**Batch No. 2**

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## E/LAL 112: Introduction to Linguistics.

# UNIT ONE

# WHAT IS LIGNUISTICS ?

## 1. DEFINING LINGUISTICS

Linguistics is the field of study subject of which is language (Hartmann and Stork 1972:132). It is the scientific study of human language in general and of particular human languages.

The study of human language in general is called General Linguistics: it is the study of basic concepts, methods and theories about languages. Linguistics is a science in the sense that, alien to speculations about language, it deals with data, i.e. observable facts, and theories about language which can be verified empirically.

## 2. LINGUISTICS AND PHONETICS

Phonetics is the study of speech sounds: their physical properties (acoustic phonetics); how they are produced by organs (articulatory or physiological, phonetics); how they are perceived by human ears (auditory phonetics); their description, classification and transcription.

Some consider that linguistics and phonetics are two different linguistic sciences, others consider that phonetics is part of linguistics and that the term linguistic science (without – s) should be equivalent to linguistics (which should include phonemics) see Crystal 1992:204). Also note that Hartmann and Stork (1972:132) use the term linguistic sciences (with – s) to refer to linguistics minus phonetics, phonemics, branches of linguistics (e.g. general linguistics, comparative linguistics), and levels of linguistic analysis (e.g. morphology (= study of the internal structure of words), syntax (= how sentences are structured).

In this course, phonetics is regarded as one of the branches of linguistics.

## 3. SOME SAUSSURIAN CONCEPTS

The Suiss Ferdinand de Saussure (1875 – 1913), who is regarded as the founder of modern linguistics, has made a number of useful distinctions including those presented below:

(a) **Diachrony / synchrony**

In the study of languages, one must distinguish between investigation concerning the historical development of a language (diachronic linguistics) and the description of languages as they are spoken at a given stage of their historical development (synchronic linguistics)

(b) **Langue / parole**

As used by Saussure, the French terms 'langue' and 'parole' correspond to Chomsky's terms 'competence' and 'performance' respectively. 'Langue' is the system of language which is passed from one generation to another (e.g. vocabulary, morphology, syntax) and 'parole' is the language as actually used by a speaker (see Hartmann and Stork, 1972 126). 'langue' and 'parole' are therefore two facets of language.

(c) **Paradigmatic / syntagmatic relation**

Terms or sequences of terms which might occupy the same position in a given sentence are said to be in paradigmatic relation, e.g. the terms and sequences of terms in brackets in the following sentence:

| | |
|---|---|
| The boy ate the | (orange) |
| | (apple) |
| | (cake) |
| | (meat) |
| | (big fish) |
| | (two rotten buns) |

Forms which actually occur in a given sentence are said to be in syntagmatic relation. Thus, the words in the sentence The boy ate the orange are in syntagmatic relation.

## 4. SOME BRANCHES OF LINGUISTICS

(a) **General linguistics**: the study of basic concepts, theories and methods in linguistics.

(b) **Synchronic linguistics**: while general linguistics is concerned with all languages, synchronic linguistics observes and analyzes particular languages at a particular stage of its historical development. The term "synchronic' is synonymous with 'descriptive'.

(c) **Diachronic linguistics**: the study of the historical development of particular languages from one stage to another. The expression is synonymous with historical linguistics.

(d) **Comparative linguistics**: a division of dichronic linguistics which compares several languages with a view to finding out whether they have one common ancestor and ultimately reconstructing such an ancestor, the comparison of a language with the ancestor language or the comparison of two or more sister languages with reference to the ancestor language.

(e) **Contrastive linguistics**

In contrastive linguistics, the linguist shows the similarities and differences between two or more languages or dialects with the aim of finding principles which can be applied to practical problems, e.g. in language teaching and translation, with special emphasis on transfer, interference and equivalents (Hartmann and Stork p.52)

(f) **Dialectology**: the study of dialects with the aim of showing how they differ and how they are geographically or/and socially distributed.

(g) **Dialinguistics**: the study of how different languages spoken in a community are related with a view to determining bilingualism and multilingualism among the speakers.

(h) **Prescriptive linguistics**: prescriptive linguistics (or normative linguistics) is Concerned with rules of correct usage. Thus, while descriptive linguistics studies languages as they are spoken, prescriptive linguistics describes how they should be used.

(i) **Sociolinguistics**: the study of the uses of languages in their social contexts. "It Makes use of research techniques and findings from linguistics and various social sciences" (Hartmann and Stock p. 211). It is concerned with all aspects of the relationship between language and society (Crystal 1992: 319)

(j) **Psycholinguistics:** this science is a hybrid from psychology and linguistics. Its basic assumption is that human language is behaviour. In other words, psycholinguistics is the study of human language behaviour. Psycholinguistics examines the relationship between language phenomena and psychic phenomena such as thought, memory, motivation, perception, various hypotheses on language acquisition, language learning, language competence and performance.

(k) **Pragmatics**: pragmatics views language as a purposeful human behaviour to show that language use is rule-governed. In short, it deals with communicative competence. It studies language use from the point of view of the users; the constraints they encounter in social interaction (Crystal 1992: 271)

## 5. LEVEL OF LINGUISTIC ANALYSIS

Human language is a system (i.e. an organised whole) which is divided into subsystems. Such subsystems are referred to as levels of linguistic analysis. The following are the basic levels of linguistic analysis,

(a) **Phonetics**: the scientific study of speech sounds, e.g. how speech sounds are produced (= articulatory phonetics or physiological phonetics), their physical properties (= acoustic phonetics, how they are perceived by human ears (= auditory phonetics)

(b) **Phonology:** the study of the speech sounds of particular languages, their functions in particular languages and how they combine in particular languages (= sound patterns).

(c) **Morphology**; the study of the structure, forms and classes of words (Hartmann, and Stork, 1972: 146)

(d) **Syntax**: the study of how words combine into phrases and sentences.

(e) **Semantics**: the system and study of meaning in language (Hartmann and Stork, 1972: 204)

Note that studies on each of these levels can be either diachronic (describing the historical development) or syhchronic describing the state of affairs at a particular stage in the history of a language). For example, phonetics can be either diachronic (or historical) phonetics or synchronic phonetics.

Note also that synchronic phonology can be called phonemics and synchronic morphology can be called morphemics. This can be schematized as follows:

**PHONOLOGY**

| Diachronic (or historical) phonology | synchronic phonology or, simply, phonemics (NB Not synchronic phonemics) |
|---|---|

phonemics = synchronic phonology

## MORPHOLOGY

| | |
|---|---|
| Diachronic (or historical) morphology | synchronic morphology or, simply, morphemics |
| | (NB Not synchronic morphemics) |
| | morphemics = synchronic morphology |

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## REVISION QUESTIONS

1. What is Linguistics ?
2. Do "language science' and linguistics' mean the same thing according to R. Bartch and T. Vennemann (eds) 1975: Linguistics and neighbouring disciplines)? EXPLAIN.
3. What is the meaning of 'linguistic sciences' in this course ?
4. Explain the following:
   (a) langue, parole
   (b) paradigmatic relation, syntagmatic relation
5. Are 'comparative linguistics' and 'contrastive linguistics' synonymous (i.e. do they mean the same thing)?
6. Explain the following:
   (a) synchronic linguistics
   (b) diachronic linguistics
   (c) sociolinguistics

(d) psycholinguistics

(e) pragmatics

7. Explain the following:

(a) levels of linguistic analysis

(b) phonetics, phonology, phonemics

(c) morphology, morphemics

(d) syntax

(e) semantics

# UNIT TWO

# LINGUISTICS AS A SCIENCE

## 1. Linguistics as a science

Linguistics is the scientific study of human natural language in general (general linguistics) and of particular human natural languages (English, Bemba, Luvale, Italian, Arabic, etc).

Linguistics is a science to the extent that it deals with language facts/states of affairs as a starting point or with theories on language which can be verified by factual evidence from existing human natural languages.

## 2. The Scientific Method

The term 'science' may be understood in two ways: in a broader sense and in a narrower sense. In the broader sense, science is any branch of knowledge in which facts and states of affairs are established and systematically and empirically explained. In this sense, linguistics, but not astrology is a science. In the narrower sense, the term 'science' denotes only those branches of knowledge in which explanations are provided in terms of 'laws', that is, rules without exception. Only the natural sciences are commonly considered to be sciences in this sense. As pointed out by Cohen and Nagel (1963: 91), the term 'science' has been restricted to the natural sciences because of their great prestige "acquired mainly by the aid to modern technology, and by their successful fight against the ancient mythology that was sanctified by various authorities".

## 3. Empiricism

It is widely accepted that the modern scientific method is essentially an empirical method. A method is called empirical if it uses inductive reasoning (Popper, 980: 24, 1972:33); Cohen and Nagel, 1963:273).

Empiricism as a theory of knowledge holds that all knowledge results from experience. As pointed out by Hospers (1967:102), "This view was defended and made famous by three British philosophers: John Locke (1632-1704), George Berkeley (1685-1753), and David Hume, (1711-1776)". They distinguished two types of experiences: (a) experiences channeled through the "outer" senses, such as sight, hearing, and touch, that is, experiences involving the physical world, and (b) experiences from what they termed the "inner" senses, such as experiences of pain and pleasure, feelings of love and pride, etc. (Hospers, 1967:102). Many thinkers and scholars have adopted a stronger sense of the term 'empiricism'

which is to be found in what is called positivism, a doctrine which holds that scientific knowledge of the kind that is sought and attained by the physical sciences is the only true form of knowledge, that this is based exclusively on sense experience (Lyons, 1977:122) in the sense of experiences from the "outer" sense. Although many scholars have adopted a weaker sense of the term 'empiricism', it can safely be said that empiricism, in one form or other, is the only interpretation of the scientific method which can be taken seriously in our day (Popper).

## 4. Rationalism

As opposed to empiricism, rationalism stresses the role played by the mind in acquiring knowledge and also emphasizes man's ability to use a priori principles (Lyons (1977: 122). Descartes (1596-1650), generally considered the founder of the Rationalist School, held the view that man is naturally capable of constructing theories in science by using only his reason without appealing to experience. Note that the term 'rationalism' is also used to denote the critical attitude which consists in questioning not only other people's beliefs, theories, etc., but also one's own (Popper).

## 5. Empiricism and Rationalism

It has been pointed out that the empirical method which is thought to be inductive, is widely believed the only viable method in sciences. The method is viewed as a strategy to make not only scientific discoveries but also the discoveries of techniques and the establishment of skills (Travers, 1969: 34). However (Travers, 1969: 41-46), history shows that important scientific discoveries were made through non-empirical methods. Moreover, some authors have argued researchers always have some theoretical views based on beliefs, impressions, and the like, prior to the collection of data. Popper, has rejected as "absurd" the belief that we can start with pure observation, without anything in the nature of a theory (Popper, 1972:46).

From the above discussion, we can conclude that the scientific method is essentially, but not exclusively, empirical and this holds in all sciences. Note, in this context, that all sciences started with philosophical speculations or with myths.

## 6. Empiricism, Rationalism and Linguistics

In the field of language, like other areas, ancient Greek and other philosophers were basically rationalists in the sense that what they were doing in most cases was speculate on the nature and origin of language, the nature of the connection between the form of a word and its meaning and between words and thoughts.

The question whether language is governed by nature or by convention is known in the history of philosophy as the Nature-Convention Controversy. The naturalists, for example PLATO ($5^{th}$-$4^{th}$ B.C), believed that the connection between the form of a word and its meaning or the 'thing' it denotes was natural or necessary while the conventionalists held the view that the connection was a matter of convention, 'agreement', 'social contract'. Note that, although the conventionalist view is the same as the modern view (arbitrariness of signs), neither the naturalists nor the conventionalists supported their views by sufficiently convincing factual evidence. The naturalist view was mainly based on the existence of onomatopoeic words and the so-called sound-symbolism (words containing suggestive sounds or sequences of sounds).

When confronted with words which were not onomatopoeic and could not be explained in terms of sound symbolism, the naturalists claimed that those words were derived from words which were 'natural', that is, words which were onomatopoeic or based on sound symbolism (Lyons, 1968: 5-6).

The claim of the naturalists is, obviously, untenable, not only in view of the small number of onomatopoeic words and words based on sound symbolism but also because onomatopoeic words and manifestations of sound symbolism are far from being the same in all languages.

The dispute between the naturalists and the conventionalists developed later into another dispute: the dispute as to how far language was 'regular' (Lyons, op. Cit., p.6). The dispute is called the Analogy-Anomaly Controversy. To the analogists, language is basically irregular. We know today that the analogists were right.

Another philosophical dispute with close connection with the above mentioned disputes was the controversy between the 'realists' and the 'nominalists', a controversy on the nature of meaning. The realists were those who believed that the things which constitute the extension of a word (i.e. the things to which the word can be applied) share a set of essential features. The nominalists held the view that all the things to which a word can be applied is the name (nomen in Latin) which they have been given by convention.

The above issues concerning the nature of language and other related issues, such as the origin of speech, were not confined to antiquity. They were taken up by Philosphers and Christian theologians in the Middle Ages and even Modern Time, for example:

1. Saint Augustine (354-430) strove to combine or conciliate Platonism and Christianity and was a realist in the sense defined above.

2. Saint Thomas Aquinas (1225-1274) was a nominalist and tried to incorporate Aristotelism into Christianity.

3. The 'speculative' philosophers in the Middle Ages defended the idea that language mirrored (speculum = 'mirror') reality and presented a modified view of naturalism: the form of a word, they claimed, does not directly represent the thing it signifies but represents it as existing in a particular 'mode', i.e. in a particular way, for example as an action or a quality (Lyons, op. Cit. P.15). The speculative philosophers were concerned with the study of the 'modes' of signifying' (modi significandi in Latin).

4. The Age of Enlightenment, i.e. the 18th century, abounds in theories on the origin of speech (cf. J.C. HERDER, 1770: Ursprung der Sprache; E.B. CONDILLAC, 1776: Essai sur L origine des connaissances humaines 1749: Traite des systemes) and attempts were made to create artificial language, attempts motivated by the assumption that natural languages distorted reality and was therefore incapable of handling certain logical concepts.

What can be concluded on the philosophical inquiry into the origin of language and, generally, the nature of human language? On the whole, the philosophers's views were rarely based on empirical facts. Their ideas were rationalist in nature.

Linguistics became empirical and, therefore, established itself as a science, only with the advent in the 19th century of comparative philology. This does not mean, however, that rationalism is out of place in modern linguistics. For example, Transformational-Generative Grammar and all its outgrowths lie on a rationalist foundation. There is nothing wrong about rationalism as long as views and theories are confronted with facts.

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## REVISION QUESTIONS

1. Explain the scientific method.
2. Comment on the following statement:
   "Linguistics is a science."
3. Explain and write brief notes on the following:
   (a) empiricism
   (b) nationalism
4. Explain the following:
   (a) the Nature Convention Controversy
   (b) the Analogy – Anomaly Controversy
   (c) the Realism – Nominalism Controversy
   (d) Speculative philosophers
5. Explain the interaction between empiricism and nationalism in sciences.
6. Write brief notes on:
   (a) Saint Augustine
   (b) Saint Thomas Aquinas
   (c) The Age of Enlightenment
   (d) "modi significandi"
   (e) 19th century.

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## UNIT THREE

## LINGUISTICS AND SOME OTHER DISCIPLINES

The subject matter of linguisitics is human language. However, there are many disciplines which, in addition to their own subject matters, also deal with human language. Such disciplines include, among others;

(a) neurology: a science whose concern is the function of the nervous system and its diseases;

(b) information science: a science concerned with linguistic coding, storage, processing and retrieval of information;

(c) mathematics;

(d) logic: a discipline traditionally concern. l with correct reasoning;

(e) philosophy: the study of the nature and meaning of existence, reality, knowledge, goodness, etc: (see Longman Dictionary of Contemporary English p. 770);

(f) sociology: the scientific study of societies and human behaviour in groups (op. cit. p.1001);

(g) teaching of languages; and

(h) literature.

In this unit, we shall glance at some aspects of the relationship between (a) philosophy and linguistics, (b) sociology and linguistics, (c) psychology and linguistics, (d) neurology and linguistics, and (e) literature and linguistics.

### 1. Philosophy and Linguistics

Philosophy has always been interested in languages. However, philosophers of language and linguists have been working on language independently until recently especially since Noam Chomsky's work on transformational generative grammar TG and the development of the Speech Act theory by the Philosopher J.L. Austin and his followers.

Transformational – Generative Grammar (TG) is the name of a linguistic theory developed by Noam Chomsky (see, e.g. Chomosky 1957; Chomsky 1965) and others. This theory emphasizes the concept of creativity (man's ability to produce and understand a theoretically unlimited number of sentences including those he has never produced before and those he has never heard before), emphasizes the notion that

language is innate (see 'design features') and distinguishes between deep structure (i.e. the basic structure of a language) and surface structure (i.e. the language structure actually used).

**Speech Acts**

The fundamental idea of the Speech Act theory is that any one who normally says or writes something, he does so because he intends to do something by saying or writing what he says or writes. What he does (e.g. making a request, stating a fact, giving a command) is a Speech Act.

The most fundamental speech acts, which include making a request, asking a question, giving an order, apologizing, advising, etc. are called illocutionary acts while consequences of illocutionary acts are termed perlocutionary acts. For example, if someone is late, the question 'what time is it?' can embarrass him. My asking the question is an illocutionary act and my embarrassing him (by asking him the question) is perlocutionary act.

The Speech Act theory has been incorporated in linguistic theory. In addition, there are other topics which are dealt with in both philosophy and linguistics. Presupposition is one such topic. Given two sentences, p and q, one might define presupposition as follows:

p presupposes q if (=if and only if)

(a) p implies q (= if p is true, then q is true); and
(b) not –p implies q (=if p is not true then q is true).

For example, let p be "Jane regrets that her boyfriend is bald" and let not –p be "she does not regret that her boyfriend is bald". The sentence Jane regrets that her boyfriend is bald (P) implies that her boyfriend is bald, because one cannot regret what does not exist. Similarly the sentence Jane does not regret that her boyfriend is bald, because by saying Jane does not regret that her boyfriend is bald, I assume that Jane believes that her boyfriend is bald. Note that the same presupposition holds with interrogative p and interrogative not –p, i.e. (a) Does Jane not regret that ...? Verbs such as regret and know which always presuppose the truth of their sentential comply (i.e. the sentences with their complement) are called factive verbs.

## 2. Sociology and linguistics

The acceptance of social parameters (i.e. variables) such as social status, education, sex, age, context of communication, etc has yielded the discipline known as sociolinguistics. In our department of literature and languages there are courses in sociolinguistics for the English language and Linguistics Section and for the Linguistics and African Languages Section.

## 3. Psychology and Linguistics

Like philosophy, psychology (which, historically, derives from philosophy) has always been concerned with language. The common concerns of psychologists and linguists have yielded psycholinguistics. Topics dealt with in psycholinguistics include, among others, language acquisition or language development (= developmental psycholinguistics) the relationship between language and memory, language and thought, etc.

## 4. Neurology and Linguistics

The combined interests of linguistics and of neurologists (=scientists who are concerned with the study of the nervous system and its diseases) in those parts of the central nervous system underlying language have led to the development of an interdisciplinary science called neurolinguistics. Neurolinguists studies (a) the role played by the brain in speech production, perception and comprehension and (b) language disorders (aphasia). As a matter of fact, there is nowadays ample evidence that the human brain contains specialized areas which are directly concerned with the production and comprehension of speech and writing, notably Broca's area and Werknicke's area. Language disorders due to problems in Broca's area are called Broca's aphasia and language disorders due to problems in Werknicke's area are called Werknicke's aphasia. In Broca's production is severely impaired (at any rate, comprehension is less affected than production). In Wernick's aphasia comprehension is severely impaired. However, in Wernicke's aphasia production can also be affected.

## 5. Literature and Linguistics

The relationship between literature and language is natural because in both disciplines the subject matter is the same, language. Linguistics is concerned with the system of language while literature is, in the final analysis, a particular use of language. In recent years there have been successful and unsuccessful attempts of apply linguistic concepts to literature. For example, there exist several studies on the style of literary works from a linguistic point of view (= linguistic stylistics).

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## REVISION QUESTIONS

1. Discuss and illustrate the concept of speech act.

2. What is meant by presupposition? Illustrate.

3. What is a factive verb?

4. How do you view the relationship between sociology and linguistics?

5. How do you view the relationship between psychology and linguistics?

6. How do you view the relationship between literature and linguistics?

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## UNIT FOUR

# INTRODUCING PHONETICS

## 1. DEFINITION

Phonetics is the systematic study of speech sounds. It studies, among others, the physical properties of speech sounds (= acoustic phonetics), how they are produced by human organs (the so-called 'organs of speech': lips, teeth, tongue, larynx, etc etc) (= articulatory phonetics) and how they are perceived by human ears and how they are transmitted in the form of energy to the brain (= auditory phonetics). The task of the phonetician includes, among others, an account of how speech sounds can be described, classified and transcribed (i.e represented by written symbols). Note that the term acoustics designates a branch of physics which studies sounds in general.

## 2. SOME USES OF PHONETICS (Catford 1990: 1 – 2)

(a) since, by definition, human articulated language is made of speech sounds, some knowledge of phonetics is an indispensable ingredient of a comprehensive study of any human (articulated) language. It is virtually impossible to do serious work in linguistics without a thorough knowledge of phonetics.

(b) Phonetics is also useful to those concerned with various aspects of the mother tongue; the phonetically trained teacher of reading will have a better understanding of orthographic problems and the relationship of spelling to the spoken language.

(c) In the teaching of speech-production phonetics is obviously essential – actor, particularly those who wish to master numerous dialects and foreign accents, certainly ought to have a thorough knowledge of phonetics, which, alas, they usually lack.

(d) Speech pathologists (= speech therapists = medical staff specialized in affected speech) have an obvious need for phonetics, which they readily acknowledge, both for a general understanding of how the vocal apparatus (= set of human organs involved in the production of speech sounds, i.e. the so-called 'organs of speech') works and for the diagnosis and treatment of minor articulatory defects (= defects in the production of speech sounds).

(e) Communication and computer engineers and other speech – scientists' working on speech transmission systems, on speech synthesis (= artificial production of speech sounds by a device called a synthesizer), and on automatic speech recognition (= identification of speech sounds by a computer), also need to have a considerable knowledge of phonetics.

## 3. ARTICULATORY PHONETICS:

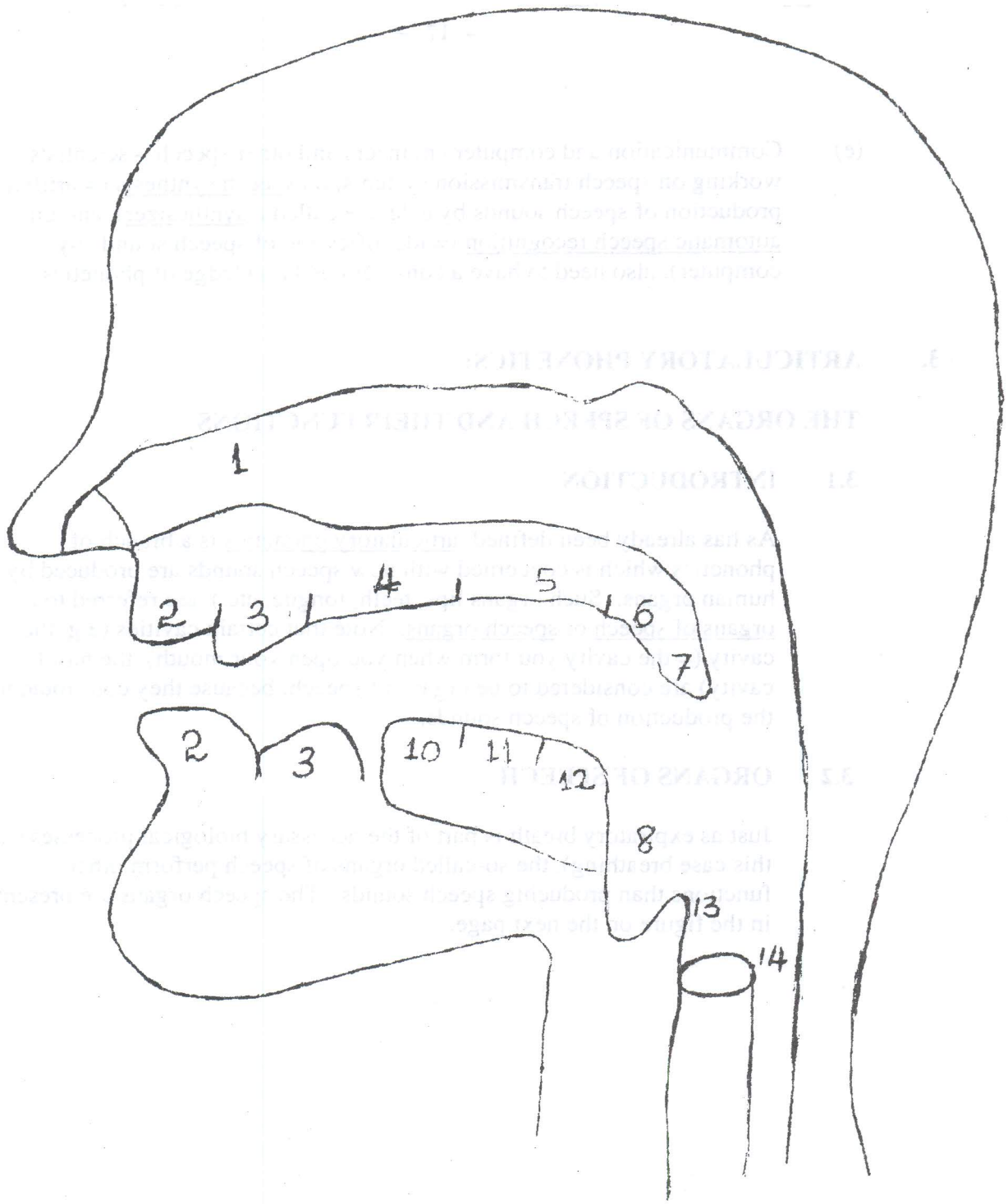
## THE ORGANS OF SPEECH AND THEIR FUNCTIONS

### 3.1 INTRODUCTION

As has already been defined, articulatory phonetics is a branch of phonetics which is concerned with how speech sounds are produced by human organs. Such organs lips, teeth, tongue, etc.) are referred to as organs of speech or speech organs. Note that certain cavities (e.g. the oral cavity (= the cavity you form when you open your mouth), the nasal cavity) are considered to be organs of speech, because they contribute to the production of speech sounds.

### 3.2 ORGANS OF SPEECH

Just as expiratory breath is part of the necessary biological processes (in this case breathing), the so-called organs of speech perform other functions than producing speech sounds. The speech organs are presented in the figure on the next page.




1. Nasal cavity
2. Lips
3. Teeth
4. Teeth-ridge (or alveolar ridge)
5. Hard palate
6. Soft palate (or velum)
7. Uvula
8. Pharynx
9. Tip of tongue
10. Blade of tongue
11. Front of tongue
12. Back of tongue
13. Epiglottis
14. Vocal cords

The bulk of speech sounds are initially yielded by the air expelled from the lungs. In this sense, speech is a "wonderful by-product of the necessary physiologically necessary process of breathing" (Robins p. 81). This means that most speech sounds are produced by the force of expiration. However, while in breathing expiration is (usually) silent, in speech it makes noise because of pressure.

The air stream expelled from the lungs passes out of the trachea (i.e. windpipe) through the glottis. This is the gap between the two vocal cords, or vocal folds, contained in the larynx, which is a frame of cartilage situated at the top of the trachea.

The articulation of speech sounds involves the modification of the volume and shape of the vocal tract. This is made of he following cavities:

(i) the buccal or oral cavity (mouth);

(ii) the nasal cavity;

(iii) the pharyngeal cavity (pharynx); and

(iv) the pulmonic cavity, including the lungs and the trachea.

The role of the vocal cords deserves special mention. The two vocal cords are extremely movable and play a cardinal part in the production of speech sounds. Robins (p. 82) describes the function of the vocal cords as follows:

(j) "These can be pulled together wholly to cut of the outward (or inward) stream of air, as in 'holding one's breath".

(ii) "They can be relaxed and folded back at each side, as in normal breathing, when they permit the air to flow through freely and silently".

(iii) "Momentary obstruction by the vocal cords followed by the release of expiratory air produces a sound called the glottal stop, used in a number of languages, for example Arabic".

(iv) "The vocal cords may also be held together tightly so that the air stream vibrates them regularly at different speeds in its passage through them. This vibration is known technically as voice or voicing, and is a component of many of the speech sounds of all languages.

(v) The vibration of the vocal cords "is also the source of voice pitch, the material of intonation, the pitch, the phenomena of tone languages ... Its absence is called voicelessness, and several pairs of similarly articulated sounds are distinguished in many languages as voiced and voiceless".

(vi) "Apart from voicing, the vocal cords may be held fairly close together, so as to interfere with the egressive air by making a push through a restricted aperture. This process is not fully understood at present, but it plays some part in the type of speech called whispering (in which the glottal vibrations of voicing are not made). The audible passage of air through the glottis is responsible for the production of h – like sounds (as in English hand, behind".

Below are the most common sounds in Zambian languages, grouped into voiceless sounds and voiced sounds:

Voiceless: [p t f s ʃ ʧ k]

Voiced: [ i e a o u b βd l r g v z ʒ j w d ʤ]

In the above lists, [ ʃ ] is pronounced as sh in shame, [ ʧ ] as ch in Chair, [ ß ] as the first b in Bemba ukubomba 'to work', [ ʤ ] as j in Jam, [ j ] as y in you.

Above the glottis, obstruction and narrowing of the vocal tract are mainly made by the lips, the tongue and the uvula.

## 4. THE CLASSIFICATION OF SPEECH SOUNDS

### 4.0 General

It has been customary to classify speech sounds into two major categories, viz. (i) consonants and (ii) vowels. The so-called semi-vowels are classified among consonants on functional grounds although from an articulatory point of view they would better be treated as vowel glides (see Gimson p. 35).

### 4.1 Consonants

#### 4.1.0 General

It has been pointed out that most speech sounds are produced by the force of expiration. Sounds produced in this way are called egressive sounds while those produced by sucking in air from outside are termed ingressive sounds.

Consonants are sounds made in such as way that, the vocal tract being closed or narrowed, the airflow is either blocked or restricted (e.g. p, b, f, v). Vowels are produced in such a way that the airflow escapes freely.

Vowels are normally produced by egressive air-stream and few languages use ingressive sounds.

### 4.1.1 Egressive consonants

Usually the following criteria are used for the classification and description of egressive consonants:

(i) the place of articulation;
(ii) the manner of articulation;
(iii) the position of the velum (soft palate); and
(iv) the vibration or non-vibration of the vocal folds (i.e. the presence or absence of voice).

he charts of egressive consonants are thus arranged:

(i) the horizontal axis indicates the place of articulation;
(ii) the vertical axis shows the manner or articulation;
(iii) where applicable, consonants are paired to indicate the voiceless consonant on the left and the corresponding voiced consonant on the right.

**(A) Place of articulation**

The expression 'place of articulation' refers to the place where the vocal tract is blocked or narrowed by a movable organ of speech. The following are the main types of consonants according to the place of articulation:

(i) bilabial: the passage of the air-stream is blocked or narrowed by the two lips (e.g. [p b m]).
(ii) labio-dental: the lower lip touches the upper teeth (e.g. [f v]).
(iii) dental: the tongue tip and rims act as the active articulators and the upper teeth as the passive articulators (e.g.[θ] in thin and [ ] in there.
(iv) alveolar: the blade, or tip and blade, of the tongue touches or is in close proximity of the alveolar ridge of the upper teeth (e.g. [n s z] ).
(v) retroflex: the tip or the tongue is curled back so as to touch the hard palate immediately behind the alveolar ridge.
(vi) palato-alveolar or postalveolar: the blade, of the tongue touches the alveolar ridge while the front of the tongue is raised towards the hard palate (e.g. [S] in shame and [3] in pleasure);
(vii) palatal: the front of the tongue touches or is in close proximity with the hard palate (e.g. ny in Bemba 'akanya' 'baby');
(viii) velar: the back of the tongue touches or is in close proximity with the velum (soft palate) e.g. [k g];
(ix) uvular: the passage of the air-stream is blocked or narrowed by the uvula and the back of the tongue (e.g. r in French rue 'street');

(x) pharyngeal: the vocal tract is narrowed in the pharynx (e.g. h in Arabic Ahmed);

(xi) glottal or larvngeal: an obstruction or narrowing of the vocal tract is made by the glottis (e.g. glottal stop noted [ʔ] in the IPA).

Note that the production of some consonants involves a secondary place of articulation in addition to the primary. For example, in [bg] g refers to the primary point of articulation and b to the secondary, [bg] is produced with rounded lips.

**(B) Manner of articulation**

The expression 'manner of articulation', or 'mode of articulation', refers to (i) how the air stream is constricted or released and (ii) whether the vocal cords vibrate (i.e. whether there is voice).

Basically, there are four ways in which the vocal tract is obstructed to produce speech sounds. We shall characterize and describe them after Gimson (pp. 34-35). The vocal tract may be:

(i) narrowed to such an extent that a friction is made;
(ii) completely closed;
(iii) partially closed;
(iv) intermittently closed.

### 4.1.2 Ingressive consonants

In some languages, certain consonant sounds are produced by ingressive air-stream, that is, by sucking in air from outside through the mouth. There exist two categories of consonants thus generated, namely (i) stops known as implosives or suction stops and (ii) clicks.

**(A) Implosives**

Implosives stops are thus produced:

(i) The vocal tract is completely blocked with the lips (bilabial implosive) or the teeth and/or the tongue (dental implosive, alveolar implosive, etc.), the glottis being closed;

(ii) Then the glottis is open so that the air contained in the mouth and phaxynx is rarefied;

(iii) As a result of the air being rarefied in the mouth and pharynx, when the closure is released the outside air is sucked in.

To produce voice, when the closure is stopped voice is produced by egressive air from the lungs.

Implosives are noted as follows, [ ɓ ] = implosive (b), [ ɗ ] = implosive (d); [ ɠ ] implosive (g). etc.

**(B) Clicks**

Click sounds are produced as follows:

(i) Two closures are made in the mouth by the tongue;

(ii) The air contained in the cavity between the two closures is rarefied by increasing the volume of the cavity;

(iii) The two closures are released simultaneously, causing air to be sucked in.

Several Southern African languages, especially those belonging to the so-called Khoisan language family, use clicks as distinctive sounds. Examples of click consonants are the dental alveolar click and the lateral click.

### 4.1.3 Narrowing and closure of the vocal tract

**(A) Narrowing of the vocal tract**

When the vocal tract is narrowed by two organs which come close to each other to such an extent that the air-stream passes through with friction, the sound produced is termed a fricative (e.g. f v s z h).

**(B) Complete closure of the vocal tract**

Three types of consonants are yielded by completely closing the vocal tract, namely (i) plosives, (ii) affricates and (iii) nasals.

**(i) Plosives**

In the production of plosives, the nasal cavity is sealed off by the soft palate, so that no air-stream escapes through the nose, and the rest of the vocal tract is blocked at some other point behind which the air pressure builds up so that when the obstruction is stopped the air-stream is released explosively. Examples of plosives: (p b t d k g).

Note that consonants produced by complete closure of the vocal tract at some point in the vocal tract and with simultaneous sealing off of the nasal cavity are called stops. Plosives are egressive stops.

**(ii) Affricates**

Like in the case of stops, the nasal cavity is sealed off by the velum and a complete closure is made at some other point by the release of the air-stream slower than for stops so that a fricative is heard. Thus, affricates are customarily considered to be combinations of stops plus fricatives. Examples of affricates: ch in cheer and j in jeep.

**(iii) Nasals**

The difference between stops and affricates, on the one hand, and nasals on the other, is that the production of the latter, but not of the former, involves the lowering of the velum (soft palate) so that the air-stream can escape through the nose. Like for stops and affricates, there is a complete closure of the vocal tract at some point, behind which air pressure builds up.

**(C) Partial closure of the vocal tract**

Some consonants are produced by blocking the nasal cavity with the soft palate and partially closing the vocal tract at some other point with the tongue in such a way that the air-stream escapes along one or both sides of the tongue. Such consonants are termed laterals (from Latin latus 'side'). Laterals are the l-like consonants.

**(D) Intermittent closure of the vocal tract**

Some consonants are produced by "intermittent closures or taps made by a flexibleorgan on a firm surface" (Gimson p. 35) so that a vibration is heard. When several taps are made, the consonant is called a thrill or rolled consonant or a roll (e.g. the Nyanja or Swahili r). When a single tap is made, the consonant is called a flap. An example of a flap is the inter-vocalic r in standard English (as in merry). The usual organs which produce thrills and flaps are the lips and the uvula.

At any place of articulation may be produced a voiceless consonant when the vocal folds do not vibrate. For example [p] is a voiceless bilabial plosive while [b] is a voiced bilabial plosive. However, the presence or absence of voice usually brings about, or is accompanied by, another difference, namely the amount of breath and the degree of muscular effort. For example, according to Gimson (pp. 35-36), English voiced consonants tend to be articulated with relatively weak energy compared to corresponding voiceless consonants which are fortis (i.e. strong). Voiced consonants are lenis (i.e. weak). Note, however, that in charts of consonants, the features fortis and lenis are usually not included unless they are not concomitant with voicelessness and voice.

## 4.2 Vowels

### 4.2.0 General

Vowel sounds are generated by voiced egressive air-stream from the lungs, without any closure, narrowing and noise characteristics of consonant sounds. The various vowel qualities depend upon the shape and volume of the supra-glottal area of the vocal tract as determined by the degrees of aperture of the mouth, the position of the tongue, the lips and the soft palate. Thus vowels are produced by the "glottal tone modified by the action of the upper resonators of the mouth, pharyngeal and nasal cavities" (Gimson p. 38).

### 4.2.1 Function of the soft palate

Some languages, for example French and Umbundu, discriminate between oral vowels and nasalized vowels. The former are produced with the soft palate so raised that air-stream from the lungs escapes only through the mouth while in the production of the latter the solft palate is so lowered that the air-stream from the lungs escapes both through the mouth and nose.

At least in some Zambian languages vowels are always somewhat nasalized before nasal consonants. For example, in Bemba "vowels are somewhat nasalized if they occur between two nasals." "(Kashoki 1968:9).

In the International Phonetic Alphabet (IPA), vowel nasalization is indicated by the diacritic called the tilde and noted on vowel symbols. Thus [a] and [ã] stand for oral a and nasalized a, respectively.

### 4.2.2 Function of the tongue

In the production of vowel sounds, there are two main ways in which the tongue moves, namely: (1) some part of the tongue is raised towards the palate or lowered below the neutral position (tongue-height), or (ii) the whole of the tongue moves forward or is retracted towards the back of the oral cavity (tongue-advancement).

The following is a classification of vowels according to the tongue-height criterion:

(i) High vowels: some part of the tongue is raised towards the palate e.g. [i,u].

(ii) Mid vowels: some part of the tongue is raised towards the palate but less than for high vowels; in some languages (e.g. English, Lingala and Nande), mid vowels are grouped into high-mid vowels e.g. [e o] and low-mid vowels e.g. [ɛ]: high-mid vowels are closer to the high vowels and low-mid vowels are closer to the low vowels;

(iii) Low vowels: the tongue is lowered below the neutral position e.g. [a];

According to the tongue-advancement criterion, vowels are thus categorized:

(i) Front vowels: the tongue moves forward e.g. [i e];

(ii) Back vowels: the tongue is retracted towards the back of the mouth e.g. [u ɔ ];

(iii) Central vowels: vowels which are neither front nor back, e.g. [ ə ] (e.g. e in later).

It is noteworthy that the raising and lowering of the tongue are accompanied by the narrowing and the opening of the mouth, respectively. Therefore, instead of categorizing vowels according to tongue-height, the criterion of the degree of aperture (= opening) of the mouth may be used, yielding the following classification:

(i) close vowels, corresponding to high vowels;

(ii) half-close vowels, corresponding to high-mid vowels;

(iii) half-open vowels, corresponding to low-mid vowels;

(iv) open vowels, corresponding to low vowels.

In languages where mid vowels are not subcategorized into high-mid vowels and low-mid vowels, in classifications based on the degree of aperture of the mouth, mid vowels are called either half-open vowels or half-close vowels.

### 4.2.3 Function of the lips

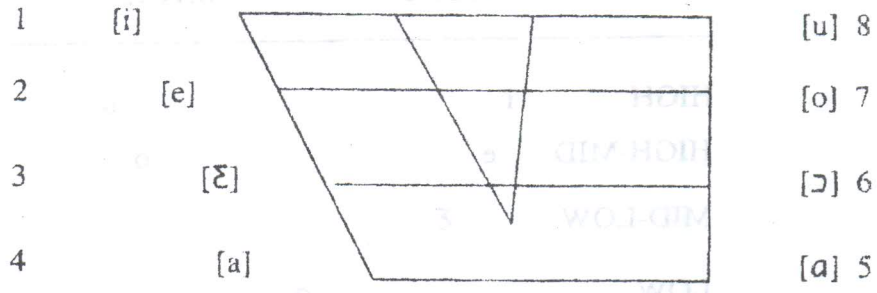
Some vowels are produced with a rounded lip orifice while others are produced without such lip rounding. The former are termed rounded vowels and the latter unrounded vowels, or non-rounded vowels or spread vowels. Examples of rounded vowels: [u o]; examples of unrounded vowels: [ɪ e a].

### 4.2.4 Cardinal Vowels

The Cardinal Vowel scale is a series of eighteen vowels set up and recorded by the British phonetician Daniel Jones for reference and comparison, as the various languages in the world are far from having the same systems. Since the set is recorded, "reference may always be made to a standard, invariable scale" (Gimson p.41) 3 . In this scale, vowels are numbered from 1 to 18.

The Cardinal Vowel scale is made of eight Primary Cardinal Vowels and ten Secondary Cardinal Vowels. The eight Primary Cardinal Vowels are as follows:

**Figure 2.: PRIMARY CARDINAL VOWELS**




### 4.2.5 Gliding vowels

As pointed out by Gimson (p.43), "It is clearly not possible for the quality of a sound to remain absolutely constant (or, in other words, for the organs of speech to function for any length of time in an unchanging way)." However, a distinction is made between the so called 'pure vowels', such as the cardinal vowels, and gliding vowels.

### 4.2.6 Example: the Bantu vowel system

Bantu languages are a language family whose domain stretches from Cameroun (in the north-west) to Kenya (in the north-east) up to the southernmost past of the African continent with the exception of the Kalahari desert, which is the domain of Khoisan languages.

Bantu languages have been said to have two major vowel systems: one to which all Zambian Bantu languages belong, with five vowels and another with seven vowels.

According to the tongue-height and tongue-advancement, the Bantu five-vowel system is as follows:

(7)

| | FRONT | BACK |
|---|---|---|
| HIGH | i | u |
| MID | e | o |
| LOW | a | |

The Bantu seven-vowel system is as follows:-

| | FRONT | | BACK |
|---|---|---|---|
| HIGH | i | | u |
| HIGH-MID | e | | o |
| MID-LOW | ɛ | | |
| LOW | | a | |

(e.g. in Lingala).

Note that in the above charts of vowels the criterion of the position of the lips is not used. The reason for this is that in the above charts all the front vowels are unrounded and all the back vowels are rounded.

When the production of vowels involves the constant moving of the tongue so that the vowel quality changes in such a way that only the beginning and the end are perceived, the vowel is called a diphthong; if three stages are perceived (i.e. the beginning, the end and one point in between), the vowel sound is a triphthong. For instance, a in late is rendered by a diphthong ([leit]) and ayer in player by a triphthong [pleiə].

## REFERENCES

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Kashoki, M.E. (1968) A Phonemic Analysis of Bemba. Manchester: Manchester University Press.

Robins, R.H. (1971) General Linguistics: An Introductory Survey. London: Longman Ltd.

## REVISION QUESTIONS

1. Draw a figure (a person's head) and show where the various organs of speech are located.

2. What is the trachea?

3. Describe the role of the vocal cords.

4. What is the difference between consonants and vowels?

5. Explain:

   (a) egressive sound
   (b) ingressive sound
   (c) place of articulation
   (d) mode, or manner, of articulation

6. With examples where the sound exists in a language you know, explain:

   (a) bilabial
   (b) labio-dental
   (c) dental
   (d) alveolar
   (e) retroflex
   (f) palato-alveolar
   (g) palatal
   (h) velar

7. With examples, explain the function of:

   (a) the tongue; and
   (b) the lips.

## 5. THE INTERNATIONAL PHONETIC ALPHABET AND PHONETIC TRANSCRIPTION.

### 5.1 INTERNATIONAL PHONETIC ALPHABET

Because the various languages in the world have different phonetic systems (= sets of sounds), because several graphic systems (e.g. Roman, Arabic, Chinese) are currently in use, because two languages using the same graphic system (e.g. English and one Zambian language) may spell the same sound differently (compare ng in English sing and n in Lozi kunola), the various speech sounds are transcribed in phonetics in or with reference to the International Phonetic Alphabet (IPA), the work of the International Phonetic Association (also abbreviated to IPA).

**Examples of words with sounds represented by some of the symbols of the IPA**

p as in spot

b as in bean

t as in stop

d as in dean

k as in scout

g as in go

m as in me

ɱ as in Bemba ukumfwa 'to hear/feel/understand'

n as in now

ɲ is the sound written ny in Bantu as in nyama 'meat'

ŋ as in sing

l as in low

ɾ as in Nyanja kuliɾa 'to cry'

R as in French mère 'mother'

ß as in Bemba ukubeela 'obey or Lozi batu 'people'

f as in flower

v as in vain

θ is the sound th in think

ð is the sound th in there

s as in sell

z as in realize or revise

ʃ as in share

ʒ as in pleasure

h as in (Plateau Tonga Syakalima or English hat)

ɲ as in Plateau Tonga zyintu 'things'

## 5.2 PHONETIC TRANSCRIPTION; PRESENTATION

The phonetic transcription of a word is the graphic representation of the pronunciation. Unless otherwise specified, phonetic transcription is done using the symbols of the **International Phonetic Alphabet** (IPA), because it is the only one which every phonetician or linguist is supposed to know.

A word of caution: don't confuse spelling and pronunciation. For example, sh in English and Zambian Languages represents only one sound: neither s nor h in sh is pronounced. The sequence sh represents the sound symbolized by [ʃ] in the IPA. Thus the English word ashes is to be transcribed [æʃiz], where [æ] is the transcription of a in ashes, (I) (without a dot) the transcription of e in ashes, [ ɪ ] the transcription of sh and [z] the transcription of s, the final s in ashes. Note also that a sound can be spelt differently; for example (z) is spelt s or z (sometimes optionally, sometimes obligatorily depending on the word) and the same letter or sequences of letters can represent different sounds (compare s in revision and revise). Finally it is to be noted that what is transcribed phonetically is written between square brackets, e.g. [bet].

In addition to the IPA symbols above, there are symbols which are used to represent suprasegments, or prosodic features: (a) tone, or pitch; (b) quantity, or length; (c) stress).

### Tone Marking

**Tone is generally marked as follows:**

´ (=acute accent) = high tone, e.g. á

` (=grave accent) = low tone , e.g. à

ˈ =mid tone, e.g., a̍

^ (=circumflex) = falling tone, e.g. â

ˇ =rising tone, e.g. ǎ

The signs are written above the symbols of vowels (and certain nasals in certain languages), e.g. [ú̀kùlùkà].

**Quantity mark**

In many languages vowels are either long or short. A semicolon after the symbol of a sound means that the sound is long, e.g. Bemba ukuleepa [ukule:pa] 'to be long'.

**Stress marking**

Consider the Swahili word watu 'people', the phonetic transcription is [ˈwatu]. The symbol ˈ before w means that the syllable wa is stressed, i.e. pronounced with more energy than tu. Consider now the phonetic transcription of the English recommendation: [rekemen ˌdeiʃen]. The mark at the beginning means that re bears a secondary stress, i.e. a stress weaker than the stress of dei (the main stress).

ADVICE: Use the Longman Dictionary of Contemporary English to do transcription exercise. But note that English is not a tone language.

## 5.3 PHONETIC TRANSCRIPTION OF AFFRICATES

Since an affricate is articulatorily a sequence of a stop and a fricative, in IPA it is represented by the symbol of the stop and the symbol of the fricative, e.g. check [tʃek], jam [ʤæm].

## 5.4 EXAMPLES OF EXERCISES OF THE CLASSIFICATION OF SPEECH SOUNDS

**1. Describe the sounds symbolized in the IPA by**

(a) [p] = stop, bilabial, voiceless
(b) [b] = stop, bilabial, voiced
(c) [ph] = stop, bilabial, voiceless, aspirated
(d) [n] = nasal, alveolar, voiced
(e) [k] = stop, velar, voiceless
(f) [v] = fricative, labiodental, voiced
(g) [j] = glide (or semi-vowel), palatal, voiced

**2. Question**

Write in IPA symbols the sounds described as follows:
(a) Voiceless bilabial stop
(b) Voiced postalveolar affricate

**Answer**

(a) voiceless bilabial stop = [p]

(b) voiced postalveolar affricate = [ʤ]

**Revision Exercises**

Transcribe in IPA:

(a) summer
(b) governor
(c) disco music
(d) disarmament
(e) blackboard

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# UNIT FIVE

# INTRODUCING PHONOLOGY

## 1. PHONOLOGY AND PHONETICS

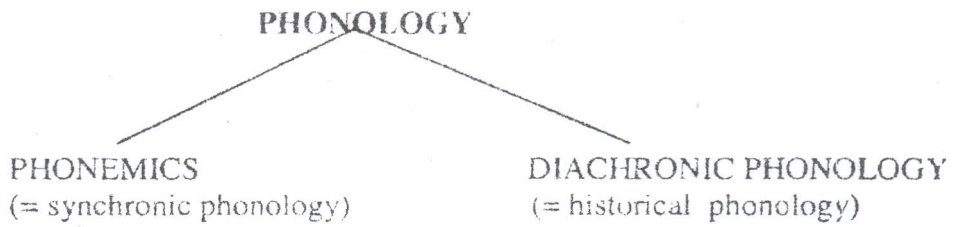
Both **phonetics** and **phonology** are the study of speech sounds (a **phone** is a technical term sometimes used as an equivalent of **sound**). Sommerstein (1977:1) explains very well the difference between them when he writes:

> "Phonetics deals with the capabilities of the human articulatory and auditory systems with respect to the sounds and prosodic features available for us language, and with the aoustic characteristics of these sounds and features themselves ... Phonology, in a sense, begins where phonetics leaves off. It is concerned with the ways in which the sounds and prosodic features defined by phonetics are actually used in natural languages."

More specifically, **phonology** is the study of the patterns displayed by sounds and prosodic features (tone, length, stress) in natural languages.

## 2. THE DICHOTOMY PHONOLOGY/PHONETICS

**Phonology** is a generic term in that it covers both **synchronic** and **diachronic** (historical) studies of the patterns of speech sounds and prosodic features. **Phonemics** simply means 'synchronic phonology':



## 3. THE DICHOTOMY SEGMENTAL PHONOLOGY/SUPRASEGMENTAL PHONOLOGY

**Segmental phonology** deals with speech sounds without considering any prosodic features (tone, length, stress) while **suprasegmental phonology** deals only with prosodic features (tone, length, stress). The term **segment** refers to any speech sound minus all prosodic features (i.e. **without considering** any prosodic features). The term **suprasegment** is the equivalent of the term **prosodic feature.**

## 4. PHONE, PHONEME AND ALLOPHONE

**'Phone'** means 'sound' or 'segment' (see above). A **phoneme** is a class of phonetically similar sounds or phonetically similar prosodic units which is **distinctive** and whose constituent sounds or prosodic units are in **complentary distribution.**

**Example 1: (English)**

Consider the pronunciation of the words **pin, paint, repaint, spin** and **empty**:

1.

| A | | B | |
|---|---|---|---|
| Pin | [$P^h$in] | Spin | [spin] |
| Paint | [$P^h$eint] | empty | ['empti] |
| Repaint | [ri'$p^h$eint] | capsule | ['kæpsju:l] |

We notice that in column A, **P** is aspirated (as in Nyanja **Phiri)** while in the B-words **P** is not aspirated (= the **P** in, e.g. Bemba ukuupa 'to marry'). Thus, according to the examples in (1) English has two different **P's**: an aspirated **P** and an unaspirated **P**. However, the sounds are phonetically similar, since there are both **P's**. Therefore, the two sounds form 'a class of phonetically similar speech sounds,' which is the frst (though not the only) statement in our definition of a phoneme. Let us represent the set ([$P^h$], [P] by one symbol, say P so that P= [$P^h$] or [P].

We now come to the term **distinctive**. Let us look at the examples in (2).

2. pin/bin
   pan/ban
   map/mat

We notice that if in **bin** we replace **b** by **P** we get **pin**; if in **ban** we replace **b** by **P** we get **pan;** and if in **mat** we replace **t** by P we get map. Conversely, if in **pin** we replace **P** by **b** we get **bin**; if in **pan** we replace **P** by **b** we get **bin**; and if in **map**, we replace **P** by **t** we get **mat.** We conclude that in English **P** can be used to contrast words. This is what is meant by **distinctiveness,** a technical term in English. Thus, **a sound** is distinctive if its replacement can change the meaning. However, since both [P] (as in **spin**) and [$P^h$] (as in **pin**) are not distinctive, we conclude that it is the class of P's which is distinctive.

The last term to be explained in the definition of a phoneme is **'complementary distribution'.** Two or more similar entities are said to be in complementary distribution if they are mutually exclusive, i.e. if they never occur in the same environment. Let us look back at the examples in (1). These examples show that, in English, P is always and only aspirated in syllable-initial position (i.e. at the beginning of a syllable) and is always and only unaspirated if it is **not** in syllable-initial position.

From the above discussion, we conclude that the sounds [P] and [$P^h$] in English are members of the same phoneme;

(a) they form a class of phonetically similar sounds;

(b) the replacement of [P] or [Ph] by another sound may change the meaning; and

(c) [P] and [Ph] never occur in the same environment (= they are in complementary distribution).

We represent by /P/ the phoneme whose constituent sounds are [P] and [$P^h$] and we say that sounds [P] and [$P^h$] are **allophones** of /P/. note that /P/ is an **abstract** sound, in the sense that it merely represents a class of sounds (the set { [P], [$P^h$] } and what **is concrete** is what we actually pronounce, that is, the **allophone**. An allophone is simply defined as one of the 'variants' of a phoneme.

3. (a) [luka] 'plait'
[luka] 'vomit'

(b) [ukunona] 'to be fat' [animal]
[ukunona] 'to sharpen'

What the examples in (3a) show is that in Bemba **low tone** (L), marked by ', and high tone (H); marked by ', are distinctive. therefore phonemes. The examples in (3b) show that vowel length is distinctive in Bemba: vowels are either short (in which case there is no **mark**) or long and their being long or short can have an impact on meaning. In connection with (3a), note that Bemba, like most Bantu languages, is a **tone language** (i.e. a language in which tone is distinctive) while

English is a **stress language** (i.e. a language where stress may be distinctive. Also note that the English phoneme /P/ is a segmental phoneme while the phonemes illustrated in the Bemba data in (3) are suprasegmental **phonemes.**

## 5. MINIMAL PAIRS

A **minimal** pair is a set of **two** words, phrases, etc. with only one difference, as exemplified below:

4. (English)

   (a) zip/sip
   (b) tip/lip
   (c) hit/hip
   (d) dean/bean

5. (Bemba)

   [lu`ká] 'plait' [lúká] 'vomit!'

6. (luvale)

   [kulema] 'to be heavy' [kulima] 'to cultivate'

7. (mbunda)

   Kutánga 'to read' /kukánga 'to roast'

Minimal pairs are used to identify phonemes.

**NOTES:** Translations are called, technically, **glosses** (singular: **gloss**)

- Glosses are usually given between inverted commas without underlining them!.

## 6. SCOPE OF PHONEMIC ANALYSIS

The title means a **comprehensive phonemic analysis**. A comprehensive phonemic analysis of a language comprises the following:

(a) an inventory of all segmental phonemes and of all supragmental phonemes (but a language may not have any type of suprasegmental phoneme, e.g. Swahili);

(b) an **allophonic analysis** (i.e. show the allophones of each phoneme) and an analysis of the variation in the realization (= pronunciation) of suprasegmental phonemes; and

(c) a **morphophonological analysis**, i.e, phonological variations when we combine morphemes (= meaningful constituent parts of a word, as in dog-s, cry-ing).

**NOTE:** (c) will be discussed in the context of **morphology**, later

## 7. HOW TO IDENTIFY PHONEMES

Ideally, the analytic procedure to identify all the phonemes of a language consists of he following activities to be performed in that order:

(a) To make a complete list of segments (i.e. sounds minus all **prosodic features**) and of all prosodic features which you can perceive with your ears; this is done by collecting texts and transcribing phonetically (you stop doing so only when you are satisfied that no more segments or suprasegments are likely to be discovered).

(b) To make a list of phonemes on the basis of minimal **pairs** (e.g. say that there is a phoneme /P/ and there is phoneme /b/ on the basis of the minimal pair [$P^h$in 'pin' /[bin] 'bin', and say that there is a phoneme [P] and there is phoneme /t/ on the basis of **spot** and **stop**. The list of phonemes established only on the basis of minimal pairs is, however, provisional (see (c) below).

(c) To reduce, where applicable, the number of phonemes established by the procedure in (b), above, by grouping into single unit those units which are in free variation (which is rare) or are in complementary distribution. Thus, although in (b) [$P^h$] and [P] were regarded as different phonemes, i.e. /$P^h$/ and /P on the basis of minimal pairs, they are phonetically similar and are in complementary distribution. Th end result is visualized as follows, in the case of [$P^h$] and [P]:

(d) /P/ → [$P^h$] in syllable – initial position

→ [P] elsewhere

How to read (d)? (d) is technically read as follows:

"The phoneme /P/ is realized by the sound [$P^h$] in syllable-initial position and by the sound [P] elsewhere," or "The phoneme /P/ has two allophones: [$P^h$] in syllable – initial position and [P] elsewhere.

## REFERENCES

Sommerstein, A.H. (1977) Modern phonology, London: Edward Arshold.

## REVISION QUESTIONS

1. Explain the following statement;

   "Phonology, in a sense, begins where phonetics leaves off,"

2. What is phonemics?
3. Explain:

   (a) suprasegmental phoneme

   (b) segmental phoneme

4. With examples, explain the following;

   (a) phoneme

   (b) allophone

   (c) distinctiveness

   (d) complementary distribution

   (e) minimal pair

5. How are phonemes identified?
6. Describe the scope of phonemic analysis.

# 8. FEATURE PHONOLOGY

## 8.0 GENERAL

In modern phonology, phonemes are described in terms of their phonetic characteristics, for example; whether or not a phoneme is a **consonant**, whether or not it is **voiced,** whether or not it is a **nasal,** etc. such characteristics are called **phonetic features** and phonemes are regarded as bundles of phonetic features just as molecules, the smallest amounts of matter, are made of atoms.

Each feature is specified either **positively** (by writing + before the name of the feature) or **negatively** (by writing – before the name of the feature. For instance, to say that /P/ is [+ consonantal] and [- voice], generally written $\begin{bmatrix} + & \text{consonantal} \\ - & \text{voice} \end{bmatrix}$ means that /P/ is a consonant and voiceless. Similarly, to say that /a/ is [- consonantal] means that /a/ **is not** a consonant.

## 8.1 SOME PHONETIC FEATURES

**Vocalic** (voc): presence in the spectogram of at least two well-defined formats (i.e. formats which can be seen clearly). [+ voc]: all vowels, nasals, l-sounds and r-sounds)

**(NOTE:** l-sounds and r-sounds are called **liquids**); all the other sounds are [- voc].

**Consonantal** (cons): interference with airstream; all and only consonants are [+ cons] and all the other sounds are [- cons]

**NOTE:** Using the features [voc] and [cons], four classes of sounds are Distinguished:

$$\begin{bmatrix} +\text{ voc} \\ -\text{ cons} \end{bmatrix} = \text{vowels}$$

$$\begin{bmatrix} -\text{ voc} \\ -\text{ cons} \end{bmatrix} = \text{semi-vowels}$$

$$\begin{bmatrix} +\text{ voc} \\ +\text{ cons} \end{bmatrix} = \text{nasals, liquids (= l – and r – sounds)}$$

$$\begin{bmatrix} -\text{ voc} \\ +\text{ cons} \end{bmatrix} = \text{all consonants other than nasals and liquids}$$

**Sonorant** (son): production with relatively **free flow** of air and with a vocal position such that spontaneous voicing (= vibration of vocal cords) is possible. [+ son] = all vowels, glides (= semi-vowels), nasals, liquids.

**Syllabic** (syll): syllabic nuleus. All vowels are [+ syll]; in general, only vowels are [+ syll]; in many Bantu languages, preconsonantal word-initial nasals are also [+ syll]

(**preconsonantal** means 'immediately preceding a consonant) and word-initial (i.e. beginning a word) nasals are also + syll as in

(BEMBA)

(a) nga [ŋga] 'if'
(b) ńga [ŋga] 'what about ...?'

( Both words are made of two syllables, n- and –ga; that n- is a syllable is shown by the fact that it has a tone because only syllabic nuclei are tone-bearing units (TBUs).

**Continuant** (cont): the airstream can keep flowing; [+ cont]: all vowels, glides, liquids (= l – and r – sounds) and fricatives; all the other sounds are [- cont] (**continuant** can be replaced by **interrrupted** (inter) but [+ inter] = [-cont] and [- inter] = [+ cont]);

**Delayed release** (del): gradual release (i.e. movement of speech organs away from a point of articulation (Crystal, D. (1992) **A Dictionary of Linguistics and Phonetics**, p. 297); normally all and only affricates are [+ del];

**Anterior** (ant): the interference with the airstream takes place in front of the palato-alveolar area (note that for a sound to be [+ ant], it must meet the following two conditions: (a) to be a consonant and (b) to be produced in front of the palato-alveolar area; [+ ant]: only bilabials, labio-dentals, dentals and alveolars.

**Back:** the body of the tongue moves backwards; [+ back]: back vowels (e.g. **u** and **o**), back glide (w), velars and uvulars;

**Coronal** (cor): the blade of the tongue is raised above the neutral position, the neutral position being the position of the tongue when you are not speaking; [+ cor]: dentals, alveolars, postalveolars, palatals; it has been argued recently that front vowels are also [+cor] (see, e.g. Hume, Elizabeth (1992) Front Vowels, Coronal Consonants and their Interaction in Nonlinear Phonology, Ph. D. dissertation, Ithaca, NY, Cornell University);

**High** (different from **high tone** (H): the body of the tongue is raised above the neutral position; [+ high]: postalveolars, palatals, velars, vowels such as [i] and [u] are [+ high] but some vowels are both [+ high] in the sense that the body of the tongue is raised above the neutral position (as defined above and not as defined, e.g., by Sloat et al. (1978: 84) as 'approximately the position at which the vowel of the English word **bed** is articulated') and [+ mid], i.e., produced with a raising of the tongue above the neutral position but a raising which is not maximal (such vowels include e and o)

**Low** (different from **low tone** (L): the body of the tongue is lowered below the neutral position; the commonest: [+low] sounds are: [a], [æ], [ɦ] and [ɦ].

**Mid** (different from **mid tone** (M): the body of the tongue is moderately raised above the neutral position; this feature is positively used (+) only for certain vowels, the so-called mid vowels.

**Rounded** (round or rd): production with lip rounding; this feature is positively specified for certain vowels and glides only; the commonest [+ round] sounds are: [u], [o], [ɔ], [w];

**Nasal** (nas): part of the air escapes through the nose; [+ nas] : all nasals and nasalized vowels (nasalization is shown by the tilde, ~ , as in [ã] );

**Strident** (stri): friction is clearly perceived (due to high intensity and predominance of high frequencies in certain fricatives and certain affricates); examples of [+ stri] sounds:
[f], [v], [s], [z] ,[ts], [dz], [ʃ], [z], [tʂ], [dʒ].

**Voice** (vce): vibration of the vocal cords; note that all vowels, glides, nasals, liquids
(= l – and r – sounds) are [+ vce].

## 8.2 MATRIX

A table like the one below is called a **matrix** (plural: matrices):

| | i | e | a | o | u | p | b | t | d | k | g | ß | f | v | s | z | ʃ | ʒ | tʃ | m | n | ɲ | ń | l | j | w |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Voc | + | + | + | + | + | - | - | - | - | - | - | - | - | - | - | - | - | - | - | + | + | + | + | + | + | - |
| Cons | - | - | - | - | - | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | - | - |
| Cont | + | + | + | + | + | - | - | - | - | - | - | + | + | + | + | + | + | + | + | - | - | - | - | - | + | + | + |
| Ant | - | - | - | - | - | + | + | + | + | - | - | + | + | + | + | + | - | - | - | + | + | - | - | + | - | - |
| Back | - | - | - | + | + | - | - | - | - | + | + | - | - | - | - | - | - | - | - | - | - | + | - | - | + |
| Cor | + | + | - | - | - | - | - | + | + | - | - | - | - | - | + | + | + | + | + | - | + | + | - | + | + | - |
| High | + | + | - | + | + | - | - | - | - | + | + | - | - | - | - | - | + | + | + | - | - | + | + | - | + | + |
| Mid | - | + | - | + | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Low | - | - | + | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Del | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | + | - | - | - | - | - | - | - |
| Nas | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | + | + | + | + | - | - | - |
| Stri | - | - | - | - | - | - | - | - | - | - | - | - | + | + | + | + | + | + | + | - | - | - | - | - | - | - |
| vce | + | + | + | + | + | - | + | - | + | - | + | + | - | + | - | + | - | + | - | + | + | + | + | + | + | + |

When referring to one segment, all the features, together with their value specifications (i.e. + or -), are given in one pair of square brackets. For instance, according to the above matrix /a/ is represented either as in (1a) or as in (1b):

1. (a) [+ voc, - cons, + cont, - ant, - back, - cor, -high, - mid, + low, - del, - nas, stri, +vce]

(b)
$$\begin{bmatrix} + & \text{voc} \\ - & \text{cons} \\ + & \text{cont} \\ - & \text{ant} \\ - & \text{back} \\ - & \text{cor} \\ - & \text{high} \\ - & \text{mid} \\ + & \text{low} \\ - & \text{del} \\ - & \text{nas} \\ - & \text{stri} \\ + & \text{vce} \end{bmatrix}$$

It is worth noting that in **rules** it is the system illustrated in (7b) which is used. It is also important to note that voc and cons are given first and vce is given last.

## 8.3 REDUNDANCY

To understand what is meant by redundancy in phonology, let us take the following example. Suppose that there are two Bandas, **Remmy Banda** and **Gift Banda** and that there is only one **Remmy** (i.e Remmy Banda). To recall Banda it is **not necessary** to say,'**Remmy Banda**' but, since Remmy Banda is the only 'Remmy, it will suffice to say 'Remmy!' What is not necessary (in this case 'Banda') is said to be **redundant**. Note that 'Remmy' is not redundant (i.e. unnecessary) since if I shouted 'Banda' only, it would be both Bandas. Likewise, since in the above matrix the sound [a] is the only sound which is [+ low], to refer to a it is sufficient to use only [+ low]: all the other features in (1b) above are redundant.

A **minimal description** of a segment is the smallest set of features which distinguishes that segment from any other segment in the language concerned. Thus, + low is the minimal description of [a] in the above matrix. Similarly, the minimal description of [w] in the same matrix $\begin{bmatrix} - \text{ voc} \\ - \text{ cos} \\ + \text{ back} \end{bmatrix}$ also written [- voc, - cons + back], (except in rules).

If we extract all redundacies from the matrix in 8.2, the result is the following matrix with minimal descriptions:

| | i | e | a | O | u | p | b | T | d | k | g | ß | f | v | s | z | ʃ | ʒ | ʧ | m | n | | ŋ | l | j | w |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Voc | + | | | | + | | | | | | | | | | | | | | | | | | | + | - | - |
| Cons | - | | | | - | | | | | | | | | | | | | | | | | | | + | - | - |
| Cont | | | | | | - | - | - | - | - | - | - | | | | | | | | | | | | | | |
| Ant | | | | | | + | + | + | + | | | + | + | + | + | + | - | - | | + | + | - | | | | |
| Back | - | - | | + | + | | | | | + | + | | | | | | | | | | | - | + | | - | + |
| Cor | | | | | | - | - | + | + | | | | - | - | + | + | | | | - | + | | | | | |
| High | + | | | | + | | | | | | | | | | | | | | | | | | | | | |
| mid | | + | | + | | | | | | | | | | | | | | | | | | | | | | |
| Low | | | + | | | | | | | | | | | | | | | | | | | | | | | |
| Del | | | | | | | | | | | | | | | | | | | + | | | | | | | |
| Nas | | | | | | | - | | - | | - | | | | | | | | | + | + | + | + | - | | |
| Stri | | | | | | | | | | | | - | + | + | + | + | + | + | | | | | | | | |
| Vce | | | | | | - | + | - | + | - | + | | - | + | - | + | - | + | | | | | | | | |

Note that it is possible to have two or more minimal descriptions for the same segment. Also note that just as in describing the entire phonemic system of a language one must choose the smallest number of features possible, in describing, or referring to, a given segment one must use the smallest number of features possible (as in the matrix just above).

## 8.4. THE FORMULATION OF RULES

### 8.4.1 General

Features Phonology is also called Generative Phonology. The model followed here is the one developed by N. Chomsky and M. Halle in **sound pattern of English**. In referring to segments, you must use minimal descriptions, as explained in 8.3.

**The various forms of rules**

Phonological rules are of the following general forms;

8. (a) A → B/ ----- C
(= "A is transformed into B when preceding C", i.e. AC becomes BC)

(b) A → B/C -----
(= "A is transformed into B when following C", i.e. CA becomes CB)

(c) A → B/C ------D
(= " Between C and D, A is transformed into B", i.e. CAD becomes CBD)

### 8.4.2 Terminology

In the **rule schemata** (= forms of rules), the following parts are distinguished:

(a) A is the **input**, **structural description** (SD), or **structural index** (SI), i.e: what is going to undergo the change (= rule);

(b) B is the **output,** or **structural change** (SC), i.e. the result of the application of the rule; and

(c) / is the **environment**, in which:

i. C (in (8a) and (8b)) or C and D (in (8C)) is the **determinant** i.e. the factor which induces (= causes) the change; and

ii. The line ---- is the **underscore**, indicating where in the environment the input (i.e. the form undergoing the change) is situated.

As examples, see how the rule schemata in (8) above are read.

As examples, see how the rule schemata in (8) above are read.

### 8.4.3 Some Notational Devices

#### 4.3.1 The null sign: Ø

The rule t → Ø /k – says that 'After k, t is deleted' (i.e. kt becomes k): the rule t --→ Ø/ ---k says that 'Before k t is deleted (i.e. tk becomes k; the rule t ---- Ø/k --- s says that 'Between **k** and **s**, **t** is deleted (i.e. kts becomes ks). Thus, when the 'null sign.' Ø, **is to the right of the arrow** (see rule schemata below), it denotes **deletion** and when it is **to the left of the arrow**, it denotes **insertion:**

a. A ⟶ Ø (DELETION: 'A is deleted')

b. Ø ⟶ A (INSERTION: 'A is inserted')

#### 4.3.2 Boundaries or junctures

Boundaries, or junctures, are signs which indicate the beginning and end of a morpheme, word, phrase, sentence, syllable, etc., such signs are important because there are rules which apply, for example, when the input is in word-initial position, in word-final position, etc. For instance, in Dutch, in word-final position, **b,d,v** and **z** devoice: i.e. they become **p, t, f,** and **s,** respectively, in the pronunciation (also in spelling for **v** and **z** (Van Mulders 1945: 17):

In this course, we shall use only the following signs; ≠, for word boundary, and ≠≠, for sentence boundary (our ≠ corresponds to the traditional # although the latter is not only used to refer to the word boundary; see Durand 1990: 168-169).

### 8.4.3 Types of Phonological Rules

Phonological rules can be grouped into five categories, namely:

(a) deletion rules,
(b) insertion rules
(c) metathesis rules
(d) coalescence rules
(e) feature-changing rules

### 4.4.1 Deletion rules

These are rules which drop something,

e.g. (BEMBA) a. umuntu 'person'

b. tee umuntu → tee muntu 'it is not a person'

Alternative terms for 'deletion': loss, reduction, truncation.

If we ignore the environment, deletion rules are of the form
A ⟶ Ø

Types of deletion: **aphaeresis** (pronounced æ 'fierasis') – deletion at the beginning of a word, **apocope** = deletion from the end of a word, **syncope** = deletion from somewhere within the word. Thus, the loss of u in (b) is an instance of aphaeresis.

### 4.4.2 Insertion rules

Insertion rules create new elements (Ø⟶A). This process is very common in loanwords when the source language and the receiving language have different combinations of consonants, or when the receiving language does not allow closed syllables while the source language does, as exemplified in:

e.g. ENGLISH: spoon spu:n ----→ supuuni: BEMBA

Depending on the position of the inserted element of a word, insertion is called **Prothesis** (pronounced 'prðθisis' or 'proθesis') (WORD=INITIALLY),anaptyxis) (pronounced ə'naeptiksis or ə'næpteksis) or epenthesis (pronounced I'penθisis or I'penθe sis) (= WORD-MEDIALLY) or paragoge (pronounced pæra'gəudzi) (=WORD-FINALLY). Note, however, that some authors have used thc term epenthesis to refer to any type of vowel deletion.

Note the adjectives prothetic (e.g. prothetic vowel), anaptyctic (e.g. anaptyctic vowel), epenthetic (e.g. epenthetic vowel) and paragogic (e.g. paragogic vowel).

### 4.4.3 Metathesis

Metathesis or permutation, rules describe the reshuffling of elements, as in:

ENGLISH; Shovel ⟶ (BEMBA) Foshoolo

General form: AB ⟶ BA

### 4.4.4 Coalescence rules

Coalescene is the combination, or fusion, of two or more segments into one segment. For instance, below, we have the following cases of coalescence: a+i = ee (i.e. a and i in that order coalensce into ee), a+u = oo.

(BEMBA) a. ukushita ifitabo ⟶ ukushitee fitabo 'to buy books'

b. ukumona umuntu ⟶ ukumonoo muntu 'to see somebody'

### 4.4.5 Feature-changing rules

Most phonological rules are feature-changing rules. What a feature-changing rule does is change the value specification of a **phonetic feature** from + to – or from – to +. Consider, for instance, the following statement: "In English the voiceless consonants /p t k/ are realized by [$p^h$], [$t^h$] and [$k^h$], respectively, when they are in syllable-initial position". In this statement, the change is that something which is – ASP (- aspirated) becomes +ASP. Informally, this can be formulated as follows:

a. /p/ ⟶ [$p^h$]/. ( e.g. repaint ⟶ [ri'$p^h$eint])

b. /t/ ⟶ [$t^h$]/ . (e.g retake ⟶ [ri`$t^h$eik])

c. /k/ ⟶ [$k^h$]/ . (e.g cake ⟶ [$k^h$eik]

where . means 'syllable boundary'.

Formally, the above statement corresponds to the following rule:
Special types of feature-changing rules include (a) **assimilation**, or **harmony**, rules and (b) **dissimilation** rules.

An **assimilation**, or harmony rule is a rule which makes a phoneme identical to another (= **total assimilation**) or more similar to (i.e. less different form) another. Consider, for instance, the words **pin**, **man** and **mum** as pronounced in American English;

a. bit [bit]

b. pin [$p^h\tilde{i}n$]

c. back [bæk]

d. man [$m\tilde{æ}n$

e. but [b$\tilde{\Lambda}$t]

f. mum [m$\tilde{\Lambda}$m]

We see that in American English, vowels become nasalized when immediately preceding a nasal. This means that the feature [+ nas] (nasal) **spreads** to a preceding vowel. This is **formalized** as follows:

$$\begin{bmatrix} + \text{ voc} \\ - \text{ cons} \end{bmatrix} \longrightarrow [+ \text{ nas}] / \text{ ---- } [+ \text{ nas}]$$

(= Before a segment with the feature [+ nas], i.e. a nasal, a vowel is nasalized).

If a phoneme is **assimilated by a preceding** phoneme, the process is termed **progressive assimilation.** If a phoneme is **assimilated by a following phoneme**, the process is termed **regressive,** or **anticipatory, assimilation**, as the rule above.

Dissimilation rules are the opposite of assimilation, or harmony, rules. Dissimilation is the process whereby a phoneme becomes more different from another phoneme under the influence of it.

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## REVISION QUESTIONS

1. Define the following phonetic features and say which kind(s) of sounds are + and which ones are - : vocalic, consonantal, sonorant, syllabic, continuant, delayed release, anterior, back, coronal, high, low, mid, rounded, nasal, strident, voice.

2. Put + or – where appropriate in the following matrix:

| | O | j | p | b | t | d | e | m | s | k |
|---|---|---|---|---|---|---|---|---|---|---|
| Voc | | | | | | | | | | |
| Cons | | | | | | | | | | |
| Son | | | | | | | | | | |
| Cont | | | | | | | | | | |
| Ant | | | | | | | | | | |
| Back | | | | | | | | | | |
| Cor | | | | | | | | | | |
| High | | | | | | | | | | |
| Low | | | | | | | | | | |
| Mid | | | | | | | | | | |
| Del | | | | | | | | | | |
| Nas | | | | | | | | | | |
| Stri | | | | | | | | | | |
| Vce | | | | | | | | | | |

3. With one example, explain the concept of redundancy.

4. Write in words the following rules;

   (a) /l/ --→ [d] /[+nasal] _____

   (b) [- cont] -→ [- voice] /_____ # (where # means word boundary)

5. Explain the following:

   (a) structural description

   (b) structural change

6. Name and explain any four different types of phonological rules.

7. Exemplify:

   (a) deletion rule

   (b) insertion rule

   (c) metathesis

   (d) coalescence

   (e) feature-changing rule

8. Write brief notes on:

   (a) assimilation

   (b) dissimilation

# UNIT SIX

# INTRODUCING MORPHOLOGY: THE WORD

## 6.0 GENERAL

Morphology and traditional syntax are concerned with words since **morphology** can be defined as the study of the internal structure, forms and classes of words (Hartmann and Stock 1972: 146) and **syntax** as the sudy of the arrangement of words in sentences and of the means by which such relationships are shown (Hartmann and Stork 1972: 231). We therefore, begin this unit devoted to morphology with a lecture on the concept of word.

## 6.1 DEFINING THE WORD

According to Hartmann and Stork (1972: 256), "All native speakers of a language seem to have intuitive idea of what is meant by the term 'word' in its general sense, whether they write the language or not." Hartmann and Stork (p. 256 also rightly point out that as a linguistic unit the word is more difficult to define and for many writing systems "a written word can be defined as a sequence of letters which occurs between spaces." In his discussion of the concept of word, Crystal (1987: 91) writes that "Linguists have spent a great deal of time trying to devise satisfactory criteria (for identifying words) – none of which is entirely successful."

One of the most famous definitions of the word is that of the American linguist Leonard Bloomfield (1933: 178). Bloomfield defines the word as a **minimum free form**, i.e. a form which can be used alone. This definition is not entirely successfully since, as pointed out by Hartmann and Stork (1972: 256), the and a and some other 'words' in English cannot be used alone.

## 6.2 WORD, WORD-FORM AND LEXEME

Baver (1983: 11-12) shows that the term 'word' can mean either **word-form** or **lexeme**. Baver explains the terms 'word-form' and 'lexeme' as follows

> "Consider the unlikely case of a speaker of English coming across a sentence like. **This hunter shoots big game** and not understanding the verb. Under these circumstances, he might look it up in a dictionary. But he would not look up **shoots**; he would look up the form shoot, under the entry for **shoot,** he would expect to find all the information necessary for the interpretation of not only **shoot** but also **shoots, shooting** and **shot** (--). When the 'word' "shoots"; is talked about (- - - ), it refers not to a

entry for **shoot,** he would expect to find all the information necessary for the interpretation of not only **shoot** but also **shoots, shooting** and **shot** (--). When the 'word' "shoots"; is talked about (- - -), it refers not to a particular shape that a word has on a particular occasion, but to all the possible shapes that the word can have. For this sense the term **lexeme** will be used. The 'words' **shoot**, **shoots**, shooting and **shot** are all subsumed under the lexeme "shoot" (- - - ) when it is not the lexeme that is under consideration, but the particular shape that a word has on a particular occasion, the term **word-form** is used (- - -). The **citation form** of a lexeme is the word-form (- - -) of the lexeme which is used when a lexeme is entered in a standard dictionary; thus the citation form of the English lexeme discussed in the last paragraph is **shoot,** and not **shot, shoots**, or **shooting."**

## 6.3 GRAMMATICAL WORD

Consider the word-form **shot** mentioned above. This word-form is either a form called simple past (as in **He shot a monkey**) or a form called **Past Participle** (as in **He has shot a monkey**). Therefore, "it can be said that the word-form **shot** represents two grammatical words" (Baver, 1983: 13)

## 6.4 CLASSIFYING WORDS

### 4.1 Word Classes

The words of a language belong to one of several classes, or **parts of speech** as they are traditionally called, such as **nouns, adjectives, verbs**, etc. Traditionally, most definitions of parts of speech are **notional definitions (= semantic definitions)**, that is definitions based on meaning. Thus, we find traditional definitions such as:

(a) a noun is a word naming a person, a thing or a concept. (in short: a noun is a naming word).

(b) a verb is a doing word

(c) an adjective is a word which qualifies or describe a noun

Such notional definitions are inadequate. For instance, become is a verb but not a doing word. Similarly, such definitions cannot be used to identify destruction as a noun in phrases like the professor's destruction of the manuscripts since in this phrase 'destruction' both denotes an action and names a concept.

categories such as number, aspect, person, tense mood and voice" (number = singular or plural, person= 1st person, 2nd person, 3rd person, tense=present, past, future, aspect =, for example, progressive (as in I am reading), mood =, for example, indicative (as in I am reading) and imperative (as in Read this book), Voice = positive or passive). Quirk and Greenbaum (1972: 180 list the following parts of speech for English:

1. (a) **noun** e.g. road, trousers, hat, body

**adjective**, e.g. white sad, ugly

**adverb**, e.g. now, here, angrily, suddenly, intelligently

**verb** e.g. write, sing, sleep

(b) **article**: the, a(n)

**pronoun,** e.g. he, himself, anybody, which

**preposition**, e.g. of, with, at, without, in spite of

**conjunction**, e.g. and, when, although, it

**interjection,** e.g. oh, ah, uh

It is important to note that linguists do not always agree on the list of parts of speech for the same language or on the definition of terms such as 'adjective' and 'pronoun'. For example, in traditional grammar, the term 'adjective' does not apply only to such words as 'beautiful', 'white' or 'sad' but also to words like

(a) 'this'or 'that' in, for instance, this **book/that book**;

(b) my, your and

(c) 'some' 'any', 'every', 'each'

The words such as those exemplified in (a) are traditionally referred to as **demonstrative adjectives** and words like those in (b) are traditionally known as **possessive adjectives**. Words like those in (c) are called, traditionally, **indefinite adjectives**. Similarly, 'pronoun' does not only apply to words such as 'I', 'me', 'you' or 'themselves'. Such words are traditionally referred to as **personal pronouns**. Traditionally, the term 'pronoun' also applies to words like 'mine', 'yours', 'his', referred to as **possessive pronouns**. to words like 'that' or 'those' in sentences like **that is fantastic; those are mine** (= **demonstrative** pronouns).

The category 'pronoun' in traditional grammar also comprises the so-called **relative pronouns**, for example 'which' and 'who' in **the bag which he made/the student who got** the **prize**, and among others, the so-called **indefinite pronouns.**

The distinction between 'adjective' and 'pronoun' also applies, traditionally, to **numerals** (i.e. counting words such as 'one', 'two', etc, and naming words such as 'first', 'second', etc. Whether a demonstrative word, a possessive word or an 'indefinite' word is referred to 'traditionally' as an adjective or a pronoun depends on whether or not the noun it determines is expressed: if the noun it determines is expressed, the word is an adjective; if not, it is a pronoun.

**Examples:**

(a) (i) **This** book. (= demonstrative adjective)

(ii) **This** is nice. (= demonstrative pronoun)

(b) (i) My book is lost (= possessive adjective)

(ii) **Mine** is lost (= possessive pronoun)

(c) (i) **Some** students were late. (= indefinite adjective)

(ii) **Some** were late. (= indefinite pronoun)

Similarly, 'which' is a **relative pronoun** in '**the window which is broken'** and **relative adjective** in '**in which case you must come and see me.**'

Nowadays, possessive adjectives and possessive pronouns are also referred to as **the first possessive forms of personal pronouns** and **the second possessive forms of personal pronouns**, respectively.

## 4.2 Traditional definitions of parts of speech

We have pointed out earlier that traditional definitions of word classes, or parts of speech, are unsatisfactory. However, they constitute a good beginning in the study of grammar. Consider the following definitions:

a/ A noun is a part of speech naming a person (e.g. 'child', 'uncle', 'professor'), a thing (e.g. Cake', 'water', 'ball') or concept (e.g. 'ugliness', 'luxury', 'fact', 'manhood').

b/ An adjective is a part of speech describing or qualify a noun (e.g. 'tall', 'happy', 'pretty', 'fanciful')

c/ An adverb is a part of speech describing or qualifying a verb (e.g. 'slowly' in 'The man walked slowly towards his child'), an adjective (e.g. 'very' in 'She is very intelligent') or another adverb (e.g. 'very' in 'The man walked very slowly towards his child').

d/ A verb is a part of speech traditionally defined as 'doing word' (e.g. 'arrive', 'go', 'come', 'eat', 'write',). Note that this definition is unsatisfactory for the following reasons, among other:
i/ many verbs do not express any action (e.g. 'be', 'become', 'look in 'she looks tired'):
ii/ actions are not always expressed by verbs (e.g. the word. The 'destruction'of mosques by serbs 'express an action but is a noun).

e/ An article is a word used before a noun to modify it or limit its meaning. Mainly to signal whether the noun is taken in a definite way (= definite article: the in English) or in an indefinite way (= indefinite article: a (n) in English.

f/ A pronoun is a part of speech which can be used instead of a noun or noun phrase (e.g. 'he' is a pronoun because it can replace, for instance, 'the student was furious'.

g/ A preposition is a part of speech used together with a noun or noun phrase to indicate some relationship that exists between the noun or noun phrase with another word or phrase (e.g. 'of' in 'the father of the thief' or 'with' in 'Come with me').

h/ A conjunction is a part of speech used to link together words (e.g. 'and') or clauses (e.g. 'when', 'if', 'because').

i/ An interjection is a part of speech used in exclamation.

### 4.3 Closed-system words and open-system words

> The parts of speech in (1a) (i.e. noun, adjective, adverb and verb are called open – system words while those in (1b) (i.e. article, pronoun, preposition, conjunction and interjection) are called closed –system words (Quick and Greenbaum 1973: 19).

In a closed system, the sets of items cannot normally be extended by the creation of additional members while in an open system the sets of items can be extended. For example the borrowing of nouns from another language can be done at any time while borrowing items such as articles and pronouns does not happen or, if it does, it takes a long period of time.

In language, items belonging to the open system are said to have full lexical meaning, i.e. an independent meaning, while most of items belonging to the closed system are said not to have full lexical meaning, i.e. their meaning is fully Independent as they just contribute to the grammatical meaning of a construction, e.g. the, but (Hartmann and Stork 1972: 51). For this the closed- system words are called function words and the open-closed words are called content words.

## 6.5 SUMMARY AND FINAL OBSERVATIONS

Native speakers of a language have an intuitive knowledge of what a word is although there is no agreed upon definition of the word. (Intuition is the power of understanding or knowing something without reasoning or prior learning).

As the term 'word' itself, it can refer to, among others, a word-form or a lexeme. (= dictionary entry).

There exists a traditional list of 'parts of speech', i.e. word classes such as noun, verb, adjective, etc. This classification is based on the Greek and Latin traditions. The classification is not entirely satisfactory because it is based on notional, or semantic, definitions. Furthermore, some parts of speech are not universal. For instance, there are no articles in Bantu languages. It is also important to note that There is not always a one-to-one correspondence among languages. Thus the English adjective naked is not translated by an adjective in Bemba but by a noun, ubwamba 'nakedness' (cf. Umwaice ali ubwamba 'the child is naked', literally 'the child is nakedness).

## 6.6 SOME BASIC CONCEPTS IN MORPHOLOGY

### 6.1 What is Morphology?

Morphology is a level of linguistics analysis which is concerned with the internal structure of words from a semantic point of view, i.e. as far as meaning is concerned. In this definition, the term meaning is used in a broad sense. For example, the English verbal lexeme work has the following word-forms: **work, works** (in e.g., he works), **working** and **worked** and from the same lexeme, is formed another lexeme WORKER. The word-forms 'works', 'working' and 'worked' and the lexeme WORKER are structured as follows:

1. a. work + s
   b. work + ing
   c. work + ed
   d. work + er

Similarly, the Nyanja words **munthu** 'person', **anthu** 'people', **mwana** 'child', **mkazi** 'woman' and **akazi** 'women' are morphologically analyzed as in (2), below:

2. a. mu + nthu
   b. a + nthu
   c. mw + ana
   d. m + kazi
   e. a + kazi

The elements **work**, **s, ing**, **ed** and **er** in (1) and the elements **mu, nthu, a mw, ana**, m and **kazi** in (2) are called **morphs** are meaningful (i.e. they express some meaning). In (1) **work** denotes the concept of working, **s** means 'present simple 3rd person singular', **ing** means 'present participle', **ed** means either 'past simple' or past participle and **er** means 'agent' (i.e. 'one who ---' and in (2) **mu, mw** and **m** mean 'singular', **a** means 'plural', **nthu** means 'person' **ana** 'child' and **kazi** 'woman'.

Meanings such as 'singular', 'plural', 'present tense', 'participle', etc are termed grammatical meaning as opposed to 'concept of working', 'child', 'person' or woman are called **lexical-meanings**.

How do we know that **working** in (1) and **munthu** in (2) are made of **work** and **ing** and of **mu** and **nthu**, respectively? We know that **working** is made of two morphs, **work** and **ing**, by comparing it to other forms in (1). In (1) we see that each form contains the element **work** whose meaning is shared by all the forms. We say that the forms in (1) are morphosemantically similar, i.e. they are similar (but **not** identical) both in form and in meaning. If, say, I replace **ing** by **ed**, I get a different meaning. This operation consisting in replacing an item within a lager unit by another is known as **commutation**. It is used in morphlogy to identify morphs and in phonology to identity phonemes (e.g. I know that **b** and **p** in English are phonemes by looking at pairs of words such as **bit** and **pit).**

Similarly in (2) I know that **munthu** is to be analyzed into **mu** and **nthu** because of **anthu** which is a plural form obtained by replacing **mu** by **a**.

## 6.2. Morphemics

A morphological study may be either **diachronic** (or **historical**) or **synchronic**. It is diachronic if it is concerned with how the internal structures of words have changed in the historical development of a language and it is synchronic if it is concerned with the internal structures of words at a given time in the historical development of a language. **Morphemics** simply means 'synchronic morphology'.

## 6.3 Inflection and Derivation

Traditionally morphology is divided into **inflectional morphology** and **derivational morphology**, which crystal (1987: 90) has defined as follows:

a. "**Inflectional morphology** studies the way in which words vary (or 'inflect') in order to express grammatical contrasts, such as singular/plural or past/present tense."

b. "**Derivational morphology,** however, studies the principles governing the contruction of new words, without reference to the specific grammatical role a word might play in a sentence. In the formation of **drinkable** from **drink**, or **disinfect** from **infect**, for example, we see the formation of different words, with their own grammatical properties."

## 6.4 Morpheme and Allomorph

In section I in this lecture I refer to meaningful elements which make up words as **morphs.** However, after breaking down words into morphs, the linguist must answer the following question:

> **Isn't possible to consider that two or more morphs which have the same meaning are in fact manifestations of the same element, the occurrence of each shape being dependent upon some specific environment?**

If two or more morphs have the same meaning, and are similar in form and the occurrence of a particular morph is predictable from the context, they are grouped into one **abstract** morph called **morpheme** and each morph represented by the morpheme is called an **allomorph**, which is defined as "A non-distinctive variant of a morpheme" (Hartmann and Stock 1972: 10). In the Nyanja examples in (2), above, **mu, mw** and m are similar in form and they all mean 'singular'. They are allomorphs of the same morpheme, say mu, and the choice of a particular allomorph is determined by a rule, which may be informally formulated as in (3):

3. a. mu --→ mu before one syllable on condition that the syllable begins with a consonant (cf. mu + nthu --→ munthu).

   b. mu -→ m before more than one syllable on condition that it is followed by a consonant (cf. mu + kazi → mkazi)

   c. mu --→ mw before a vowel (cf. mu + ana -→ mwana)

There are 'exceptions' to (3c), but we won't discuss them here Because they are not relevant to the discussion.

After grouping morphs which have similar form and identical meaning into morphemes, the linguist also refers to each of those morphs which are not allomorphs of any morpheme as a **morpheme**. For instance, the morphs **nthu** 'person', **ana** 'child' and **kazi** 'woman', above, cannot be grouped with any other morph into a **morpheme**. However, each of such morphs is said to be the only manifestation of a morpheme (an abstract unit) whose form is identical.

## 6.5 Morphonology

Morphonology is the study of phonological variations which occur when morphemes are combined to form words. For example the change of u to w in Nyanja **mw + ana** (mwana) is a morphonological phenomenon. Similarly, the

changing of the fusion of a + I 'to e in Bemba **a + ma + inshi** (amenshi) 'water' is a morphonological phenomenon. The phonemes that compose morphemes prior to the application of morphonological rules are also called **morphophonemes.** For example, in **mwana** 'child' the morphophonemes are m, u, a, n and a.

**Morphophonemics** is an altenative term for **synchronic morphonology** and **morpheme alternant** is an alternative term for allomorph.

## 6.6 Classfying Morphemes

### 6.6.1 Free and bound morpheme

Consider the word-form **kicked** the morphemes **kick** and ed. The morpheme kick can be used on its own as a word, as in **kick now;** but **ed** in **kicked** cannot stand on its own as a word. Morphemes that can stand on their own as words are termed **free morphemes** and those, like ed, which cannot stand on their own as words are **bound morphemes**.

### 6.6.2 Lexical and grammatical morphemes

Lexical morphemes express lexical meanings and grammatical morphemes are those morphemes that express grammatical meanings. Thus **er** in words such as **worker** or **bomber** is a grammatical morphemes because it is a morpheme which is used to produce a word while **work** and **bomb** are lexical morphemes in that they have their own meanings, which are explained in dictionaries.

### 6.6.3 Derivational and inflectional morphemes

**A derivational morpheme** is a morpheme which is used to derive a word from another word, e.g. er which is used to derive nouns from verbs, e.g. **worker** from work or learner from **learn**. Similarly, i **in mulimi** 'farmer' (in many Bantu languages) is a derivational morpheme as it is used to form the word **mulimi** from - lim 'cultivate'. **Hood** is also a derivational morpheme in the English word **manhood** since it is used to form **manhood** from **man**.

**An inflectional morpheme** is a morpheme to express some grammatical contrast, such as singular/plural, present tense/past tense, masculine/feminine, progressive, etc. thus mu and a, in Nyanja munthu 'person' and **anthu** 'people', are inflectional morphemes.

Generally speaking, derivational morphemes are used to form new lexemes, while inflectional morphemes are used to form word-forms.

### 6.6.4 Root and affix

Consider the following set of words:

4. a. work
   b. works
   c. worked
   d. working
   e. worker
   f. workers

In each of the words in (4) we see the element (morpheme) **work**. This morpheme is a lexical morpheme while the morphemes s of **works, ed, ing er** and s of **workers** are grammatical morphemes (see 6.2. above). Lexical morphemes are referred to as **roots** while inflectional and derivational morphemes are referred to as **affixes**. A **root** may be defined as what remains when all the inflectional and derivational morphemes are removed from a word. What remains when **only** the inflectional morphemes are removed from a word is called the stem. For example, **worker** is a stem while **work** is a **root.**

That to which an affix is added is called the **base**. For example, in (4 a - e), above, **work** is a **base** while in (4f) the base is *worker*. In other words, a base, can either be a root or a stem.

### 6.6.5 Types of affixes

Affixes are traditionally grouped into **prefixes** and **suffixes** depenfing on whether the affix is added before the base or after the base. Thus **in unbelievable** (un + beliv + able), **un** is a prefix and able is a suffix. Likewise in workers (work + er + s) both er and s are suffixes.

Some languages also have **infixes**. In traditional terms, an infix is a morpheme which is inserted within another morpheme, e.g. n which is inserted in the Latin verbal root fig in, for instance, **fingere,** to shape/mould' or **fingo** 'I shape/moved' (cf, e.g e.g. fictus ←-- fig + tus 'shaped/moulded').

Compare to English, Bantu languages have by far more types of prefixes.

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## REVISION QUESTIONS

1. With examples explain the meaning of:
   (a) morph
   (b) morpheme
   (c) allomorph
2. Define the following
   (a) morphology
   (b) syntax
   (c) morphemics
   (d) morphophonology
   (e) morphonemics
   (f) morphoneme
3. Define and exemplify:
   (a) bound morpheme
   (b) free morpheme
4. Explain and exemplify:
   (a) lexical morpheme
   (b) grammatical morpheme

5. Explain and exemplify:

   (a) inflection

   (b) derivation

6. Explain and exemplify:

   (a) stem

   (b) root

   (c) base

7. Explain and exemplify:

   (a) prefix

   (b) suffix

8. Consider the following data from Luvale:

| | |
|---|---|
| Natumona | 'we'll see (today)' |
| Navamona | 'they'll see (today)' |
| Tunamono | 'we saw (today)' |
| Tunatete | 'we cut (today)' |
| Kuteta | 'to cut' |
| Kumona | 'to see' |

   (a) Identify the roots.

   (b) What is the difference between the future tense and the past tense?

   (c) What is the morpheme for 'they' and what is the morpheme for 'we'?

   (d) What is the morphological structures of the infinitives **(i.e. kuteta and kumona)?**

(d) What is the morphological structures of the infinitives **(i.e. kuteta and kumona)?**

## 7.0 MORPHOLOGICAL PROCESSES

Morphological processes are the various ways in which word-forms are built **(= inflection)** and lexemes are built (= **derivation** and **compounding**). In this lecture we shall discuss the following morphological processes, which are the most important: affixation, internal change, suppletion, zero modification, reduplication, compounding, stress shift and tone shift.

### 7.1 Affixation

This is a major process used in languages to build word-forms and to create new lexemes. It consists in joining an **affix** (mostly a **prefix** or a **suffix**) to a root or a stem. Affixation is called **prefixation**, **suffixation** or **infixation** depending on on the type of affix which is added (i.e. prefix, suffix and infix, respectively).

Inflectional affixation is exemplified in (1) and (2):

1. ENGLISH

(a) grenade
(b) grenades (suffixation)
(c) ox
(d) ox**en** (suffixation)
(e) kick
(f) kick**ed** (suffixation)
(g) kick**ing** (suffixation)

2. TUMBUKA

(a) galu 'dog'
(b) Ŵagalu 'dogs'
(c) - lim-verb root meaning 'to cultivate'
(d) **ku** – lim-**a** 'to cultivate' (infinitive)

(prefixation + suffixation)

3. NYANJA

(a) -lim- ---- verb root meaning 'to cultivate'

(b) **mu** – lim – **i** 'farmer' (= 'one who cultivates') (suffixation) and prefixation

(c) ka – lim – **idwe**, way of cultivating (suffixation)

## 7.2 Internal Change

This is the type of morphological process whereby the phonological shape of a word is changed, as illustrated in (4) and (5), below, for inflection and derivation, respectively:

4. INFLECTIONAL INTERNAL CHANGE

a. sing, **sang, sung**
b. get, **got**
c. mouse, **mice**
d. goose, **geese**

5. DERIVATIONAL INTERNAL CHANGE

Sing, song

Inflectional internal change is also called **ablaut, apophony** or **introflection**

## 7.3 Suppletion

Suppletion is a morphological process whereby a word-form is replaced by an entirely phonologically different wordform, as in:

6. (a) go -→ went
(b) be → am, are, is, were

Therefore, suppletion may be viewed as an extreme case of internal change.

## 7.4 Zero Modification

Zero modification is a morphological process whereby a word-form is created or a lexeme is created without changing or adding any phoneme or phonemes to the original word-form or lexeme, as in:

(a) sheep (singular) ----→ sheep (plural)

(b) voice (noun) ----→ voice (verb)

NOTE: In (7a), above, we may say that a 'zero morpheme' is added to the singular form to obtain the plural form:

sheep + ∅ -→ sheep

When there is a change in word class (e.g. from noun to verb, as in **bomb** (noun) --→ **bomb** (verb), the process is called **conversion.**

## 7.5 Reduplication

This is the doubling of a sequence of phonemes or just of one phoneme, e.g.

8. BEMBA: ukuseka 'to laugh' --→ ukusekaseka 'to laugh repeatedly'

9. LOZI: misima 'hole' ---→ misimasima 'many holes'

NOTE: Certain languages permit triplication (i.e. double repetition) e.g

10. BEMBA: ulya 'to eat' ---→ ukulyalyalya 'to eat frequently'

## 7.6. Compounding, (or composition)

This is a morphological process consisting in forming a new lexeme from two or more lexemes as illustrated below:

11. (a) blackboard (from **black** and board)

(b) machine – gun (from **machine** and **gun**)

## 7.6 Stress shift

In stress languages (i.e. languages, like English, where stress is integral part of a word), stress may be used as a derivational device or an inflectional device. This is called **stress shift**, as shown:

12. per**mit** (verb) --→ **per**mit

Where the stressed syllables are underlined. Stress is marked by the symbol ' before the stressed syllable, e.g.

**[pə ' mit]** (verb) **[' pɜ : mit]** (noun) (permit)

## 7.8 Tone Shift

Similarly, in tone languages, tone may be used for derivational or inflectional purposes, as illustrated in (13), below:

13. MAMBWE: u`mu`ntu 'a person' umu`ntu 'it is a person'
(` means 'high tone')

## REVISION QUESTIONS

1. Define and illustrate each of the following morphological processes:
   (a) prefixation
   (b) suffixation
   (c) internal change
   (d) suppletion
   (e) zero modification
   (f) reduplication
   (g) compounding
   (h) stress shift
   (i) tone shift

2. Give two examples of stress shift in English.
3. Give three alternative terms for internal change.
4. Give two examples of:
   (a) inflectional internal change
   (b) derivational change

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## REVISION QUESTIONS

1. How did L. Bloomfield define the word? Is this definition entirely satisfactory? Justify your answer.
2. With concrete, examples, explain the concepts of word-form, lexeme, citation form and grammatical word.

3. What criterion is used in traditional grammar to distinguish between adjectives and pronouns for possessives, demonstratives, indefinite words, relatives and numerals? Give examples.

4. Identify each 'part of speech' in the following sentence: according to traditional definitions of parts of speech: "EACH OF THESE THREE IMPORTANT ASPECTS OF LANGUAGE WILL BE DISCUSSED THOROUGHLY LATER"

# 9. THE SYLLABLE STRUCTURE

## 9.1. WHAT IS A SYLLABLE?

The term phonotactics refers to the way in which speech sounds combine in natural languages. It denotes either the system or the study of combinations of speech sounds. By way of illustration (p t k g) is not a possible sequence of sounds in English. Similarly, while the sequence (fl) occurs in English (e.g. in **flower**), it does not in Zambian languages. Another example of photactic constraint is the non-occurrence of (ts) word-initially in English.

The commonest topic in phonotactics is the **syllable structure** though the concept of syllable is not easy to define.

There are three major approaches to the concept of syllable. The following account of these approaches is based on Gimson. (1980: 56-57).

### (a) The Prominence Theory

According to this approach, the number of syllables in an utterance is equal to the number of sounds that are felt by native speakers as prominent or sonorous. The prominent sounds, generally the vowels, are the syllable **nuclei.** This theory cannot on its own provide an understanding of the concept of syllable since it does not tell us to which nucleus weaker sounds belong especially in languages like English which permit consonant clusters.

### (b) The Pulse Theory

This theory studies the syllable on the basis of muscle effort. Especially, it claims that the number of syllables equal to the number of chest pulses. It further claims that **chest pulses** correspond to the production of vowels and, for this reason, concludes that the syllable nuclei are the vowels, "consonantal sounds acting typically as the onset (releasing factor) and closure (arresting factor) of the syllable, while vowel sounds are nuclear to the syllable and render the chest pulse audible" (Gimson p. 56). One of the shortcomings of this theory is that in some sequences of vowels it is not clear whether there are more than one chest pulse.

Albeit the Prominence Theory and the Pulse Theory reach the similar conclusions in respect of the status of vowels and consonants, the latter is superior because chest pulses may be recorded by instruments.

### (c) The Linguistic Approach

This method is more efficient and easier than the previous one because it is based on the way speech sounds combine in languages. For example, in Zambian language any vowel can follow any consonant and words may be made of vowels only and each word has at least one vowel while no word is made of consonants only. This role played by vowels in the structure of words is a sufficient factor to consider vowels nuclear to the syllable.

An important fact in Zambian language is that no word ends in a consonant or semi-vowel. On the basis of this fact, we must conclude that in Zambian languages consonants and semi-vowels belong to the same syllable as the following vowel sound. The so-called **syllabic nasals** are the only exception.

It is interesting to note that when native speakers are asked to utter words very slowly, words are usually segmented into pieces which correspond to syllables linguistically defined, including syllabic nasals. In Zambia languages, syllabic nasals occur only word-initially before another cononant and are defined as a nasal which bears a **prosodic** feature. For example, in the two Bemba words **nga** 'if' **nga** what about ....?, the nasal has a low tone in the first word and a high tone in the second.

When a syllable ends in a **vowel,** it is said to be **open** and a syllable which does not end in a vowel is said to be closed. For example, in the English word **aback,** a, is an open syllable and back is a closed syllable.

## REFERENCES

GIMSON, A.A.C., (3rd edition, 1980). An Introduction to the Pronunciation of English. London: Edward Arnold (Publishers) ltd.

## QUESTIONS AND EXERCISES

1. What is phonotactics?
2. Explain and assess:
   a. the Prominence Theory of the syllable
   b. the Pulse Theory of the syllable
   c. the Linguistic Approach to the syllable
3. What an open syllable and what is a closed syllable? Give examples.