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English Phonetics and Phonology

A Handbook for Teachers and Students

With a student companion website and a desktop application

*/'ɪŋɡlɪʃ fə'netɪks ænd fə'nɒlədʒi
ə 'hændbʊk fɔː 'tɪxtʃəz ænd 'stjuːdənts*

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GENERAL INTRODUCTION

LEARNING OBJECTIVES

On completion of this chapter, students should be able to:

- ✓ *Define and explain the basic distinction between Phonetics and Phonology*
- ✓ *Distinguish between the three main branches of Phonetics*
- ✓ *Define and explain the basic distinction between Standard English in Great Britain and Standard English in the USA.*

This introductory section starts by defining and contrasting two basic concepts: Phonetics and Phonology. Then, it considers the three main branches of Phonetics and the kinds of pronunciation in both Great Britain and the United States of America.

PHONETICS AND PHONOLOGY – DEFINITION AND DISTINCTION

The words *Phonetics* and *Phonology* can be broken down into the root *phone* and the suffixes *-ics* and *-logy*. The root *phone* originates from the Greek word *phoneme* which means *sound*. Examples of words having such a root are: *telephone*, *gramophone*, and *Anglophone*. The suffix *-ics* means science as in *electronics*, *economics*, and *statistics*. Finally, the suffix *-logy* means *the study of*, as in *Biology*, *Geology*, and *Sociology*.

Defined simply, Phonetics is the scientific study of speech. It is the branch of linguistics concerned with noises made by human beings when they speak (called sounds) and whereby they express their thoughts. We use the term *speech sounds* or *phones* to describe these sounds. Phonetics describes how these speech sounds are produced, how they can be categorized, how they change according to circumstances.

Phonetics is composed of two major sub-branches: *segmental phonetics*, which studies individual sounds (that is segments of speech) and *suprasegmental phonetics* which deals with syllables, words, phrases and texts, that is larger units of speech.

As for Phonology (sometimes called *Phonemics*), it is the study of how speech sounds fall into patterns and how, for example, a sound may change depending on the sound which comes before or after that very sound. The scope of Phonology is the behaviour of speech sounds in a language. It seeks to account for how sounds are combined, organized, and how they convey meaning in particular languages.

Consequently, Phonetics is general whereas Phonology is specific. Each language has its own phonology and phonological rules. To put things differently, Phonology deals with how sounds behave when they come together to form words. When you say that in order to produce the sound at the beginning of the word '*nine*' air must go out of the nose, this is Phonetics and it is valid for all languages which have such a sound. But when you say that in English the sound represented by the letter < s > is never followed by the sound represented by the letter < b > and you cannot have words in English such as **sbin* or **asvert*¹, this is Phonology of English, as it may not be valid for other languages.

¹Asterisk indicates that a word is wrong or ill-formed.

Phonetics emerged as a distinct science in the nineteenth century and has many branches. The discipline concerned with the study of the correct pronunciation of a language is called *Orthoepy*. The scientific study and treatment of speech defects is called *Logopedics*. Finally, *Surdopedagogics* deals with teaching normal aural speech to deaf and dumb people.

THE MAIN BRANCHES OF PHONETICS

The branches of Phonetics are numerous and each one studies a specific aspect of human speech. There is a close connection between branches of Phonetics and Linguistics such as *Lexicology*, *Grammar*, and *Stylistics*. We have *General Phonetics*, *Articulatory Phonetics*, *Acoustic Phonetics*, *Auditory Phonetics*, *Experimental/Instrumental Phonetics*, *Descriptive Phonetics*, *Functional Phonetics*, *Physiological Phonetics*, *Applied phonetics*, *Historical (or diachronic) Phonetics*, *Special Phonetics*, and *Comparative Phonetics*. Among these branches, only three are widely recognized as being the most important. These are: *Articulatory*, *Auditory*, and *Acoustic Phonetics*.

Acoustic Phonetics

Acoustic Phonetics is related to Physics and it studies speech sounds as a phenomenon related to Physics. Sound travels in the form of vibrations through the air from the speaker to the listener. The scientific measurement of the sound waves generated when we speak is done by Acoustic Phonetics. For this reason, Acoustic Phonetics and Phonology require knowledge of Physics and Mathematics, as well as electronic equipment.

Auditory Phonetics

How sounds are perceived, heard and interpreted is the concern of Auditory Phonetics. Thus, it focuses on the hearing organs. It is concerned with how the brain decodes the sound waves to make of them meaningful units of speech. Such a branch is of most interest to psychologists as it deals primarily with the way people perceive speech sounds.

characteristic of all languages. These differences in pronunciation may be due to several reasons such as degree of education, age, sex, geographical location, social status, and many other variables. Furthermore, the same person may pronounce the same utterance in different ways, under different circumstances. English is no exception, especially that it is spoken in many countries all over the world and it is the mother tongue in many of them. It is the language of instruction and of administration (that is a second language) of several countries in Africa and Asia. All the countries of the world teach it as a foreign language. Being spread over all continents, it is bound to undergo changes in particular as regards pronunciation. A good question is then: amid such a wide variety of pronunciations, which of them should be adopted in teaching and learning foreign languages? The solution consists in adopting the standard speech. A standard of speech is usually defined as the type of language used by the educated people of the same district and approximately of the same age.

Standard English in Britain

Several types of Standard English are in use in Britain: *London Standard*, *Irish Standard*, *Northern Standard*, *Southern Standard*, *Scottish Standard*, etc. These standards share certain features and differ in certain others as each standard is influenced by the geographical area in which it is spoken. No matter how different these standards are, they remain completely intelligible throughout the country. As regards language teaching and learning, the type of pronunciation in use in the south of England, the Southern type, has been adopted as a standard. It is the standard studied as a foreign language at the European universities and used by a large number of institutions all over the world. Such a standard is also known under different names such as: *BBC English*, *Queen's English*, *Public School English*, *Educated Southern English* or *Standard Speech*. However, the most frequently used term is *RP* which stands for *Received Pronunciation*.

Received Pronunciation takes its origin from the 17th century and the prestige accent of the Court, During the First World War, Daniel Jones (1917) referred to it as *PSP (Public School Pronunciation)* because it was mostly used in Southern England by people who had attended the great public boarding-schools.

Gimson (1989:88) gives the following definition of RP:

"The type of speech which represents a number of types of speech used by educated people from different parts of the country, which has lost all easily noticeable local differences, and which may be considered most generally understood by the people of England is often called Received Pronunciation. Received meaning heard or received in the best circles."

Gimson (id.) distinguishes three types of RP:

- Conservative- spoken by the older generation
- General RP- mainly used by BBC announcers
- Advanced RP- mainly used by young upper-class people

In sum, RP is the type of English language accent spoken by educated people and which is understood all over the Great Britain. It is also the type of English which is taught as a foreign language all over the world.

A word of caution is necessary: Teachers and learners of English should be aware of the fact that this variety is far from being the only one that can be met in Britain. In English Language Teaching (ELT) either as a foreign or second language, RP competes with the varieties of English in use in The United States of America.

Standard English in the USA

In the USA, the situation is a bit different. The social dimension is present, but it is not as marked as it is in England. The standard language in use is the normal accent spoken both in formal and informal situations by the educated people. three types of American English exist. the first type is the form used in the east of America (*Eastern American*), the second type is used in the south (*Southern American*), and the third type is *General American* (abbreviated *GA* or *GenAm*). The latter is the type of pronunciation used by officials, TV announcers, newsreaders and commentators. This type of pronunciation is used in American textbooks and courses of English.

The General American (GA) and the British Received Pronunciation (RP) have some significant points of difference, for example, in General American (GA) the

sound represented by the letter < r > is pronounced in all positions of the word as in: *barber*, *rice*, and *fair*. This is called *rhotic* accent, whereas Received Pronunciation (RP) is *non-rhotic*. Rhotic speakers will pronounce the < r > in *stork*, whereas non-rhotic will not. In such a case, the words *stork* and *stalk* are pronounced in the same way without any difference. In a non-rhotic accent, the < r > is pronounced only when it is followed by a vowel as in: *role*, *raise*, *rise*, *rose*, *far away*, *etc.* Another noticeable difference is that in General American (GA) the sound represented by the letter < t > is not pronounced between the vowels as in *twenty*. A third difference is the sound at the beginning of the word *you* which is sometimes not pronounced as in: *student*, *duty*, *new* (as in *New York*). More differences will be discussed in Chapter 12.

POINTS TO BE RETAINED

Phonetics is the scientific study of speech. It describes how speech sounds are produced, how they can be categorized, and how they change according to circumstances.

Phonetics is divided into two major branches: segmental phonetics and suprasegmental phonetics. Segmental phonetics is concerned with segments of speech of individual sounds; suprasegmental phonetics is concerned with larger units of connected speech: syllables, words, phrases and texts.

On the other hand, phonology seeks to account for how sounds are combined, organized, and how they convey meaning in particular languages.

Three branches are widely recognized as being the most important branches of Phonetics: Acoustic Phonetics, Auditory Phonetics, and Articulatory Phonetics, the latter is by far the most common branch and is useful in particular to the foreign language teachers and learners.

As regards pronunciation, the Southern type of pronunciation has been adopted as a standard, is studied as a foreign language at the European universities, and is used by a large number of institutions all over the world. It is called *RP* which stands for *Received Pronunciation*. In the USA, Standard English is known as *General American*.(*GA*).



Activity 1. Tick as appropriate.

	<i>Phonetics</i>	<i>Phonology</i>	Statement
1	describes sound production.
2	describes sound perception.
3	describes how sounds affect each other.
4	says whether two sounds can occur next to each other or not.
5	explains for example why d+r when initial (as in drive) are pronounced like the initial sound in <i>judge</i> .
6	is specific to a language.
7	is not language specific.

CHECK ANSWERS



Activity 2. Match items from column A with those of column B as appropriate. One item from the left column may correspond to more than one item from the right one.

1	Acoustic phonetics	A	deals with the hearing organs.
2	Articulators	B	is the type of language used by the educated people of the same district and approximately of the same age.
3	Articulatory phonetics	C	are the parts of the mouth and throat which we move when speaking.
4	Auditory phonetics	D	is the study of speech sounds more or less from the point of view of Physics.
5	RP (Received Pronunciation)	E	is the scientific measurement of the sound waves.
6	Standard of speech	F	is the branch of most interest to psychologists.
		G	describes how speech sounds are made.
		H	is the type of educated pronunciation is the language of Southern English speakers.
		I	provides minute details about how the sounds are produced.
		J	is also known as BBC English.

Answers:

CHECK ANSWERS

1	2	3	4	5	6

Go online for more practice

CHAPTER ONE

HOW SPEECH SOUNDS ARE PRODUCED

LEARNING OBJECTIVES

On completion of this chapter, students should be able to:

- ✓ *Identify the organs of speech involved in the production of speech*
- ✓ *Describe the role of each organ of speech*
- ✓ *Describe how human speech sounds are produced*
- ✓ *Identify the different part of the tongue*

In this chapter, we will study the production of speech sounds from an articulatory point of view to understand better subsequent sections about human speech sounds. It should be recalled from the previous chapter that articulatory refers to the way sounds are produced. Consequently, this chapter provides a description of the speech production mechanism and the various organs involved in the production of speech sounds.

1.1. THE SPEECH CHAIN

Sound production starts in the lungs. The lungs work as the power supply in speech production as most sounds of all languages are made with an air stream getting out of the lungs known as *pulmonic egressive* air stream generated by the contraction of the diaphragm (Figure 1.1.). The term *egressive* means going outwards, and *pulmonic* refers to the lungs. The air stream going inwards is said *ingressive*.

However, in some cases the lungs are not involved at all as when we make the clicking noise often written *Tut-Tut* or *Tsk-Tsk*. Air which is expelled from the lungs goes up and passes through the pharynx and then the larynx on the way to the windpipe (trachea) commonly referred to as *Adam's apple*. After passing through the larynx, the air will undergo some changes while travelling upwards towards the mouth before it becomes a speech sound. The three cavities formed by the pharynx, the mouth, and the nose are known as the *resonating cavities*. We call *articulators* those parts of the vocal tract involved in the production of speech sounds.

The verb *articulate* is used to refer to the interaction of an articulator with another. For example, when the initial sound of the word *book* is produced, the upper lip articulates with the lower lip.

The term *speech chain* is used to refer to the stages of speech production from the initiation to production. The organs which take part in the production of speech sound are called the *speech* or *vocal organs*.

1.2. THE SPEECH ORGANS

As noted above, the pulmonic egressive air stream initiated in the lungs under the action of the diaphragm undergoes important changes as it travels upwards under the influence of the speech organs. Phoneticians generally divide the speech organs into two broad categories depending whether they are located *under* the larynx or *above* it as shown in Figure 1.1 below.

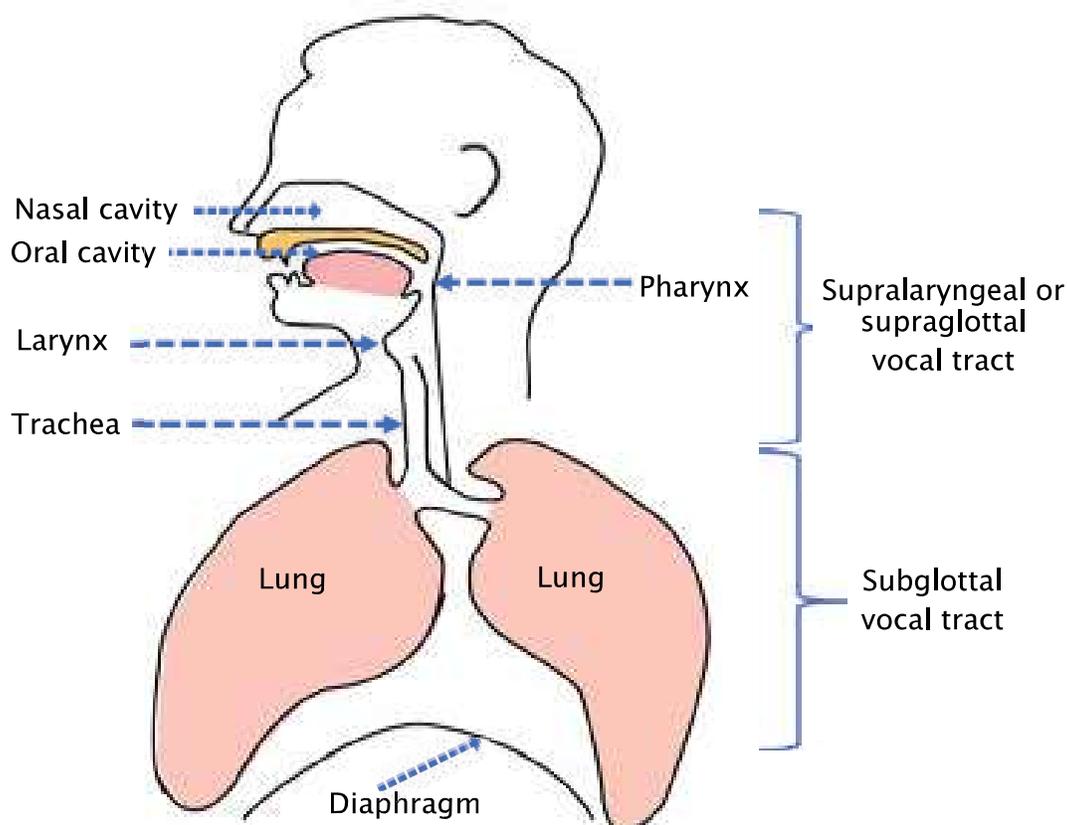


Figure 1.2. The speech organs

The speech organs located **above** the larynx -commonly referred to as the vocal tract- are said *supralaryngeal* or *supraglottal*, and those located **below** it are said *subglottal*.

For the purposes of this book, we will consider mainly the supraglottal speech organs (or articulators) as they are the most involved in speech production. These articulators can either move during the speech production process and are active; or they take part in the process without moving, they are passive. Speech organs are further subdivided based on their function. These subdivisions are:

Initiator: the speech organ that sets air into motion to produce speech sounds. The main initiator is the lungs, because most speech sounds are produced by pulmonic air (lung air). Most of speech sounds are made using this air.

Phonator: The term refers to the vocal cords (also known as vocal folds) in the larynx, which are used to produce voice.

Articulator: the speech organ used to obstruct the out-going air in the production of speech sounds.

1.2.1. The oral cavity

The oral cavity is by far the most important cavity and consists of the following articulators (see Figure 1.2. below).

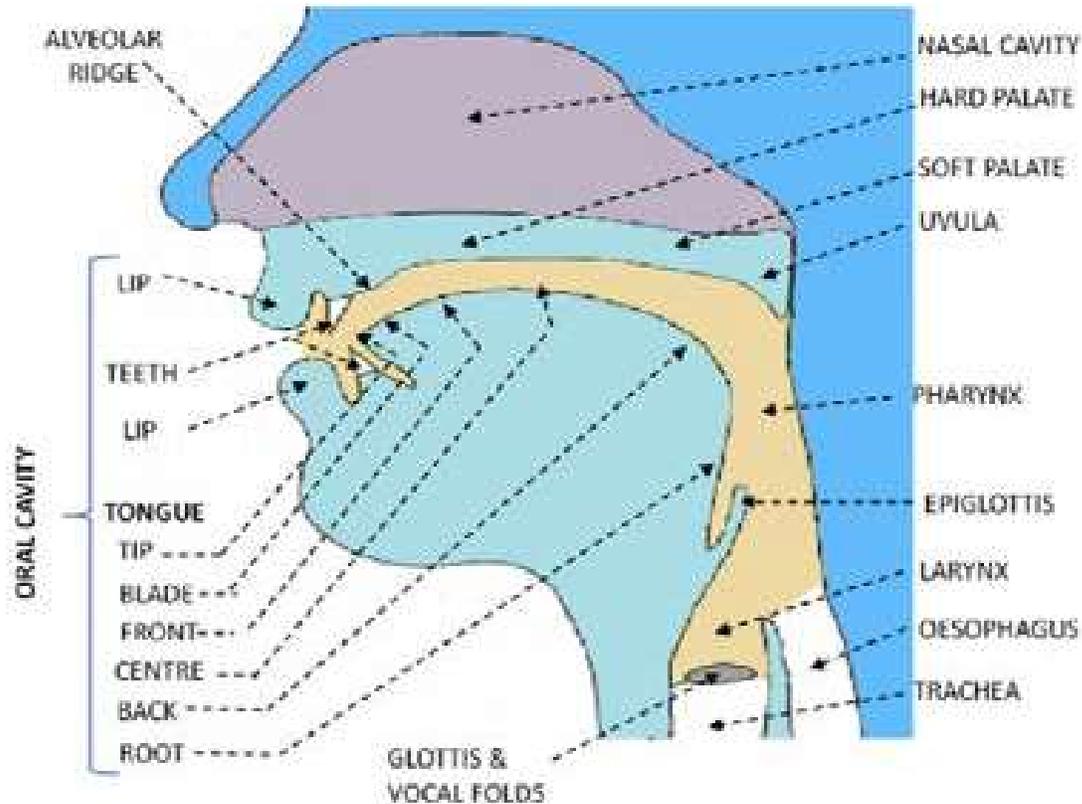


Figure 1.3. The speech organs

The lips

They constitute the final articulators in an oral articulation. Their shape usually affects the total cavity. They may assume various shapes:

- open position as in *card*;
- close-rounded as in *wood*;
- open-rounded as in *hot* (vigorous pronunciation);
- spread as in *see* (vigorous pronunciation);
- neutral as in *get*.

The upper lips are part of the upper jaw and are passive; the lower lips are part of the lower jaw and are active.

English Phonetics and Phonology

/ɪŋɡlɪʃ fə'netɪks ənd fə'nɒlədʒi/

A Handbook for Teachers and Students

With a student companion website and a desktop application

This is a handbook, that is “a book that contains... the most important and useful information about a subject” (Cambridge Dictionary). It is accompanied by a teacher's book, an interactive computer-based application, and a student companion website where students and teachers can find keys to the activities, word pronunciation, animated diagrams, additional materials such as audio and video recordings, and many more resources including complimentary exam copies. These can readily be utilized in a distance learning model such as blended learning, hybrid learning or any other synchronous or asynchronous online model.

This handbook is aimed at undergraduate students taking phonetics as part of English courses taken by university students and in-service and pre-service teachers of English as a foreign language. It can readily serve as a textbook for teaching Phonetics as it provides a complete introduction to the phonetics of English. The ultimate objective is to equip the students with the theoretical and, more importantly, practical knowledge of the basic principles of phonetics and phonology. So, in addition to a full discussion of the individual vowels and consonants, there is an extensive treatment of segmental and suprasegmental features of connected speech. Moreover, the course adopts an essentially practical approach to the subject as each section is followed by a series of application exercises and integrates technology and digital applications to reach the assigned objectives. No previous knowledge of phonetics is assumed of the reader, and all technical terms are explained in straightforward language as they are introduced.



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