Thus, in the four utterances here, it is generally observed that speakers tend to weaken the first otherwise accented syllable thereby retaining only the second in each utterance. This relates to the metrical theory of word stress which you will study in detail much later in your phonology course.

5.0   Conclusion

You have studied a number of matters relating to accentuation and stress. You should by now be better informed about accentuation and stress, accentuation and accent and the relationship which holds between each pair.

6.0   Summary

You have in this unit studied accentuation and accent:
(i)   accentuation and stress
(ii)   specific words and their accentual patterns as well as
(iii)   accentuation of words in connected speech

7.0   Tutor-Marked Assignment 13

Briefly discuss accentuation pointing out how it features in English

8.0   References

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Unit 5:   **Rhythmic Patterns**

Table of Contents
This unit introduces you to rhythmic patterns in English. The unit is arranged thus:

1.0   Introduction
          This unit exposes you to a composite discussion of melody in natural languages and specifically in English. It demonstrates the interplay of intonation, accentuation, duration and pausing in the achievement of rhythmic patterns in English.

2.0   Objectives
By the end of this unit, you should be able to:
    (i)   explain timing and variation in natural languages;
    (ii)   identify the components of rhythmic; do you mean rhythmic patterns
    (iii)   demonstrate the combined effects of intonation, accentuation (stress, duration on rhythmic (melodic) patterns.

3.0   Timing and Variation in Natural Languages
          Rhythm is sometimes known by another name – timing. This is because rhythmic patterns involve time sequences, which are very largely regular. The time sequences mentioned here obtain in practically all natural languages.
          Because of their nature, rhythmic or timing patterns are also sometimes referred to as universal melodic or musical patterns.

          There are many approaches to the study of rhythm depending on the theory one uses, and also the language involved. Generally however, scholars have tended to classify rhythms of natural languages into three: **stress-timed, syllable-timed** and **mora-timed.** Languages which are stress-timed are generally said to be those whose utterances can be broken down into parts (or feet) which are isochronous i.e. of equal duration, the basis for the segmentation being the accented syllable together with any number of unaccented syllables before the next accented syllable. English, Russian, German and Arabic are usually know to be in this category. Syllable-timed languages are also said to be those which are isochronous, but unlike the situation with stress-timed languages, the basis for the segmentation is the syllable, whether accented or unaccented. The indication in this case is that the number of syllables in an utterance determines the duration of the utterance, as each syllable is accented. Examples of

syllable-timed languages include French, Spanish, Italian, Telugu, and Nigerian Languages such as Hausa, Yoruba, Igbo, Ibibio. With regard to mora-timed languages syllable duration depends on the number of moras which themselves are usually said to be isochronous within the syllable. Such languages are known to include **Japanese** and **Estonia**. Thus, the concept of isochronism (equal time-ness) has stood out as the focal point in all analyses of rhythm so far in natural languages.

3.1 The Components of Rhythm

The components of the rhythm of any natural language depend on the theory used in the analysis. We have no intention of taking you into theories and controversies, rather, the task we present to you is that of analyzing the usual composite categories of intonation, accentuation/stress, duration/quantity and pauses.

You are already familiar with the categories of intonation patterns of rising and falling tunes; accentuation/stress patterns of prominence; duration patterns of length and quantity and pauses – a tendency towards hesitation at both appropriate places (making both appropriate places (marking fluency) and in inappropriate places (marking jerkiness).

Self-Assessment Exercises 25

25.   (a) Briefly distinguish between stress-timed and syllable-timed rhythms in natural languages

(b) What are the components of rhythm used in the analysis of the rhythm of English in this unit?

3.2 Rhythmic Patterns in English

The English of L_1 speakers as well as L_2 and foreign speakers educated in the language has generally been considered to be stress-timed. This description stems from the fact that there is generally a noticeable attempt by speakers to maintain some measure of equality in timing between one accented syllable and the next accented syllable in an utterance. Thus, for the utterance: (i) "Peter thinks that he wants us to play"

a normal English speaker (the L_1 and the otherwise educated) is likely to spend approximately the same amount of time between the accented syllables thus:

// Peter / thinks that he / wants us to / play //.

This means that the speaker is likely to spend about the same amount of time to say each of:

// Peter //

// thinks that he //

// wants us to //

// play //

At the stage in which we are, any student who has paid attention to the relevant sections of this course will have come to the conclusion that syllable accentuation (stress, pitch placement, duration) and intonation all have a part to play in our description of rhythm: the melody of English. It is also likely that such student will have come to the conclusion that the melody of English can be described through intonation alone, through syllable accentuation alone or through both. In this unit we have combined accentuation (stress and duration in particular) and intonation to arrive at the rhythm of our illustrative utterances.

The following are the utterances:

  (i) John wrote the letter in English

  //'John/'wrote the/' letter in/'English//●

  (ii) John wrote the letter in English?

  //'John/' wrote the/'letter in/'English//●⌒

  (iii)   I think it was an excellent affair…. (Right-headed foot below =red lines)

  //I' think/ it was/ an' ex/cellent af/fair…//●⌒

  (iv)   I think it was an excellent affair
  //' I think it was an 'excellent af/fair// tune?

  (v) Mary can go to school, can't she? tune?

  //'Mary/can'go to/'school//'can't she// ●

  (vi)   Mary can't go to school, can she?
  //'Mary 'can't 'go to 'school/'● can 'she// ●   ⌣

  (vii)   What's your name?

  //' what's your/' name// ●

  (viii)   Did you talk with Alice at the club?

  //Did you' talk with/' Alice at the/'club//●⌒

  (ix)   Margaret bought books, pens, pencils and rulers
                                'pens •'pencils
  //'Margaret 'bought 'books/   •and/   'rulers//•
                                •

  (x) Margaret bought books, pens, pencils and rulers

  //'Margaret/'bought/'books● /'pens   and/'rulers//
                                                    /'pencils ● ●

  We can consider the rhythmic (melodic) patterning of the above utterances in pairs. In i and ii, the utterances have different phonological patterns (even though they have identical morphological shapes). Both have accentuation on four items: John, wrote, letter, English with the nucleus on **English**. The two show duration in one item – wrote /r ↔,Yt/ - the diphthong being a long vowel. The main difference is that the first is a statement without implication; the second is a declarative (an indirect) question. The intonation on the first, as normally heard, is a fall. The intonation on the second, as normally heard, is a rise. Thus, while the first makes a simple statement of fact, the second indicates a doubt….as to whether the letter was written in English (or in some other language). It could even imply that the listener did not hear properly what the speaker said and so is requesting for a repetition of the statement.

In the second pair, i.e. iii and iv both have accentuation on three items: ***think, excellent, affair*** with the nucleus on the last: ***affair***. However, the first ends on a low rise intonation to indicate additional information.

Such information could amount to the possibility that the affair was not excellent in any objective or unqualified sense; that there were problems in spite of the claim. The second indicates a falling intonation showing that no additional explication is necessary or intended by the speaker.

The next pair, i.e. v and vi, are tag questions – checking tag and copy tag. Each utterance has two information points: the first and the second parts of the tags. Whereas the first part in utterance v ends on a fall, the second ends also on a fall, giving the possibility that the answer could be positive: that Mary can go to school! In utterance vi, the first part ends on a fall while the second part ends on a rise giving the impression that the answer could be negative: that **Mary can't go to school!** So the rhythmic patterning in these two show a difference mainly in the second part of the tags, although the component – durational difference between can't and can also plays a part. With regard to utterances vii and viii, we notice that both are questions of different morphological as well as phonological shapes. The first. *What's your name?* has a melodic pattern that ends on a falling intonation, being a question that requires information. The second.

Did you talk with Alice at the club?
has a melodic pattern that ends on a rising intonation being a question that calls for "yes" or "no" in answer. Also, while both have the nucleus on the last item, the first has the indicator of duration on your and name; the second has it on talk.

Next, utterances ix and x involve enumeration. In the first, the melody relies on consistent falls, leading to a final fall. In the second, the melody depends on low rises up to the penultimate then a final fall. Both however have those points marking duration as an essential component: Margaret, bought and rulers.

Finally, in this section it should be noted that we are able to arrive at meanings and differences between pairs of utterances because all of them are fluent: they have pauses at appropriate information points. The contrary would have been the case if the rhythm had been jerky or largely so. This explains why the English of a number of speakers within the new Englishes (particularly that of speakers of non-standard sub varieties), is often difficult to understand. Poor rhythmic patterning almost certainly results in poor information distribution and hence difficulty in understanding the message communicated. For example, if the first utterance had a jerky rhythm like //John/wrote/the/letter/in English// or the fourth utterance had been: // I / think/it /was/an/excellent /affair//
meaning would been totally obstructed.

Self-Assessment Exercise 26
26. Listen to the voice on your audio tape in this unit, and practise as the voice directs.

4.0   Conclusion
You have learnt in this unit that there are many factors which contribute to the realization of rhythmic patterns in English. You have also learnt that the factors can be combined together (and you have actually done so) to bring about a specific rhythmic pattern.

5.0 Summary
From this unit you have studied the following among others:
- (i) timing and variation in natural languages;
- (ii) the components of rhythm;
- (iii)   how to analyze the rhythm of English utterances

6.0 Tutor-Marked Assignment 14
14. Outline the components of rhythm and indicate how you may use those components to analyze any three utterances of your choice.

7.0 References/Recommended Texts

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