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SCHOOL OF HUMANITIES,
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Published By:

Mountain Top University



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COURSE GUIDE



COURSE TITLE: INTRODUCTION TO GENERAL PHONETICS AND PHONOLOGY II

COURSE CODE: ENG 204

LECTURER: DR (MRS) M. E. Anana



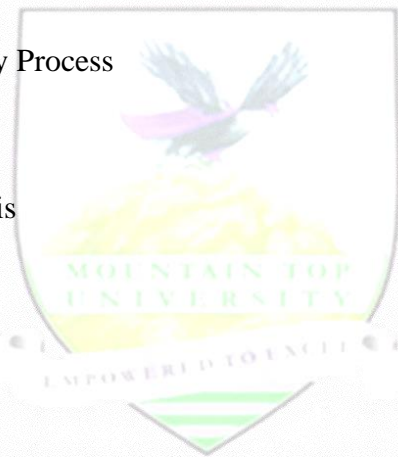
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GENERAL INTRODUCTION AND COURSE OBJECTIVES

This course is an extension of ENG 203: General Phonetics and Phonology I. Differences between Phonetics and Phonology, speech mechanism, phonotactics, etc. should be taught. Emphasis should be laid on the practical aspect of phonetics and phonology.

COURSE CONTENTS

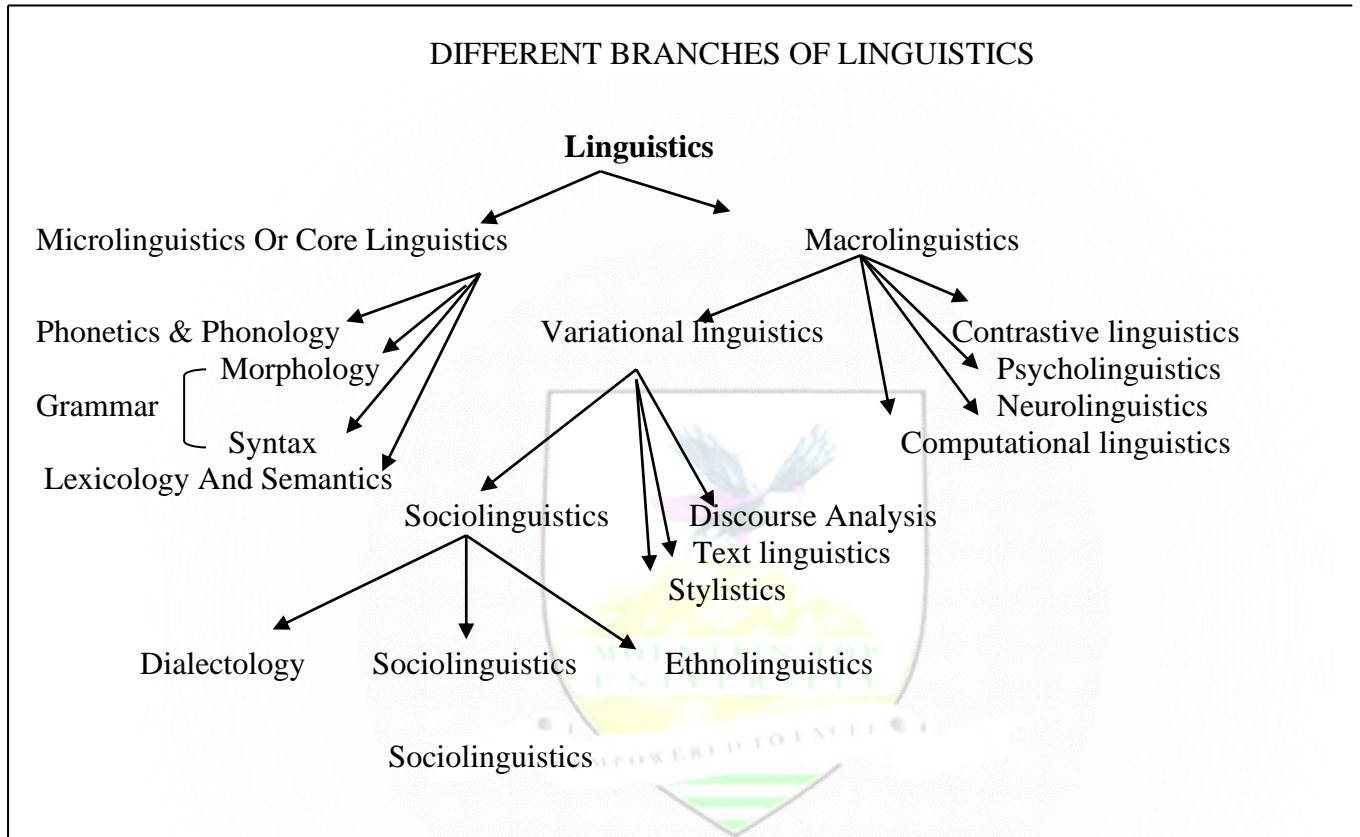
Lecture One: Phonetics and Phonology
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LECTURE ONE: PHONETICS AND PHONOLOGY

1.1 Introduction

Linguistics, the scientific study of languages, has many branches; in order to understand Phonetics and Phonology easily, it is ideal to present the diagram of linguistics branches. See fig1 for the linguistics branches.



In every language, the sound system is the primary because it helps in comprehension, spelling, and general conversations and discourses in all communication situation. On the one hand, if the lexes of a language is rightly articulated, there will be free flow of anything spoken or written. On the other hand, if they are wrongly pronounced, they can cause misunderstanding and confusion.

To avoid these, Phonetics and Phonology are very germane in English studies and should be given the attention they deserve by both the teachers and their students.

Objectives

At the end of this lecture, students should be able to:

1. Differentiate Phonetics from Phonology.
2. Identify the branches of Phonetics and Phonology and
3. Explain the branches identify in 2.



Pre-Test

1. Differentiate Phonetics from Phonology.
2. List the branches of Phonetics
3. Identify the classifications of Phonology

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CONTENT

1.1 Phonetics and Phonology

Phonetic and Phonology are two major linguistics disciplines that are concerned with speech sounds. They are mutually dependent. Phonetics deals with concrete, physical form of sound (how that are produced, heard and described) while Phonology focuses on the functions of sounds (i.e. with their status and inventory in any language. Phonetics examines actual sounds while Phonology studies the abstract patterns of the sound in our minds.

1.2 Phonetics

Phonetics segments concrete utterances into individual speech sounds. It is concerned with parole (performance). It can be categorised into three distinct phases namely, (i) articulatory phonetics, (ii) acoustic phonetics and (iii) auditory phonetics.

Articulatory phonetics deals with the speech called vocal organs or articulators. Acoustic phonetics studies the physical properties of speech sounds (i.e. the way in which the air vibrates as sounds move from the speaker to the listener. The machine that measures these sound waves is called spectrograph; it then depicts them as images called spectrograms or sonograms. It shows the duration , frequency , intensity and quality of speech sounds. Auditory phonetics examines the perception of speech sounds by the listener. (i.e. how the sounds are transmitted from the ear to the brain and how they are being processed .

Also under phonetics, vowels, glides, nasal sounds, oral sounds, voiced consonants, voiceless consonants, voiceless vowels, stops, fricatives, affricates, labial, bilabial, dental, alveolar, alveo-dental, palatal, uvular, glottal, ingressive, egressive, velar, velarized consonants, palatalized consonants, aspirated consonants, front vowels, back vowels, high vowels, low vowels, mid-vowels, semi-vowels, round vowels, syllabic consonant are subjects or discussions.



1.3 Phonology

Phonology is can be explained under segmental phonology, supra-segmental phonology, phonemes, phones, allophones, phonological changes and rules, vowel coalescence, vowel addition, vowel deletion, default vowel, vowel shortening, vowel lengthening, epenthesis, umlaut, homorganic nasal, nasalization, consonant deletion, consonant addition, distribution, complementary distribution, free variation, assimilations, dissimilations, insertions, minimal pairs, syllable, open syllable, closed syllable, prosodic features, stress, tempo, intonation, rhythm

Phonology deals with the speakers' knowledge of the sound system of a language. It is concerned with langue or competence. It is divided into segmental phonology and suprasegmental phonology. **Segmental phonology** is based on the segmentation of language into individual speech sounds provided by phonetics. Unlike phonetics, segmental phonology is interested in the function and possible combinations of sounds within the sound system.

Suprasegmental phonology, also called prosody, is concerned with features of pronunciation that cannot be segmented because they extend over one segment, or sound. The features include stress rhythm, and intonation (pitch contour or pitch movement).

1.4 IPA Symbols

The International Phonetic Alphabet, (IPA) is the most widely used phonetic alphabet, and one that provides suitable symbols for the sounds of any language. It was first published in 1889 by the International Phonetic Association in France, and has since been revised and corrected in various ways. It was initially developed by a group of phoneticians, including Daniel Jones, from a concept proposed by the Danish linguist Otto Jespersen (1860-1943). The abbreviation *IPA* stands for both the alphabet and the association.

English sounds as IPA symbols

14 consonant phonemes

p/	<i>peach, pen</i>
b/	<i>banana, bad</i>
m/	<i>mango, man</i>
f/	<i>film, fall</i>
v/	<i>video, van</i>
θ/	<i>thin, three</i>
ð/	<i>this, the</i>
t/	<i>tiger, tea</i>
s/	<i>snake, see</i>
d/	<i>dolphin, did</i>
z/	<i>zebra, zoo</i>
n/	<i>nightingale, now</i>
l/	<i>leopard, leg</i>
r/	<i>red, rat</i>
tʃ/	<i>cheese, chain</i>
ʃ/	<i>sherry, shoe</i>
dʒ/	<i>gin, jam</i>
ʒ/	<i>measure, vision</i>
j/	<i>yes, young</i>
k/	<i>Canada, cat</i>
g/	<i>Greenland, get</i>
ŋ/	<i>England, sing</i>
w/	<i>Wales, wet</i>
h/	<i>hat, house</i>

5 long monophthong phonemes

/i:/	<i>bee, eagle</i>
/eɪ/	<i>bird, early</i>
/ɑ:/	<i>staring, father</i>
/ɔ:/	<i>horse, saw</i>
/u:/	<i>goose, too</i>

7 short monophthong phonemes

/ʊ/	<i>fish, sit</i>
/e/	<i>egg, ten</i>
/æ/	<i>apple, cat</i>
/ɪ/	<i>hyter, cup</i>
/ɒ/	<i>olive, got</i>
/ʊ/	<i>pudding, put</i>
/ə/	<i>spaghetti, ago, mother</i>

8 diphthong phonemes

/eɪ/	<i>air, hair</i>
/ɔɪ/	<i>ear, near</i>
/ʊə/	<i>tour, pure</i>
/eɪ/	<i>face, say</i>
/aɪ/	<i>mind, my</i>
/ɔɪ/	<i>voice, boy</i>
/əʊ/	<i>now, go</i>
/aʊ/	<i>mouth, now</i>

some allophones

[ʔ]	glottal stop
[ɻ]	retroflex approximant
[ɹ]	alveolar roll/trill
[ɾ]	alveolar flap/tap
[ɹ]	postalveolar approximant
[ɹ]	voiced postalveolar fricative
[ʁ]	uvular roll/trill
[ʁ]	uvular fricative
[β]	bilabial roll/trill

diacritics

[.]	devoicing
[̰]	voicing
[̠]	dentalisation
[̡]	fronting
[̢]	retraction
[̣]	syllabicity
[̤]	stress
[̥]	aspiration
[̦]	absence of aspiration
[̧]	labialisation
[̨]	retroflexion
[̩]	palatalisation
[̪]	velarisation
[̫]	nasalisation
[̬]	nasal release
[̭]	lateral release
[̮]	inaudible release
[̯]	glottalisation, glottal reinforcement

Post-Test

- What is phonetics?



- ii. Explain phonology
- iii. What is the difference between Phonetics and Phonology?
- iv. Explain what is the full meaning of IPA.
- v. Give 10 examples of IPA symbols.

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LECTURE TWO: Airstream Mechanism

2.0 Introduction

This lecture focuses on airstream mechanism used in production of various English speech sounds.

Objectives

At the end of this lecture, students should be able to:

1. Understand airstream mechanism
2. Identify airstream mechanisms

Pre-Test

1. What are airstream mechanisms?
2. Identify airstream mechanisms.

CONTENT

Speech sounds are made with some movement of air. The majority of sounds used in the languages of the world are produced with air that is pushed up from the lungs through the **windpipe**, or **trachea**, and leaves the body through the mouth and sometimes through the nose. This movement of air is called an **egressive pulmonic airstream** [*egressive*, 'outwards'; *pulmonic*, 'of the lungs']. Almost all English sounds are produced by such an egressive pulmonic air-stream mechanism. The air-stream mechanism is therefore not a distinctive feature in English.

The egressive pulmonic air-stream mechanism is the only air-stream mechanism that uses lung air. All languages make use of it, but many languages also have sounds that are produced by a different air-stream. In those languages, the air-stream mechanism may well be a distinctive feature. Three other air-stream mechanisms which are in many languages, especially in Africa, use the air in the mouth, rather than lung air, to produce speech sounds: If air is pushed up from the space between the vocal folds, known as the **glottis**, we speak of an **egressive glottalic** air-stream mechanism. A sound produced in this way is called **ejective**. If the glottis makes the air move inwards, we speak of an **ingressive glottalic** air-stream mechanism, and the sound is called **implosive**. If air is sucked in as a result of movements against the back part of the roof of the mouth, known as the **velum** or **soft palate**, we speak of an **ingressive velaric** air-stream mechanism. A sound produced in this way is called click, and a language that has click sounds is often referred to as a click language.

2.1 Speech Initiation

Adetugbo (1993) observes that the primary source for speech sound in all language of the world is the air we breathe out of the lungs. The air we breathe out is modified in different ways by the vocal organs and are used to produce different sound types.

Other sources of air also contribute to sound initiation in many languages but basically the expelled air from the lungs remains the main source of energy for many sounds. In phonetics, initiation is the action by which airflow is created through the vocal tracts, it is one of the important aspect of sound production. There is no sound without initiation (Speech Initiation). The means of initiating a sound is called Airstream Mechanism. Initiation may be divided into two which are:



- i. Pressure
- ii. Suction

2.3 Pressure: The organs called the initiator builds up pressure within the vocal tracts and when this pressure is built up it creates an outward airflow (P.O).

2.4 Suction: The initiator reduces pressure within the vocal tracts thereby creating an inward airflow (S.I). Sound produced with pressure initiator is called Egressive Airstream Mechanism. While sound produced with suction initiator is called Ingressive Airstream Mechanism.

In the course of initiating airstream, three major airstream mechanisms are recognized in phonetics

- i. Pulmonic airstream Mechanism
- ii. Glottal airstream mechanism
- iii. Velaric airstream mechanism

Each of them has Egressive and ingressive airstreams.

Pulmonic airstream Mechanism: This is also called pulmonic initiation. It is the most important airstream mechanism for speech production in English. Almost all sounds produced in human languages use the pulmonic Egressive airstream (That is the air we breathe out of the lungs). By so doing, the lungs are left to produce the speaking process.

Breathing involves taking air in and out of the lungs; when we breathe in (it is called inspiration), the cavity of the thorax is enlarged, the ribcage is raised upward and outward and the floor of the cavity is lowered. The enlargement of the thoracic cavity results in lowering the air pressure in the lungs. Air therefore flows into the lungs through the nose and mouth.

In breathing out (expiration), the lungs volume is reduced resulting in an increase in lungs pressure and downward movement of the ribcage as well as the rising of the lungs. The air expelled from the lungs flows upward through the larynx, pharynx, mouth and the nose. The act of pushing the air out of the lungs is known as egressive pulmonic airstream.

2.5 Pulmonic Ingressive Airstream Mechanism

This is the use of the airstream that comes into the lungs; there is no language in the world that uses this airstream for now. Also, the International Phonetic Alphabet (IPA) does not have symbols for PIAM. However, Adetugbo (1993) observes that people who are sobbing and talking at the same time usually use pulmonic ingressive airstream.

2.6 Glottal Airstream Mechanism



The glottal airstream mechanism is also called the Pharyngeal airstream mechanism. This is an initiation at the upper respiratory tract by means of vocal cords or glottal. It can also be called glottal initiation, another name for it is ejectives. Since the glottis must be fully closed to form glottalic Egressive. It is impossible to pronounce voiced ejectives.

To perform glottalic pressure initiative (initiation), lower your glottis as if you want to sing in a low tone, close it for a glottal stop, and then raise it; build up pressure in the upper trachea or oral cavity. Then to perform glottalic suction initiation, the sequence of action performed in glottalic pressure initiative is reversed. Raise your glottis as if you want to sing in a high tone; close it and then lower it to create suction in the upper trachea or oral cavity. Glottal ingressive are also called implosives.

2.7 Velaric Airstream Mechanism

Velaric or oral airstream mechanism is also known as initiation at the velum or soft palate. Velaric stops are also called clicks. The International Phonetic Alphabet (IPA) has not provided symbols for egressive and ingressive clicks. Also, no language has been able to differentiate them.

To perform the velaric suction initiative one draws the base of one's tongue back so that air cannot pass through it; then, slides it downwards to create a vacuum behind the articulator.

Velaric pressure is performed by reversing the sequence of action used to produce velaric suction vibration. The base of the tongue is lowered in the throat and moves up to build pressure. It is not possible to produce velaric glottal, pharyngeal, epiglottal or uvular stops as these places of articulation are below the initiator.

2.8 Phonation

This is any means by which the voice box or larynx makes sounds; this involves the vocal cords or the vocal folds in the larynx; the larynx is responsible for the glottal sounds.

Phoneticians that study laryngeal anatomy and speech production sometimes take phonation to mean only the quasi-periodic vibration of the vocal cord. If the vocal cords are vibrating during speech, a voiced sound is produced. All vowels and nasal sounds and some consonants are voiced. The main function of the vocal cords is to produce sounds.

2.9 Articulation

This is production of sounds by various parts of the speech organs called the articulators; for example, the tongue, teeth are articulators.

2.10 Types of articulator

- i. Active articulator
- ii. Passive articulator



The shape of the vocal tracts as it relates to articulation. The shape of the vocal tracts is very important in speech production. It is the main factor that affects the quality of sound. There are three cavities in their shapes that strengthen the quality of sound produced in their shape.

- i. Oral cavity
- ii. Nasal cavity
- iii. Pharyngeal cavity

The oral cavity is the most important cavity because many organs of speech are found there.

The actual speech production is called an Aerodynamics process. This means that all vocal sounds are generated by the passage of a stream of air through the vocal tracts driven by the movement of various organs and modulated to produce specific type of sounds by movement and postures of their sounds.

Nasal Cavity

This is an empty passage and sounds articulated here are called nasal cavity

Pharyngeal Cavity

This is the cavity of the pharynx, it is linked to the nasal cavity and the esophagus and to the opening into the larynx by the epiglottis. In other words, it is like a tube like cavity that later divides into two namely:

The nasal cavity
Oral cavity

Post-Test

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LECTURE THREE: Description of English Vowels

1.0 Introduction

This lesson gives descriptions of English vowels based on the level of the tongue, the position of the soft palate, the length of articulation and the shape of the tongue. Phonetically, vowels are produced without any obstruction of air, and phonologically, vowels usually occupy the centre of a syllable. Even though most languages have over twice as many consonants as vowels, in a way, vowels can be seen as predominant: They carry most of the loudness, pitch, and tone of voice that we perceive in concrete utterances, and since their sound quality varies considerably from region to region, vowels make up most of the characteristics that distinguish different accents of the same language.

Objectives

At the end of this lecture, students should be able to:

1. Identify English vowels
2. Differentiate English vowels from other vowels in our indigenous languages
3. Describe English vowels based on four parameters.

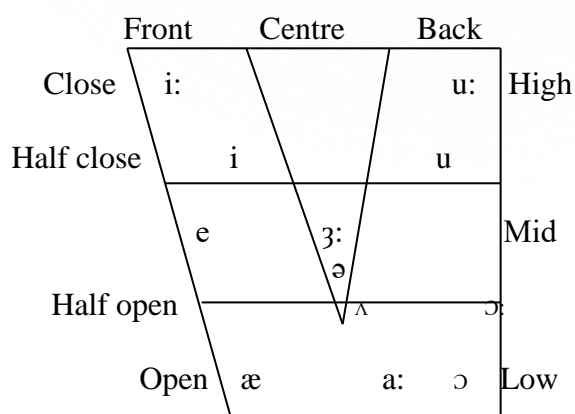
Pre-Test

- i. Identify English vowels.
- ii. Give word each for the vowels identified in (i)

CONTENT

All English vowels are typically voiced, so that voicing would not count as a distinctive feature. The same is true of the air-stream mechanism because all English sounds are made with egressive pulmonic air. Even the place of articulation, which is one of the three distinctive features for the description of consonant phonemes, is of no relevance here because the air-stream is not obstructed by the speech organs.

Tongue and lip movements result in varying shapes of the mouth, which can be described in terms of (i) closeness/openness, (ii) frontness/backness, and (iii) the shape of the lips. These are the four criteria for the description of vowel phonemes.



The Vowel Chart

The Long Vowels



- (i) The last sound in the word *tea*, represented by the symbol /i:/. The front of the tongue is raised so that it almost touches the palate, and the lips are slightly spread. A **close front vowel**.
- (ii) The second sound in *girl*, represented by /ɜ:/. This sound is always known as a hesitation sound. The centre of the tongue is raised between mid-close and mid-open position, and the lips are in a neutral shape. A **mid central vowel**.
- (iii) The third sound in *part*, represented by /ɑ:/. The part of the tongue between the centre and back is lowered to fully open position, and the lips are in a neutral shape. An **open central-back vowel**.
- (iv) The second sound in *horse*, represented by /o:/. The back of the tongue is raised between mid-close and mid-open position, and the lips are rounded. A **mid back vowel**.
- (v) The middle sound in *goose*, represented by /u:/. The back of the tongue is raised so that it almost touches the palate, and the lips are moderately rounded. A **close back vowel**.

The Short Vowels

- (i) The middle sound in *fish*, represented by /ɪ/. The part of the tongue between the front and the centre are raised to just above mid-close position, and the lips are slightly spread. A **mid-close front-central vowel**.
- (ii) The first sound in *egg*, represented by /e/. The front of the tongue is raised between mid-close and mid-open position, and the lips are slightly spread. A **mid front vowel**.
- (iii) The first sound in *apple*, represented by /æ/. The front of the tongue is raised between mid-open and fully open position, and the lips are slightly spread. A **mid open- open front vowel**.
- (iv) The second sound in *butter*, represented by /ʌ/. The centre of the tongue is raised between mid-open and fully open position, and the shape of the lips is neutral. A **mid-open-open central vowel**.
- (v) The first sound in *olive*, represented by /ɒ/. The back of the tongue is lowered to almost fully open position, and the lips are slightly rounded. An **open back vowel**.
- (vi) The second sound in *pudding*, represented by /ʊ/. The part of the tongue between the centre and the back is raised to just above mid-close position, and the lips are rounded. A **mid-close central-back vowel**.
- (vii) The third sound in *spaghetti*, the first sound in *ago*, or the last sound in *mother*, represented by /ɪ/. The centre of the tongue is raised between mid-close and mid-open position, and the lips are in a neutral shape. A **mid central vowel**.



1.1 Closeness/Openness, or Tongue Height

Closeness/openness, or **tongue height** in American terminology, refers to the distance between the tongue and the palate (and at the same time to the position of the lower jaw). If the tongue is high, as in the last sound of the word *bee*, it is close to the palate, and we therefore speak of a **close vowel**. If the tongue is low, as in the third sound of the word *starling*, the gap between it and the palate is more open, and we speak of an **open vowel**. Between these extremes, there are three intermediate levels: If the tongue is in a mid-high position, i.e. a bit lower than high, the resultant sound is a **mid-close vowel**, or **half-close vowel**. If it is mid-low, i.e. a bit higher than low, we hear a **mid-open vowel**, or **half-open vowel**. A vowel that is made with a tongue height somewhere between mid-high and mid-low is simply called a **mid vowel**.

1.2 Frontness/Backness

Frontness/backness refers to the part of the tongue that is raised highest. If it is the front of the tongue (in which case the body of the tongue is pushed forward), as in the last sound in *bee*, we speak of a **front vowel**. If the back of the tongue is raised highest (in which case the body of the tongue is pulled back), as in the middle sound in *goose*, the resultant sound is a **back vowel**. Between these extremes, we recognise one intermediate position: If the centre of the tongue is raised highest, as in the second sound of the word *bird*, we speak of a **central vowel**.

1.3 The Shape of the Lips

The shape of the lips can be either spread, neutral, or round. English does not utilise this contrast very much. As in most other languages, the spreading of the lips usually correlates with frontness, and lip-rounding with backness. This means that there are no two vowel phonemes in English that differ only in the shape of the lips. Many linguists therefore do not regard this criterion as relevant in English. The effect that the shape of the lips has on the vowel quality can be heard when we compare the second sound in *hurt* (which is the same as the one in *bird* above) with the second sound of the German word *hört*: Both sounds are mid central vowels, i.e. they are identical with respect to closeness/openness and frontness/backness. The only difference between them is that the English vowel is produced with the lips in a neutral shape, and the German vowel with rounded lips.

1.4 Length of Articulation

English vowels said to be either short or long. This means that some vowels do take short time to be articulated while others take long time to be produced. There are seven short vowels and five long vowels. The long vowels are identified with the length mark (:) while the short vowels have nothing in front of them. /i:, a:, ɔ:, u: and ʒ:/ are long vowels while /i, e, æ, ɒ, u, ʌ, ə/

This last vowel, *hi*, is called **schwa**. It stands out from all other vowels, and requires some further comment. The term *schwa* comes originally from Hebrew, where it means 'emptiness' and designates a Hebrew vowel of the same quality.



You may have noticed that the schwa is articulated in practically the same manner as the long vowel *h:l*, and therefore the quality of the two sounds is also virtually the same. This is the only exception to the general observation that a difference in length is accompanied by a difference in sound quality. (We should note, however, that there is considerable variation in the way speakers produce the schwa. For example, it is usually more open in word-final position.) But even if the quality of the schwa and *h:l* is more or less identical, the function of these two sounds is quite different: Whereas *h:l* occurs only in stressed syllables, the schwa occurs solely in unstressed syllables.

Post-Test

1. Identify English pure vowels
2. Describe English vowels based on:
 - (a) The level of the tongue
 - (b) The length of articulation
 - (c) The position of the soft palate
 - (d) The shape of the tongue

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LECTURE FOUR: Description of English Consonants

1.0 Introduction

This topic introduces us to the description of English consonants. English consonants are classified into three parameters namely, the place of articulation, manner of articulation and the state of the glottis.

Objectives

At the end of the lecture, students should be able to:

- i. Identify all English consonants
- ii. Equate the English consonant symbols with words
- iii. Describe English consonants based on the place of articulation, manner of articulation and the state of glottis

Pre-Test

1. Identify English consonants
2. Identify words that are equivalent to the English consonant symbols

CONTENT

CONSONANTS

Consonants are sounds produced with one obstruction or another in the vocal tracts.

The major parameters used to measure the sounds are:

- i. Place of articulation
- ii. Manner of articulation
- iii. State of the Glottis

1.1

PLACE OF ARTICULATION

In consonantal places of articulation, two points of reference are involved. One is part of the vocal trace that moves (the active articulator) and two, the part which makes contact (the passive articulator). Below are the possible consonantal places of articulation.

- (a) **Bilabial:** Both lips come together in the articulation, eg /p/, /b/, and /m/
- (b) **Labio-dental:** The lower lip and the upper teeth are involved in the articulation of these sounds. e.g /f/, /v/
- (c) **Dental:** the tongue-tip (blade) and rims articulate with the upper teeth e.g /θ/ and /ð/
- (d) **Alveolar:** the blade or the tip of the tongue articulates with the alveolar ridge, e.g /t/. the front of the tongue rises, the tip touches the upper alveolar ridge and the passes to produce the sound /l/
- (e) **Retroflex:** The tip of the tongue curls back to articulate with the are between the back of the teeth ridge and the front of the hard palate e.g /t/, /d/
- (f) **Palato-aveolar:** The blade or the tip of the tongue articulates with the rear of the alveolar ridge, simultaneously. The front of the raises towards the hard plate. e.g /ʃ/, /dʒ/



- (g) **Palatal:** The front of the tongue articulates with hard palate, e.g /j/
- (h) **Velar:** The back of the tongue articulates with the velum, e.g /h/, /k/
- (i) **Uvular:** The back of the tongue articulates with the Uvula, e.g /r/ as in French rue
- (j) **Pharyngeal:** The front part of the pharynx (the region of epiglottis) articulates with the back wall as in (h) found in Arabic language.
- (k) **Glottal:** The vocal cords come together to cause a closure or friction e.g /h/

1.2 Manner of Articulation

- (i) **Bilabial Plosives:** /p/ and /b/ the tip (upper and lower) are closed firmly and the soft palate is raised.

/p/ is a weak plosive

/b/ is a strong plosive

- (ii) **Alveolar Plosive:** In the pronunciation of the alveolar plosive, the blade of the tongue is pressed against the teeth, alveolar ridge and the sounds produce plosive sound.

The air presses up and the sound can be used to produce past tense and past participle such as: /dropt/

- (iii) **Velar Plosive:** /k/ and /g/ are velar plosives. In the production of these sounds, the back of the tongue is in front contact with the soft palate. The soft palate is raised so that the breath is trapped for a short time. When the tongue is lowered, suddenly from the soft palate the breath rushes out from the mouth with a slight exposure of popping sound. This may be spelt into different sounds.

Cat /kæt/

Kite /kait/

Back /bɑ:k/

Antic /antik/

Peter Roach calls voiceless sounds *fortis*, and calls voiced sounds *lenis*. They can be at the beginning of a word, and can also be salient in a word. For instance,

/k/ beginning of a word

Corn, cup, cupboard

/g/ salient in words

Reign, gnash, diaphragm, gene, sign and so on

- (iv) **Fricatives:** /f/, /v/, /s/, /ʃ/, /θ/, /ð/, /z/, /ʒ/, and /h/ are fricative sounds. In the production of fricative sound, the active articulators come closely together, to the extent that air forces itself out through the narrow passage between the articulators and this results to a friction.



- (v) **Labio-dental Fricative:** In the producing labio-dental fricatives /f/ and /v/, the soft palate is raised so that air goes through the nose and it is forced out through the mouth *lower lip* and *upper teeth*, the tongue is not concerned in making the sound /f/-voiceless /v/-voiced

/f/	/v/
Feel	van
Fit	Vail
Film	view

- (vi) **Dental Fricative:** /θ/ and /ð/ are dental fricatives. The tip of the tongue is placed between the upper teeth so that air can escape with ease. For instance,

/θ/	/ð/
Through	Father
Thought	Brother
Faith	Mother

- (vii) **Alveolar Fricative:** /s/ and /z/ are alveolar fricative. In the production of alveolar fricative, the blade of the tongue is raised towards the Alveolar ridge so that it leaves only a very narrow space for the air to pass through at the same time. The tongue is somehow contracted sideways so that a channel is formed in the middle of the tongue and it is through this channel that the air passes and the vocal cords vibrates for /z/ and not for /s/

/z/	/s/
Zeal	seal
Zip	sip
Zone	sown
Zinc	sink

- (viii) **PalatoAveolar Fricative:** /ʃ/ and /ʒ/ the blade of the tongue or the tip tongue raised towards the alveolar ridge and the hard palate.

/ʒ/	/ʃ/
Pleasure	Shop
Enclosure	ship
Exposure	Shut

- (ix) **Glottal Fricative:** /h/ is a glottal fricative. In producing /h/ the glottis is opened and there is no obstruction in the passage in the passage. The passage through the nose is closed and the sound passes through the open glottis.

/h/- house, honor, who, he, whose, and so on.



- (x) **Nasal Sounds:** /m/ /n/ and /ŋ/. A nasal sound is the one pronounced when the soft palate is lowered so that air can escape through the nose. English has three nasal sounds namely /m/ /n/ /ŋ/. They are all consonants formed in the basis as three pairs of plosives.
- (xi) **/m/- Bilabial nasal:** In the production of /m/ two lips are completely closed and causes stoppage of airstream in the production of Bilabial nasal, the soft palate is lowered thereby allowing air pass through the nose, there is also the vibration of the vocal cords. Examples of words that contains /m/ are mango, man, main, mat, map and so on.
- (xii) **Alveolar Nasals:/n/**In the production of this sound, the tip of the tongue presses against the alveolar ridge /n/ and form a complete storage of the airstream. The soft palate is also lowered here to allow air escape through the nose. The vocal cord also vibrates. Examples of words that contain alveolar nasal
/n/- need, next, gnash, net, name and so on.
- (xiii) **Velar nasal /ŋ/:** In the production of the velar nasal /ŋ/ the back of the tongue is raised and forms a complete stoppage by pressing against the soft palate at the same time, the soft palate is lowered, and allows air to escape through the nose, the vocal cord also vibrates. For example, king, young bring, jungle, and so on.
- (xiv) **Alveolar Lateral /l/-** To produce alveolar lateral, the tip of the tongue is pressed against the alveolar ridge. The obstruction occurs at the center of the mouth, and this cause air to escape through sides of the mouth. Alveolar lateral can be used in different forms
Elision/ salient lateral /l/: talk, psalm, palm, half, balm
Clear lateral /l/: clear, leg, lock, mill, milk, language
Dark lateral /l/: meddle, England, riddle, apple
- (xv) **Gliding Consonants:** /j/, /r/, /w/ place they are found in words determine if they be pronounced either as vowel or consonant. Phonologically they are called rapid vowels. It is the position that determines the complimentary distribution of sounds.
Once they are pronounced at the beginning of a word they mostly act as consonants

Post Test

1. Explain in details what you understand by place of articulation



2. Write notes on the following:
- (a) Alveolar plosive
 - (b) Velar nasals
 - (c) Gliding consonants
 - (d) Alveolar lateral
 - (e) Glottal fricatives

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LECTURE FIVE: English Syllables

1.0 Introduction

This lesson focuses on English syllables and its structures. The syllable is the minimum domain of the suprasegmental features. The suprasegmental features of the English language are stress, intonation and rhythm .

Objectives

At the end of this lesson, students should be able to:

- i. Identify English syllables
- ii. Give examples of syllable structures
- iii. Differentiate simple structures from complex structures.

Pre-Test

- i. What is English structure
- ii. Give examples of three English structures

CONTENT

The syllables have been discussed phonetically and phonologically by linguists scholars such as Roach and Hymn. The syllable may be described phonetically in terms of how they are produced and how they sound. Syllables are usually described as constituting a centre which has little or no obstruction to airflow and which sounds comparatively loud. This centre is usually a vowel or liquid. However, before and after this centre are sounds that are produced with greater obstruction to airflow, which are not as loud as the sound at the centre. These margins are consonants. Now let us take the example we used earlier to make this portion clearer. /mæn/ has three sound segments which are /m/, / æ / and /n/. At the centre is / æ / which is loud, sonorous and the peak of the syllable, being the vowel. At the margins are the consonants /m/ and /n/, produced with greater obstruction to the airflow and not as loud as /æ/. The phonological perspective is based on the phonotactic constraints of a given language. Every language has particular ways in which sounds are arranged. The possible structures of sounds in a language can help in determining what the margin note is. In other words the phonological explanation of syllable depends on what constitutes a syllable in such a language.

A syllable, according to an online dictionary, is an uninterrupted segment of speech that consists of a vowel sound, a diphthong or a syllabic consonant with or without preceding or following. A syllable is a group of one, two, three or more sounds

It is also considered as a combination or set of one or more units of sound in a language that must consist of a sonorous element (a sonorant or bowel) and may or may not contain less sonorous elements (consonants o r semivowels) flanking it on either or but sides.



Yule (2002) observes that a syllable contains a vowel or vowel-like sound. It also has a consonant before the vowel and it is technically represented as CV.

Types of syllable

We have:

- (i) The monosyllabic words
- (ii) The disyllabic or bisyllabic words
- (iii) The trisyllabic words
- (iv) The polysyllabic words

The monosyllabic words are words that have just one syllable; examples are , come, go , sit, talk, me, dog, rise, league, food, caught, fan, etc.

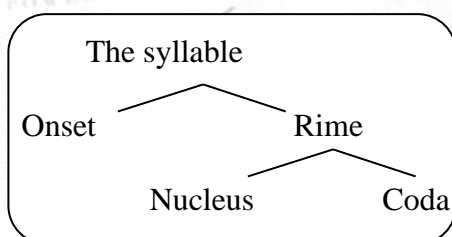
The disyllabic or bisyllabic words are those that contain two syllables such as woman, teacher, madam, picture, giver, input, talker, wanted, progress, canteen, police, until, etc.

Trisyllabic words are words that contain three syllable, examples. Yesterday, relation, important, quantity, quality, calendar, momentum,

Polysyllabic words are words that contain many syllables; examples, examination, congratulations, inconvertibility,

Basic Element of a Syllable

The syllable has two basic elements namely the onset and the rime. The rime is further divided into the nucleus and the coda .



The Onset

The onset is the beginning of the syllable. Examples:

The Rime

This is the primary element of the syllable; without it there is no syllable. It is subdivided into the nucleus and the coda

The Nucleus : This is usually the vowel, often found at the centre of every word. It should be noted that it can start and even end a word.

The Coda

This is the terminator or the end of the syllable.



English syllabic Structure: When we speak, we produce units of speech sounds in bits. These bits are chains of vowels and consonants combined to realize a larger unit known as the syllable. Individual syllables are further used to realize words that we use to communicate on day-to-day interactions and transactions.

Examples of syllabic structure are as follows:

	STRUCTURE S	WORDS
1.	V	i, awe, are, etc.
2.	VC	at, in , of, it, on, oil, etc.
3.	CV	to, tie, coy, ray, ewe, tea, etc .
4.	CVC	tap, phone, game, sit, carve, dam, cake, etc.
5.	VCC	ant, ups, it, inns, etc.
6.	CCV	fray, tray, cry, pray, etc.
7.	VCCC	ants, apples,
8.	CVCC	taps, tins, caves, mats, rooms, lips, rams, etc.
9.	CCVCC	plant, startle, triumph, trails, shrink
10.	CCVC	spout, prone, drip, break, crab, scan, tribe, etc.
11.	VCCCC	ambled, ankles,
12.	CCCV	spray, spree, skew,
13.	CVCCC	temple, tangle, maples, rumble , sixth ,
14.	CCVCCC	stifled, startled, twelfth
15.	CCCVCC	struggle , strokes, squelch, squiggle, stewards, etc.
16.	CCVCV	strafe, strip, splash, sprain, scrub, squid, stretch, etc.
17.	CCCVCCC	struggled ,
18.	CVCCCC	candles, bundles, gambled, rambled, etc
19.	CCVCCCC	crumbled, trampled, twinkled,
20.	CCCVCCCC	strangled, sprinkled, scrambled,

By the author

Post-Test

1. What is syllable?
2. Write notes on :
 - (a) The rime
 - (b) The nucleus
3. Explain the English syllabic structure

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LECTURE SIX: Stress

1.0 Introduction

This topic focuses on stress, the degree of loudness or prominence that one syllable has over the other. Stress, as a topic is actually stressful as one needs to pay rapt attention and afterward studies seriously in order to understand which syllable is stressed and which one is not stressed.

Objectives

By the end of this lesson, the students should be able to :

1. Define stress
2. Explain monosyllabic, disyllabic, trisyllabic and polysyllabic words
3. Identify stressed and unstressed syllables in words
4. Explain where words can be stressed in sentences

Pre-Test

- i. What is stress?
- ii. Give examples of monosyllabic and disyllabic words

CONTENT

Stress deals with pitch prominence, exertion of more muscular energy, greater degree of articulation, loudness and often, length on a particular syllable of an English word. A stressed syllable of an English word will 'stand out' among the other syllables. A monosyllabic word (a word of one syllable) often takes the stress on the only syllable it is made of. 'Man'/'mæn/ is an example of a monosyllabic word where the only syllable available, /mæn/, is assigned the stress. A disyllabic word is made of two syllables while a polysyllabic word is made of many syllables. 'Pencil' is an example of a disyllabic word while 'eradication' / erædikeiʃn/ where /-kei-/ takes the primary stress, is an example of a polysyllabic word. The prominence associated with stress may be achieved in various ways.

Some linguists associate this prominence with greater muscular energy and loudness. Other linguists have looked at this prominence as being achieved mainly by pitch. This is often called pitch prominence. It is believed that a stressed syllable must have a different pitch level from all the unstressed syllables in its environment. It is this pitch prominence that will make it stand out from the other unstressed syllables in the word.

1.1 : Phonetic cues

The characteristic activities that accompany stressed syllables are called phonetic cues. These are pitch prominence, duration, intensity (loudness) and segmental quality. Duration means the length of a stressed syllable. Intensity means loudness. And segmental quality deals with what happens to the segments of an unstressed syllable which most of the time is affected by reduction, elision or change of a different sound.



1.2: Characteristics of stress

- (i) Stress is culminative (English words have stress assigned to one of its syllables)
- (ii) It is hierarchical (primary stress has highest pitch prominence, secondary stress is next, etc.)
- (iii) It is rhythmic (stressed and unstressed syllables alternate and result in rhythmic movements).

1.3 Free and fixed stress

The location of stress is predictable in a fixed stress system and unpredictable in a free stress system. Languages (such as Turkish, Polish, Hungarian, etc) that assign stress placement of one particular syllable within every word are said to have fixed or non-phonemic stress while languages that do not restrict stress placements to one particular syllable are said to have free stress.

Post-Test

- i. Explain types of stress
- ii. Differentiate stressed and unstressed words in sentences
- iii. Write notes on:
 - (a) Trisyllabic stress
 - (b) Polysyllabic stress

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LECTURE 7: Secondary Articulatory Process

1.0 Introduction

This lecture focuses on secondary articulatory processes.

Objectives

At the end of the lecture, students should be able to:

- i. Identify nasalization
- ii. Explain labialisation
- iii. palatalisation

Pre-Test

1. What is a secondary articulatory process?
2. Explain aspiration

CONTENT

Secondary Articulatory Processes

Production of sounds involves certain types of modifiers besides the main articulation these are additional or secondary articulatory process

1.1 Labialization: This occurs when the articulation of a consonant is accomplished by lip rounding as in /w/. Labialization is repeated by a small /w/ written under the affected consonant as in *kwashiorkor*. In some situation, labialization and aspiration occur together.

1.2 Aspiration: This is the puff of air that accompanies the articulation of voice stops. It often occurs at the beginning or at the initial position of a strong stressed syllable. Aspiration is shown by slightly raised written at the affected sound as shown in the following words. Today, hope and so on.

1.3 Nasalization: This occurs when a non-nasal consonant is produced with the lowering or withdraw. There are two types of nasalization namely /i/ weak
ii. Strong

Nasalization is weak when the soft palate is slightly withdrawn from the back of the pharynx and could be strong when the soft palate is fully withdrawn from the back of the pharynx. Nasalization of consonant takes place when such sounds occur in the environment of nasal sound such as /n/ /ŋ/

1.4 Palatalization: The tongue rises very high at the front position as primary articulation is made and at the same time [i] vowel resonance is added to the consonant. This is symbolized by a small raised [j]. Salvonis languages have palatalized consonants. For instance, Russian Palatalised [tʲ]

1.5 Velarisation: The tongue rises to a high back position as the primary articulation is made. At the same time [w] vowel resonance is added to the primary articulation. This is symbolized by [v] or by [~] as in pool which has a velarized [t].

1.6 Alteration: This means replacement of phonemes. For instance, in the following words, deliverance, pronounced, Christmas, last month, last born



1.7 The influence of Adjacent sounds

As a result of striving for economy of words, speakers tend to admit, assimilate and link one sound to the other. This is known as the influence of the adjacent sounds. Although, it is not common, its manifestations differ in various languages. Examples:

- i. Alteration
- ii. Elision
- iii. Linking /r/
- iv. Assimilation

Post Test

1. Explain the following with examples.
 - (a) Place of articulation
 - (b) Manner of articulation
 - (c) State of the glottis
2. Write notes on the following:
 - (a) Nasalisation
 - (b) Palatalisation
 - (c) Labialisation
 - (d) Aspiration
 - (e) Elision
 - (f) Alteration
3. What is secondary articulation?



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LECTURE 8: Intonation

1.0 Introduction

This topic focuses on intonation, its functions and uses.

Objectives

At the end of the lecture, students should be able to:

- i. Explain the meaning of intonation
- ii. Identify types of intonation
- iii. Make sentences with different tones

Pre-Test

1. What is intonation
2. Give examples of intonations in sentences

CONTENT

Intonation is often an area of difficulty for second language users of English who have tonal languages as their first language. It is good to know the difference between intonation and tone. For Nigerian students, this is important because most Nigerian languages are tonal, not intonational like English. Intonation is used in all languages (whether tonal or intonational but the uses differ). In the case of tonal languages, it is applied to contrast the meaning of individual words (e.g. Yoruba, Igba (calabash) Igba (time)). In the case of an intonational language as English, intonation is not a property of the word. It operates at a level above the word, the tone group. Intonation affects grammatical units such as phrases, clauses and sentences. Do not forget, however, that there are instances where a single word could be functioning as a complete Yes as a response to the question: Are you travelling tomorrow? Is a complete thought? It is therefore considered as intonation group.

Intonation patterns carry different information about sentences, depending on whether the utterance is a question or a statement, whether or not there is an important word to be emphasized in the utterance, and the attitude of the speaker towards what is being said or the hearer e.g. “No” with a falling tune is emphatic while “NO” in a doubtful tone is questionable.,

1.1 Tone Group (TG)

This is the minimum domain of intonation as opposed to tone which has the lexical word as its domain. It may be a single word utterance, a phrase, a clause or a sentence.

A tone group has four components

1.2 Components of a TG

- (i) Pre-head (optional)
- (ii) Head (obligatory)
- (iii) Tonic syllable
- (iv) Tail (optional)



The pre-head stand for all the unstressed syllables that come before the first stressed syllable of a tone group. The head is everything after the pre-head up to the last stressed syllables. The tonic syllable or nucleus is the last stressed syllable in the group . The tail is every unstressed syllable after the nucleus.

1.3 Types of Intonation

There are basically two intonational tunes used in the English language. These are the rise tune and the fall tune. There are however variations of each type to suit the purpose for which they are being used e.g. fall, high fall, how-fall, high rise, low rise, rise-fall, fall rise, etc.

The appropriateness of an intonation pattern for any sentence will depend on:

- (i) the accentual meaning;
- (ii) the grammatical type of sentence;
- (iii) the attitude of the speaker; and
- (iv) the general and (more specifically) the intonational context

(Gimson, 1975).

1.4 Functions of Tones

Fall Tune

The falling tone performs the following functions:

Simple statements

This is the lady I told you.

The Lord is good.

Simple commands

A command is an order that must be obeyed. This is usually uttered by a superior to someone under his control.

Shut the door

Get out now.

Write your notes.

Wh-questions

Wh-questions are questions that start with words such as *what, who, whom, why, where, how* etc. For this type of question, the tune should fall on the last stressed syllable.

Where do you live?

What is the name of your English teacher?

Exclamation

An exclamation is something you say suddenly and loudly because you are surprised, excited or angry.

Ehe!

fantastic

1.5 Rise Tune

This functions in :

- (i) Polar questions (Yes/No questions)
- (ii) Polite request
- (iii) Changing statements to questions (e.g. (statement_ you are a lecturer. Question: You are a lecturer?)

Post-Test

1. Write notes (with examples) on:
 - (i) Pre-head
 - (ii) tail
2. What are the components of a tonic group
3. Differentiate the falling tone from the rising tone



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LECTURE 9: English Rhythms

1.0 Introduction

This topic deals with rhythm, the regular repetitions of sounds or movement in English language.

Objectives

At the end of the lecture, students should be able to:

- i. Explain the meaning of rhythm
- ii. Use it in sentences

Pre-Test

- i. What is rhythm
- ii. Construct a rhythmic sentence

CONTENT

Rhythm is a regular repeated pattern of sounds or movements. The languages of the world have different kinds of rhythm determined by features such as stress and tone. Here, we are concerned with English language.

1.1 Rhythm Defined

Rhythm has a regular pattern that is usually determined by stress or tone, depending on the characteristics of the language involved. The recurrent patterned movement is often referred to in the literatures as timing. The idea is that the timing of the regular movements is determined by stress for some languages and tone for others. There are stress-timed languages and syllable-timed languages.

1.2 Rhythm Unit (Group)

Rhythm unit is the stress of utterance from one stressed syllable to the last unstressed syllable before the next stress syllable.

1.3 Trait of Rhythm

The rhythm effect has a lot to do with stressing and unstressing. This is because all stressed syllables contain full vowels. Majority of the unstressed syllables contain reduced (weak) vowels. Though some full vowels occur in unstressed syllables, they are not so many. A major characteristic of the spoken English language is to have strong full vowels in stressed syllables and weak reduced vowels in unstressed syllables.

We should also note that when we speak English, some syllables are longer and louder than others. These are the strong syllables. The ones that are not as long and loud are weak syllables. English combines the strong and weak syllables to have a particular melody. This is called its rhythm. Weak syllables often contain the sound / ə / or / I. / ə / is the weakest sound in English. It is a sound that is not in many Nigerian languages.

Post-Test

1. Explain rhythm



2. Write notes on syllable-timing rhythm
3. Explain stress-timing rhythm

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LECTURE 10: Allophonic Variation

Introduction

This lesson focuses allophones, i.e. the variant of the same phoneme.

Objectives

At the end of the lecture, students should be able to:

- i. Identify phonemes
- ii. Explain allophone
- iii. Discuss phone, phoneme and grapheme

Pre-Test

1. What is allophone?
2. Give examples of allophones.

CONTENT

The prefix *alio-* [is derived from Greek “all- and it means 'be different from'"]. It is generally used in linguistics to refer to two or more concrete, particular forms of an abstract linguistic unit, which is denoted by the suffix *-erne*. The concrete, particular forms show noticeable variation among themselves - they are different from each other - but they do not affect the underlying linguistic unit's function.

1.1: Allophone and Phoneme

In phonetics and phonology, phoneme is defined as the smallest distinctive or contrastive, unit in the sound system of a language. i.e. a unit that contrasts meaningfully with other speech sounds. In the same lesson, we learnt that a concrete form, or realisation, of a phoneme is called a **phone**. When two or more concrete forms, or realisations, of a phoneme are compared, each of these forms is referred to as an **allophone**, rather than a phone. An allophone can therefore be defined as one realisation of a phoneme among others.

1.2: Allophones in free variation

If two or more allophones can replace one another, i.e. if they can occur in the same position, these allophones are said to be free variants or in free variation.

1.4 Allophones in Complementary Distribution

If two or more allophones cannot replace one another, i.e. if they do not occur in the same position, because their occurrence is determined by the surrounding sounds, these allophones are said to be contextual variants or in complementary distribution. In other words, complementary distribution is a systematic relationship between two or more allophones, whereby one allophone can only occur in a phonetic environment in which none of the others can: They are mutually exclusive.



If allophones in complementary distribution did replace one another for some reason (most likely because of a slip of the tongue), the resultant pronunciation would merely sound odd, or the articulation would feel awkward, but this would not cause a change of meaning. Both free variation and complementary distribution are thus relationships of **non-contrastive distribution**. (The only relationship of **contrastive distribution** in phonetics and phonology is the one between phonemes.)

Post-Test

1. What is allophone?
2. Discuss allophones of free variation
3. Explain allophones in complementary distribution

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LECTURE 11: Introduction to Phonological Analysis and distinctive features

1.0 Introduction

This topic introduces students to phonological analysis which comprises list of the phonemes of English, phonotactics classification system for categorizing phonemes, sequential occurrence of phonemes within a language and a list of allophonic variations for each phoneme.

Objectives

At the end of the lecture, students should be able to:

- i. Explain phonological analysis
- ii. Discuss the categories of phonemes
- iii. Explain distinctive features
- iv. Identify distinctive feature

Pre-Test

- i. What is phonological analysis
- ii. Explain phonotactics

CONTENT

Any analysis on phonology is termed phonological analysis. Here, our focus will be based on phonotactics, distinctive features and classification of sound system.

For example, in phonological analysis, to determine the phonemes and allophones in a language other than English, you should answer the following questions while you examine data: – 1. Are there any minimal pairs in the data in which these sounds contrast? – 2. Are any noncontrastive sounds in complementary distribution? – 3. If noncontrasting phones are found, what are the underlying phonemes and their allophones? – 4. What are the phonological rules by which the allophones can be derived?

1.1 Distinctive Features

- Features are binary (+ or - values)
- Each speech sound may be described as a “bundle” of features
- Each member of every pair of phones is distinguished from the other member by at least one feature value
- Features are universal, but a given language may use a subset of features as distinctive

1.3 Features

(* = Original Jakobson, Fant & Halle features)

- *Vocalic/Nonvocalic
- *Consonantal/Nonconsonantal
- Sonorant/Obstruent
- Rhotic/Nonrhotic (vowels)
- Advanced/Nonadvanced (vowels and diphthongs)
- Front/Nonfront (vowels)
- Coronal/Noncoronal [= *Acute/Grave]



- Anterior/Nonanterior [= *Compact/Diffuse] (consonants)
- High/Nonhigh
- Low/Nonlow
- Back/Nonback
- *Rounded/Nonrounded (*Flat/Plain)
- Distributed/Nondistributed
- *Nasal/nonnasal
- Lateral/Nonlateral
- *Continuant/Stop
- *Tense/lax (vowels)
- *Voiced/voiceless
- *Strident/Nonstrident (consonants)

1.4 Alternative Classification Systems

For Describing and Categorizing Phonemes

- Classical phonetic features of place and manner, and voicing

For examples : some phonemes are specified using articulatory descriptors as follows:

- /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
- /s/ voiceless alveolar fricative
- /z/ voiced alveolar fricative
- /h/ voiceless glottal fricative
- l/ voiced alveolar lateral
- r/ voiced alveolar liquid
- /w/ voiced labio-velar semivowel
- /j/ voiced palatal semivowel
- /n/ voiced alveolar nasal
- /m/voiced bilabial nasal



1.5• Distinctive Features for /p/ is shown as follows:

/p / described as a bundle of features

- [-Vocalic]
- [+Consonantal]
- [-Sonorant]
- [-Coronal]
- [+Anterior]
- [-High]
- [- Low]
- [- Back]
- [- Rounded]
- [- Distributed]
- [- Nasal]
- [- Lateral]
- [- Continuant]



- [+Tense]
- [-Voiced]
- [-Strident]

1.5 Functions of Distinctive Features

Distinctive features are used to:

- specify a phoneme
- specify a class of phonemes
- describe the set of speech sounds used in a particular language or dialect
- write concise rules of phonetic change
- characterize a speech disorder– e.g. substitution, often involving a change of feature)

1.6 Distinctive Feature Theory

Roman Jakobson

- Prague School of Linguistics (Pre-WWII)
- Massachusetts Institute of Technology (MIT) and Harvard University

• **Gunnar Fant**

- KTH - Royal Technical Institute, Stockholm, Sweden

• **Morris Halle**

- Massachusetts Institute of Technology

1.7 Redundancy Rules

- All vowels in English are [+Voiced]
- All [-Voiced] sounds are [+Consonantal], [-Nasal], [-Sonorant] and [-Vocalic]
- [+Anterior] sounds are [-Distributed]
- Sounds that are both [-Continuant] and [+Anterior] are [-Strident]
- [-Coronal] sounds are [-Lateral]

With Redundancy eliminated

/b/ = [+Voiced]
[-Continuant]
[+Anterior]
[-Coronal]

Features Used to Define a Class

- Class of “Stop Consonants”
- /p, b, t, d, k, g/: [+Consonantal]
[-Vocalic]
[-Continuant]
[-Nasal]
[-Distributed]

Post-Test

- Explain phonological Analysis
- What is distinctive feature?
- Give examples of distinctive features using five phonemes
- Explain one distinctive feature Theory



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Distinctive Features online



LECTURE 12: REVISION

1.0 Introduction

The students are reminded of phonetics and phonology, the airstream mechanism, English pure vowels, diphthongs, triphthongs, English consonants, English syllables, stress and stress patterns, secondary articulatory processes of labialization, nasalization, dentalisation, intonation, rhythm, allophonic variation and phonological analysis.

Objectives

At the end of the lecture, students should be able to:

1. Recollect what they have been taught in the previous lessons 1-11
2. Ask questions where they do not understand and answer questions asked by the lecturer-in-charge
3. Prepare adequately for the forth-coming examination

Pre-Test

1. What is phonetics
2. Explain phonology
3. Discuss airstream mechanism
4. What are secondary articulatory processes

CONTENT

Post-Test

1. Differentiate phonetics from phonology
2. Explain

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ADDENDUM

Voiced and Voiceless vowels : The State of the Glottis

Every sound that is produced by an egressive pulmonic air-stream mechanism and passes through the glottis, i.e. the space between the vocal folds, located behind the Adam's apple in the voice box, or larynx is said to be voiced or voiceless. If the glottis is narrow, i.e. if the vocal folds are together, the air-stream forces its way through and causes the vocal folds to vibrate. Sounds produced in this way are called voiced. You can check whether a sound is voiced either by placing a finger on either side of the larynx or by closing your ears with your fingers while you speak. When you say the word *zeal*, for example, you should be able to sense the vibration of the vocal folds for the entire time that you take to pronounce the word because all three sounds are voiced.

If the glottis is open, i.e. if the vocal folds are apart, the air passes through without causing the vocal folds to vibrate. Sounds produced in this way are called voiceless. When you use the two tests to check which sounds in the word *seal* are voiced and which are voiceless, you will find that you do not sense any vibration of the vocal folds on the first sound, and that the vibration sets in on the second sound. This means that the first sound in *seal* is voiceless, and the other two are voiced. When we whisper, we are making all speech sounds voiceless, even the sounds in *zeal* and the final two in *seal*.

A third position is that the glottis is closed, i.e. the vocal folds are firmly pressed together, and the air-stream is stopped completely. Such a glottal closure can produce only one sound, which is called a glottal stop or glottal plosive

Intensity of Articulation: Lenis and Fortis

The voiced/voiceless contrast discussed above is usually accompanied by a difference in the force with which the air-stream is pushed up. Voiced sounds are usually made with a relatively weak breath force, or little muscular tension. This is called a **lenis** (Latin, “soft”) articulation. Voiceless sounds, on the other hand, are made with more force, or higher tension. This is called a **fortis** (Latin, “hard”) articulation.

The symmetrical relationship between voiced/voiceless and lenis/fortis does not always hold. Whereas fortis sounds are indeed always voiceless in English, lenis sounds, which are usually voiced, may also occur as voiceless variants, i.e. they can be devoiced.

We said that apparently the only difference between these two words is the voiced/voiceless contrast of their initial sounds, and that we are making all speech sounds voiceless when we whisper. Why, then, do we still perceive a difference between *zeal* and *seal* even when the words are whispered? The answer is that the voiced/voiceless contrast is *not* the only difference between the two words, or their initial sounds. There is another difference, namely the intensity with which the initial sounds are articulated: Although the initial sound in *zeal* is made voiceless when whispered, it retains its lenis articulation. In other words, the first sound in *zeal* is always articulated with a weaker breath force than the first sound in *seal*, no matter whether the words are whispered or not.

Some lenis sounds can also be devoiced in certain environments. For example, they are partly devoiced in word-initial position and almost entirely devoiced word-finally, as in the words *cab* and *serve*. The final sounds, here, are devoiced, but we still perceive them as the same (voiced) sounds because of their lenis articulation. We still hear the words *cab* and *serve*. If, however, we increase the breath force, or muscular tension, when producing the final sounds, i.e. if we pronounce these sounds with a fortis articulation, we hear the words *cap* and *surf*. All this suggests that it is not really the voiced/voiceless contrast, but the lenis/fortis contrast that can distinguish meaning and must therefore be considered a distinctive feature.



Place of Articulation

We already know that almost all English sounds are made with air that is pushed up from the lungs. In the production of approximately two thirds of these sounds, the air-stream is obstructed in the throat, technically called the pharyngeal cavity or pharynx, or in the vocal tract before it leaves the body through the mouth or nose. These sounds are called consonants. An important feature for the description of consonants is the exact place where the air-stream is obstructed. The place of articulation names the speech organs that are primarily involved in the production of a particular sound.

To produce a consonant, there is usually one active, mobile, lower speech organ that moves and makes contact with a passive, immobile, upper speech organ. For example, in the articulation of the last sound in the word *surf*, the air-stream is obstructed by the contact of the lower lip with the upper teeth. This sound is therefore called a "labiodental consonant", or simply a "labiodental" [from Latin *labialis*, 'of the lips', and *dentalis*, 'of the teeth'].

Manner of Articulation

Another important feature for the description of speech sounds is the type or degree of closure of the speech organs involved. Thus the manner of articulation refers mainly to the degree to which the air-stream is obstructed at the place of articulation of consonants. When pronouncing the last sound in *surf*, for example, the gap between the lower lip and the upper teeth is narrowed to the point where friction is caused as the air passes through. The resultant consonant is therefore called a "fricative". If we wanted to describe this sound using all three distinctive features, we would say that it is a "fortis labiodental fricative". There is no other sound in the English sound system that fits this description.

Test

1. Explain voiced and voiceless sounds
2. Differentiate lenis from fortis
3. What is place of articulation?
4. Explain manner of articulation.

