PHONETICS AND PHONOLOGY:

A GUIDE FOR UNIVERSITY ENGLISH-AS-SECOND-LANGUAGE LEARNERS

JULIANAH AKINDELE

© Julianah Ajoke Akindele 2024

First published July, 2024

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means electronic, mechanical, photocopying, or otherwise without the prior written permission of the copyright owner.

ISBN:978-978-775-333-0

Printed by
Haytee Press and Pub. Co. Nig. Ltd.
No. 2, Mejindadi Street, off
Oja-iya Area, Ilorin Kwara State
Tel: 08038282074

Contents

Title Page……..….i

Copyright Page……...…….ii

Dedication……..…viii

Acknowledgments……...….ix

Preface…….xi

Foreword……xii

Chapter 1: Language and Linguistics……..……..1

1.1 The Concept of Language and Linguistics
1.2 The Nature of Language
1.3 Levels of Language Description
1.3.1 Micro-linguistics
1.3.2 Macro-linguistics
1.4 History of the English Language in Nigeria
1.5 English as a Second Language (ESL)
1.5.1 The Importance of Learning English as a Second Language
1.5.2 Challenges in Learning English as a Second Language
1.5.3 Teaching Methodologies for English as a Second Language
1.5.4 Strategies for Effective Learning of English as a Second Language
1.6 English Sounds and Letters

Chapter 2: Phonetics…….13

2.1 The Concept of Phonetics
2.1.1 Articulatory Phonetics
2.1.2 Acoustic Phonetics
2.1.3 Auditory Phonetics
2.2 Types of Phonology
2.2.1 Synchronic Phonology
2.2.2 Diachronic Phonology
2.3 Phonetic Transcription (IPA)
2.3.1 Types of Phonetic Transcription
2.4 International Phonetic Alphabet
2.5 Mechanism of Speech Production

2.5.1 The Articulation Process
2.6 The Organs of Speech
2.7 Speech Production
2.7.1 Air-stream Mechanisms
2.7.2 The Pulmonic Air-stream Mechanism
2.7.3 The Glottalic Air-stream Mechanism
2.7.4 The Velaric Air-stream Mechanism
2.8 The Process of Speech Production
2.9 Phonation Types
2.10 Description of Speech Sound Production

Chapter 3: Sound Patterns in the English Language: Vowels and Consonants…….....33

3.1 Introduction
3.2 English Phonemics
3.3 English Vowel Sounds
3.4 English Consonant Sounds

Chapter 4: Phonemic Analysis……..…45

4.1 Introduction
4.2 Phonemes, Allophones and Phones
4.3 Distinguishing Phonemes from Allophones
4.4 Allophonic Variants of the English Phonemes
4.5 Criteria for Classifying Sounds as Phonemes or Allophones
4.6 Consonant and Vowel Contrast Minimal Pair/Set Drills
4.7 English Phonotactics
4.8 The Function of Phonemes

Chapter 5: Representation of Speech Sound……...….52

5.1 What is Transcription?
5.2 The International Phonetic Alphabet (IPA)
5.2.1 Features of the International Phonetics Alphabet

Chapter 6: English Suprasegmentals: The Syllable……..….56
6.1 Definition and Description
6.2 Structure of the English Syllable
6.3 Consonant Clusters: Phonotactics

6.4 Open and Closed Syllables
6.5 Syllable Words
6.6 Syllabic Consonants
6.6.1 Strong and Weak Syllables

Chapter 7: English Suprasegmentals: Stress……..…….59

7.1 Definition of English Stress
7.1.1 Content and Function Words
7.1.2 Contrastive Stress
7.1.3 Emphatic Stress
7.1.4 Rhythmic Stress
7.2 The Nature of Stress
7.2.1 Free Versus Fixed Stress
7.2.2 Word Stress in English
7.3 Rules of Stress Placement in English
7.3.1 Bi/disyllabic Words
7.3.2Disyllabic Adjectives/Verbs
7.3.3 Trisyllabic Words (Verb)
7.3.4 Trisyllabic Words (Adjectives)
7.3.5 Trisyllablic Words (Nouns)
7.3.6 Polysyllabic Words
7.3.7 Compound Words
7.4 Sentence Stress
7.5 Emphatic Stress
7.6 Strong and Weak Stress in Connected Speech
7.6.1 Stress in Connected Speech
7.7 Contrastive Word Stress
7.8 Importance of Stress in Communication
7.9 Teaching English Stress to Learners
7.9.1 Phonetic Representation of Stress

Chapter 8: The English Suprasegmentals: Rhythm and Intonation……...…..77

8.1 Definition and Description of Rhythm
8.2 Rhythm Unit
8.3 Definition and Description of Intonation
8.3.1 The Structure/Elements of the English Intonation

8.3.2 The Functions of English Intonation
8.3.3 Problems of Stress Placement for L2 Users

Chapter 9: Phonological Processes……..…..83

9.1 What are Phonological Processes?
9.1.1 Aspiration
9.1.2 Nasalisation
9.1.3 Labialisation
9.1.4 Palatalisation
9.1.5 Velarisation
9.1.6 Dentalisation
9.1.7 Assimilation
9.1.8 Dissimlation
9.1.9 Coalescence
9.1.10 Devoicing
9.1.11 Elision/Deletion
9.1.12 Vowel Reduction
9.1.13 Insertion

Chapter 10: The Development of Phonological Thought…….....91

10.1 Pre-generative Era (1920s–1960s)
10.1.1 Classical Phonemics
10.2 The Concept of the Phoneme
10.3 Generative Era (1960s–1980s)
10.3.1 Generative Phonology
10.3.2 Levels of Representation
10.4 Distinctive Features for English Phonemes
10.5 English Phonological Processes and Rules
10.6 Post-Generative Era (1980s–Present)
10.6.1 Natural Phonology
10.6.1.1 Features of Natural Phonology
10.6.6.2 Tenets and Processes of Natural Phonology
10.6.6.3 Processes and Rules
10.6.6.4 Naturalness and Markedness
10.6.6.5 Natural Phonology and Child Phonological system

10.7 Metrical Phonology
10.7.1 The Origins of Metrical Theory
10.7.2 Applicability of Metrical Phonology Theory
10.7.3 The Metrical Tree
10.7.4 Prosodic Categories and the Foot
10.8 Basic Parameters of Word Stress
10.9 Quantity Sensitivity
10.10 Autosegmental Phonology
10.10.1 Tiers in Autosegmental Phonological Structure
10.11.2 Principles of Autosegmental Phonology
10.11.3 Autosegmental Representation of Tone
10.11.4 Contour Tone
10.11.5 Stability of Tone
10.12 Optimality Theory
10.12.1 Markedness and Faithfulness Constraints
10.12.2 Basic Components of Optimality Theory
10.13 Chomskian Linguistics and the Notion of Distinctive Features
10.13.1 Phonemes and Distinctive Features
10.13.2 Distinctive Features and Phonemicity
10.13.4 Distinctive Features, Deep and Surface Structures
10.13.5 Phonological Processes and Transformation Rules

Chapter 11: English Pronunciation Rules and Strategies for Improving Second Language (L2) learners Pronunciation……..……..125

11.1 English Pronunciation
11.2 Some Rules of English Pronunciation
11.3 Strategies for Improving Second Language L2 Pronunciation

Chapter 12: Exercises…….….129

References ……..….140

Index……...…….163

Dedication

This book**, "***Phonetics and Phonology: A Guide for University English-as-Second-Language Learners," is* dedicated to God, the great anchor and giver of life, who helped me to accomplish this project.

Acknowledgments

The English language teaching and learning in the Nigerian school curriculum is targeted toward four language learning skills, which include listening, speaking, reading and writing. Experts in the field of spoken English have observed that of all the skills of language learning, more challenges are encountered by English-as-Second-Language (ESL) learners/users in the area of spoken English. Also, English spoken in Nigeria has been observed by Phonologists and other Language experts as subjected to pronunciation influences of contact between Nigerian indigenous languages and English. Arising from these observations, the idea of writing this book came from my passion for teaching Phonetics and Phonology at the university over a decade ago to undergraduate and postgraduate students. Over the years, I have observed with passion, students scouting for materials in phonology and phonetics as first-hand materials to guide their class readings, tests and assignments, especially as Second Language Learners of the subject matter. Being one of the pioneer staff of the Department of English and Literary Studies, I decided to put this piece together to serve as reference material for the department's English students and other university students who may be interested in the book. The book will serve as a guide for students who often develop cold feet anytime the course is mentioned. The book has attempted to demystify the technicalities connected to the subject matter by using simple English expressions in the narratives of the various phonological concepts and some exercises for practice. At this juncture, I thank Professor Adenike Akinjobi, a renowned Professor of Phonetics and English Phonology for accepting to write the foreword of this book. The effort of my PhD student, Fabunmi Victor, who rallied around me to ensure that the target was met, is well appreciated. The moral support and encouragement from Prof. Temitope Balogun are greatly appreciated. Professor Olatunde Ayodabo (*Haytee Press and Pub. Co. Nig. Ltd.*), the publisher of this book is immensely appreciated for the timely delivery and quality production of the book despite its technicality. May God stand by you all.

Julianah A. Akindele Ph.D

Preface

This book starts with an exploration of language and linguistics as central topics in the study of human communication, cognition, and society. It further reviews the foundational theories, key concepts, and developments in the fields of language and linguistics, Chapter two examines the concept of phonetics as the study of the physical sounds of human speech. It involves the analysis of how sounds are produced (articulatory phonetics), transmitted (acoustic phonetics), and perceived (auditory phonetics). Chapter three examines English language learning in the Nigerian school curriculum and how English spoken is subjected to pronunciation influences of contact between Nigerian indigenous languages and English. Some of the reasons observed are that many second language learners/users of English find some of the English sounds problematic because these sounds are not attested in their mother tongues/first /native. The problem of vowel length as well as other pedagogical problems and infrastructural issues are well articulated in the chapter. Chapter four discusses phonemic analysis as a cornerstone of phonological theory that provides a systematic framework to understand how sounds function in language while chapter five examines how speech sounds are representation of sounds in a systematic and standardised written form Chapters six, seven and eight discuss the indispensable nature of the relevance of the syllable to English suprasegmentals of stress, rhythm and intonation. Chapter nine explains phonological processes in connected speech and chapter ten explains the development of phonological theories in simple terms, focusing on three main periods: the pre-generative era (1920s–1960s), the generative era (1960s–1980s) and the post-generative era (1980s–today). Also, the chapter looks at how Noam Chomsky's ideas about language, especially the concept of distinctive features have influenced phonology. Chapter eleven discusses English pronunciation rules and strategies for improving second language (l2) learners' pronunciation and chapter twelve wraps up the text with exercises on phonetics, general concepts of language, English phonology, segmental phonemes, suprasegmentals of stress, rhythm and intonation, and phonological theories.

Foreword

The study of phonetics and phonology is crucial for comprehending the intricate and dynamic nature of human language. As a systematic investigation of the sound properties of language, phonetics and phonology offer a crucial framework for analysing the structural and functional aspects of linguistic sound systems.

This book, "Phonetics and Phonology: A Guide for University English-as-Second-Language Learners," offers a comprehensive introduction to the principles and methodologies of phonetics and phonology, with a specific focus on the English language. By exploring these disciplines' concepts, theoretical foundation, and analytical tools, learners will gain a deeper understanding of the sound patterns and phonological structures that underlie the English language.

This book examines speech sounds (phonetics) in conjunction with the sound patterns and phonological rules that govern their distribution (phonology), helping learners develop a nuanced appreciation of the complex interactions between sound and structure in language. Throughout this book, the author explicitly discusses the concepts and empirical evidence to illuminate the phonetic and phonological principles that shape the English language.

Topics covered include the articulation of English segmentals and suprasegmentals, phonological analysis, and the application of an important phonological theory - generative phonology - to the study of the English language. By engaging with the theoretical concept presented in this book, learners will develop a sophisticated understanding of the sound properties of the English language and their role in shaping the structure and function of language.

This book is an invaluable resource for anyone seeking to deepen their knowledge of phonetics and phonology and their application to the study of the English language.

Adenike Akinjobi
Professor of Phonetics and English Phonology
University of Ibadan
Nigeria

Chapter 1

LANGUAGE AND LINGUISTICS

1.1 The Concept of Language and Linguistics

Language and linguistics are central topics in the study of human communication, cognition, and society. Linguistics, the scientific study of language, aims to understand how language functions, its structure, and how it evolves. Language, in turn, is often described as a complex system of communication used by humans, involving sounds, symbols, and grammar to convey meaning. It further review, explores the foundational theories, key concepts, and developments in the fields of language and linguistics, focusing on their interrelationship, evolution, and societal importance.

1.2 The Nature of Language

Language is a defining characteristic of human cognition and culture. Ferdinand de Saussure, in his seminal work Course in General Linguistics (1916), introduced the concept of language as a system of signs, emphasizing the arbitrary relationship between signifiers (sounds or written forms) and what they signify (meaning). He distinguished between langue (the system of language) and parole (individual speech acts), which became foundational in structuralist approaches to linguistics. This laid the groundwork for later theories that explore the structures underlying language use.

Noam Chomsky's theory of Generative Grammar (1957) revolutionised linguistics by introducing the idea that humans have an innate linguistic capacity. Chomsky argued that underlying all human languages is a universal grammar—an abstract set of rules shared by all languages, which children naturally acquire. His work significantly shifted the focus of linguistics from the mere description of language structures to the cognitive mechanisms underlying language acquisition.

1.3 Levels of Language Description

Linguistics, as a field of study, covers various areas of human language which are categorised under two broad areas, namely micro- linguistics and macro -linguistics, which are also divided into several branches, each focusing on a particular aspect of language.

1. 3.1 Micro-linguistics

Micro- linguistics encompasses the basic components or constituents of a language or what can also be termed aspects of language study, levels of language description. Some scholars refer to this as theoretical linguistics. In theoretical linguistics, the structural aspects of language under the label of grammar. M.A.K Halliday describes grammar as two arms, which are divided into form and meaning. Under form: is phonetics, phonology, morphology, and syntax while semantics is subsumed under meaning. Therefore, the levels of language study or the basic components of a language or micro-linguistics include:

i. Phonetics and Phonology: These aspects of linguistics study the sounds of speech. Phonetics deals with the physical production and perception of sounds, while phonology is concerned with how sounds function within particular languages. Notable works include Peter Ladefoged's *A Course in Phonetics (2001) and David Stampe's Natural Phonology* (1979).

ii. Morphology: This area investigates the structure of words. Morphologists examine how morphemes, the smallest units of meaning, combine to form words. The study of word formation is crucial for understanding how languages evolve and adapt.

iii. Syntax: Syntax is the study of sentence structure—how words combine to form grammatically correct sentences. Chomsky's generative grammar theory profoundly influenced syntactic theory, introducing the concept of transformational rules that govern sentence structure.

iv. Semantics and Pragmatics: Semantics involves the study of meaning in language, while pragmatics focuses on how context influences the interpretation of meaning. Key figures in these fields include Charles Fillmore, with his work on *Frame Semantics* (1982), and H.P. Grice, known for his *Theory of Implicature* (1975), which explains how speakers often mean more than what they explicitly say.

1.3.2 Macro- linguistics

These aspects of language study have to do with the aspects of linguistics study which involves the application of the findings of theoretical linguistics to the analysis of language in use. It involves the application of linguistics to other disciplines. The sub- fields under macro- linguistics include:

i. Sociolinguistics and Language Variations

Sociolinguistics investigates the relationship between language and society. William Labov's (1966) pioneering work on language variation and social class in *The Social Stratification of English* demonstrated how linguistic features can vary according to social factors such as region, class, and ethnicity. This field explores topics like dialects, code-switching, language change and language contact.

ii. Ethnolinguistics

This a branch of linguistics which studies how language reflects the cultural and cognitive frameworks of different communities. Benjamin Lee Whorf's Theory of linguistic relativity, or the Sapir-Whorf Hypothesis (1956), suggests that the structure of a language affects its speakers' worldview, influencing cognition and perception.

iii. Psycholinguistics and Language Acquisition

Psycholinguistics focuses on the cognitive processes underlying language use and acquisition. Jean Piaget's work on cognitive development and

language emphasised the interaction between linguistic and cognitive growth in children. Chomsky's poverty of the stimulus argument also plays a significant role here, suggesting that children acquire complex language rules without explicit instruction, pointing to an innate faculty for language. More recently, researchers like Steven Pinker (1994), in his book *The Language* argued that language is a biological adaptation, a specialised human ability shaped by natural selection. Pinker's work synthesises ideas from cognitive science, biology, and linguistics, highlighting how humans evolved to be linguistic creatures.

iv. Applied linguistics

Applied linguistics employs linguistic theory and methods in teaching and researching on learning a second language. It involves error analysis, that is, looking at the errors people make as they learn another language and at their strategies for communicating in the new language at different degrees of competence. Applied linguistics recognises that motivation, attitude, learning style, and personality affect the extent to which a person learns another language.

v. Neurolinguistics

Neurolinguistics is related to psycholinguistics. It is the study of how language is processed and represented in the brain. It deals with identification of the parts of the brain that are involved with the production and understanding of language and to determine where the components of language (phonemes, morphemes, and structure or syntax) are stored. Neurolinguistics uses techniques for analysing the structure of the brain and the effects of brain damage on language.

vi. Historical Linguistics

Historical linguistics studies the development of languages over time. This branch is concerned with language families, sound changes, and the comparative method for reconstructing ancestral languages. Pioneers like August Schleicher and Karl Verner contributed to the understanding of how languages evolve, diversify, and influence one another over centuries. The

study of Proto-Indo-European languages, for instance, has shed light on the common ancestry of many European and Asian languages. Diachronic analysis allows linguists to trace language changes and shifts, contributing to our understanding of cultural and historical connections between linguistic groups.

vii. Language and Technology/Computational linguistics

In the modern era, linguistics intersects with technology, particularly in fields like computational linguistics and natural language processing (NLP). Advances in artificial intelligence (AI) have fuelled interest in developing machines that can understand and produce human language. Chomsky's theories of generative grammar inspired early computational models, while more recent approaches use statistical methods and machine learning to process language, as seen in applications like speech recognition, language translation, and chatbots.

viii. Descriptive linguistics

Descriptive linguistics is the study and analysis of spoken language. Descriptive linguistics begins with what a linguist hears native speakers say. By listening to native speakers, the linguist gathers a body of data and analyses it in order to identify distinctive sounds, called phonemes and suprasegmental patterns.

ix. Comparative linguistics

Comparative linguistics is the study and analysis of the origins and relatedness of different languages. Comparative linguistics also involves looking for similarities in the way words are formed in different languages. It is also concerned with universal characteristics of language and with comparisons of grammars and structures. It seeks to understand the more complicated reality of language history, taking language contact into account.

1.4 History of the English Language in Nigeria

The exact date that English language usage started in Nigeria is not certain. However, it is believed that the first intimate contact between the British and some ethnic groups in Nigeria was in Southern Nigeria. This must have been at some period before the Atlantic Slave trade. It is on records that as from 1553, English men paid frequent visits to the Nigerian shores, especially the ports of Ancient Benin and Old Calabar, and the type of communication which evolved between the Englishmen and the Nigerians was a simplified kind of communication in English called Pidgin. Note, however, that Portuguese and not English was probably the earliest European language to be used in Nigeria.

According to Adetugbo (1984), a certain Oba in Benin was reported to have spoken Portuguese. The language was in use for economic interest and because it was the language of commerce and diplomacy in the ancient Benin Kingdom. The advent of English in Nigeria can be classified into three major periods, namely: the period before the missionary activities, the period during missionary activities and the period after the amalgamation of the southern and northern protectorates.

It is important to add that there is no clear-cut demarcation between these periods as each period shades into another period.

Summarily, English language in Nigeria is a second language. It came to be through a language contact situation, and when two languages meet two cultures must also meet because the culture of the people is embedded in the language. Lot of activities led to implantation of English language in Nigeria such as the boom in slave trade and the monopoly enjoyed by England along the West Coast of Africa set the stage for easy permeation and the use of English along the West Coast and its land, including Nigeria. This contact situation between Portuguese, English and indigenous Nigerian languages, resulted in the birth of Pidgin. In other words, slave trade activities enhanced not only the spread of English in Nigeria but the emergence of Pidgin.

The spread of English was also enhanced by the native indigenous interpreters, many of whom were trained abroad, and later served as professionals' interpreters to slave traders and ship captains. Ironically, the spread of English in Nigeria was also enhanced with the abolition of slave trade. Free slaves who had learnt some English returned to their original houses in West Africa and were able to introduce the language; and such places include Nigeria. Some of the free slaves had received formal education in English. Later on, many of the freed slaves were employed by the missionaries, trading companies and British colonial administrators either as messengers, interpreters, and clerks and even as teachers.

1.5 English-as-a-Second-Language (ESL)

English-as-a-Second-Language (ESL) refers to the study or use of English by speakers with different native languages. English has become a global lingua franca, used in international business, education and communication. As a result, millions of people around the world are learning English as a second language to improve their opportunities and connect with others.

1.5.1 The Importance of Learning English-as-a-Second-Language

English is one of the most widely spoken languages in the world, with over 1.5 billion speakers, including native and non-native users (Crystal, 2010). Its global dominance can be attributed to historical, economic and cultural factors, such as the influence of the British Empire and the rise of the United States as a global superpower. English is the primary language of international communication in fields like science, technology, aviation and diplomacy (Graddol, 2006). For non-native speakers, learning English open doors to better educational and career opportunities. Many universities worldwide offer programs in English and proficiency in the language is often a requirement for jobs in multinational companies. Additionally, English is the language of the internet, with a significant portion of online content being in English (Crystal, 2010). Thus, ESL learners gain access to a wealth of information and resources.

1.5.2 Challenges in Learning English as a Second Language

Despite its importance, learning English as a second language presents several challenges. These challenges vary depending on the learner's native language, cultural background, and prior exposure to English.

1. **Phonological Challenges:** English pronunciation can be difficult due to its irregular spelling and sound system. For example, the same letter combinations can produce different sounds, as in "ough" in "through, "cough," and "though" (Ladefoged & Johnson, 2014). Non-native speakers often struggle with sounds that do not exist in

their native languages, such as the "th" sound in "think" or the "r" and "l" distinction for Japanese speakers (Celce-Murcia et al., 2010).

2. **Grammar and Syntax:** English grammar rules, such as verb tenses, articles, and prepositions, can be confusing for ESL learners. For instance, the use of articles ("a,""an,""the") is absent in many languages, leading to common errors (Yule, 2016).

3. **Vocabulary and Idioms:** English has a vast vocabulary, and many words have multiple meanings. Additionally, idiomatic expressions like "kick the bucket" or "spill the beans" can be perplexing for learners (Fromkin et al., 2017).

4. **Cultural Differences:** Language is deeply tied to culture, and understanding cultural contexts is essential for effective communication. For example, humour, politeness, and conversational norms vary across cultures and can lead to misunderstandings (Kramsch, 1998).

1.5.3 Teaching Methodologies for English-as-a Second-Language (ESL)

The teaching of the English language English as- a- Second-Language (ESL) can be made effective through a combination of methodologies tailored to the needs of learners. Over the years, several approaches have been developed, each with its strengths and limitations.

1. **Grammar-Translation Method:** This traditional approach focuses on translating texts from the target language to the native language and emphasises grammar rules. While it helps learners understand the structure of English, it often neglects speaking and listening skills (Richards & Rodgers, 2014).

2. **Audio-Lingual Method:** This method emphasises repetition and drills to develop speaking and listening skills. It is based on behaviourist theories of language learning, where learners acquire language through habit formation (Richards & Rodgers, 2014).

However, it can be monotonous and may not encourage creative language use.

3. **Communicative Language Teaching (CLT):** CLT focuses on using language for real-life communication. It encourages learners to engage in meaningful conversations, role-plays, and problem-solving activities. This approach is widely regarded as effective because it prioritises fluency and practical language use (Celce-Murcia et al., 2010).

4. **Task-Based Learning (TBL):** In TBL, learner's complete tasks that require language use, such as planning a trip or solving a problem. This method promotes active learning and helps learners apply their skills in authentic contexts (Ellis, 2003).

5. **Technology-Enhanced Learning:** With the rise of digital tools, technology has become an integral part of ESL teaching. Apps, online courses, and speech recognition software provide interactive and personalised learning experiences (Neri et al., 2008).

1.5.4 Strategies for Effective Learning of English as a Second Language (ESL)

For ESL learners, adopting effective strategies can significantly enhance language acquisition. Here are some evidence-based strategies:

1. **Immersion:** Surrounding oneself with English through movies, music, books and conversations accelerates learning. Immersion helps learners pick up vocabulary, pronunciation, and cultural nuances naturally (Krashen, 1982).

2. **Phonemic Awareness:** Understanding the sound system of English is crucial for pronunciation. Learners should practice minimal pairs (e.g., "ship" vs. "sheep") and use phonetic transcription tools like the International Phonetic Alphabet (IPA) to improve accuracy (Ladefoged & Johnson, 2014).

3. **Vocabulary Building:** Learning new words in context, rather than in isolation, improves retention. Flashcards, word maps, and spaced repetition systems (SRS) are effective tools for vocabulary acquisition (Nation, 2001).

4. **Speaking Practice:** Regular speaking practice with native or proficient speakers builds confidence and fluency. Language exchange programs and conversation clubs provide opportunities for real-life communication (Derwing & Munro, 2015).

5. **Error Correction:** Constructive feedback helps learners identify and correct mistakes. Teachers and peers can provide feedback on grammar, pronunciation, and usage, fostering continuous improvement (Ellis, 2003).

6. **Cultural Awareness:** Understanding cultural contexts enhances communication skills. Learners should study cultural norms, gestures, and etiquette to avoid misunderstandings and build rapport with native speakers (Kramsch, 1998).

1.6 English Sounds and Letters

The English language has 44 phonemes, or sounds, that make up words. These sounds are represented by the 26 letters of the alphabet and various combinations of letters, called graphemes. The sounds are divided into two main categories: consonants and vowels:

Consonants: These are sounds where the airflow is partially or completely cut off when the sound is made. For example, the initial and final sounds in “pet” and “top” are both consonants.

Vowels: Vowel sounds are produced with no obstruction in airflow when the sound is made.

The exact number of phonemes can vary depending on accent and articulation, and there is no definitive list.

English sounds and letters are the foundation of the English language. They are divided into two main categories: vowels and consonants. Here's an overview of how sounds relate to letters in English:

1. **Vowels**

There are 5 vowel letters in English: A, E, I, O, U. However, these letters can produce different vowel sounds.

Vowel Sounds:

- A: as in cat
- E: as in bed
- I: as in sit
- O: as in hot
- U: as in cup

Long vowel sounds:

- A: as in cake
- E: as in see
- I: as in bike
- O: as in go
- U: as in flute

Diphthongs:

Some vowel sounds glide between two vowel positions. Examples include:

- /aʊ/ as in Town
- /aɪ/ as in Light
- /eɪ/ as in Play
- /eə/ as in Pair
- /ɪə/ as in Deer
- /oʊ/ as in Slow
- /ɔɪ/ as in Boy

- /ʊə/ as in Sure

2. Consonants

There are 21 consonant letters in English, but some can represent more than one sound.

Common Consonant Sounds:

- b: as in bat
- d: as in dog
- g: as in go
- p: as in pen
- t: as in top
- s: as in sun
- f: as in fun
- l: as in love
- r: as in red

Some consonant combinations make new sounds, like:

- Ch: as in chair
- Sh: as in ship
- Th: as in this (voiced) or thin (voiceless)

3. Silent Letters

In some words, letters are written but not pronounced. Examples include:

- k: knight (silent k)
- w: write (silent w)
- b: comb (silent b)

4. Schwa Sound (ə)

The schwa is a very common unstressed vowel sound in English, often represented by any of the vowel letters in unstressed syllables. Example: the a in about sounds like a schwa.

Phonics and Sound-to-Letter Mapping

English is not always phonetic, meaning that letters do not always correspond to just one sound. Therefore, learning English spelling and pronunciation often involves memorization of specific rules and exceptions.

Chapter 2

PHONETICS

2.1 The Concept of Phonetics

Phonetics is the study of the physical sounds of human speech. It involves the analysis of how sounds are produced (articulatory phonetics), transmitted (acoustic phonetics), and perceived (auditory phonetics). Language has evolved with the necessity of human beings to communicate with each other. As civilisation progressed, people of a certain group developed some common speech sounds and gestures to denote a particular meaning. And with times they also attributed some images or written signs to the sounds to preserve it. Thus, most of the languages, we have around the world, have a spoken and a written form or pattern. When we learn any language, we need to follow the way a particular sign or letter represents a speech sound to pronounce it properly. This pattern of pronunciation also varies from language to language as every language has its own set of sounds. We may not be able to find some sounds in some language. For example, in Arabic, we don't have the /p/ sound. So, when Arabic native speakers learn English, they find it difficult to pronounce it. In other cases, within a language, the pattern of pronunciation may also be different. Likely, in English the way we perceive the pronunciation the word 'do' is different from 'go'. Or, in case of patient', the letter 't' sounds like 'sh'. Resemblances between spelling and pronunciation are obvious but potentially misleading. This way, the process of learning any language becomes more complicated. Phonetic transcription helps to eradicate these pitfalls.

In phonetics, sound symbols are used to capture the actual pronunciation in writing. These symbols act as one to-one equivalents between the graphemes and phonemes. Phonetics is the scientific study of speech sounds. It examines how sounds are produced (articulatory phonetics), transmitted (acoustic phonetics), and perceived (auditory phonetics). Phonetic transcription is concerned with how the sounds used in spoken language are represented in written form. Phonetic transcription makes it more conceivable by

demonstrating the pronunciation of a given word of a language with the help of some specific symbols, which act as something exact or much nearer to one-to-one equivalent between sounds and letters than is possible with the regular orthographic presentation. It takes into account the nuances in pronunciation pattern rather than focusing on the spelling of a word. For example, in the word "machine', the grapheme 'chi' sounds like the phoneme she'. So, when we do a phonetic transcription of the same word, we use the symbol /ʃ/ in place of 'chi'.

2.1.1 Articulatory Phonetics

Articulatory phonetics refers to the 'aspect of phonetics which looks at how the sounds of speech are made with the organs of the vocal tract' (Ogden,2009 Pg. 173).It focuses on the physical production of speech sounds. It examines how the vocal tract comprising the lips, tongue, teeth, palate and vocal cords shapes airflow to create distinct sounds. This branch is foundational to phonetics, as it explains the mechanisms behind the vast array of sounds in human languages. The study of articulatory phonetics involves two primary dimensions: place of articulation and manner of articulation. The place of articulation refers to where in the vocal tract a sound is produced, such as bilabial sounds like /p/ and /b/, which involve both lips or alveolar sounds like /t/ and /d/, which are produced with the tongue against the alveolar ridge. The manner of articulation describes how the airflow is modified, such as through complete closure (stops like /k/ and /g/), partial constriction (fricatives like /s/ and /z/), or nasal resonance (nasals like /m/ and /n/). Additionally, voicing whether the vocal cords vibrate during sound production distinguishes sounds like /f/ (voiceless) from /v/ (voiced).

2.1.2 Acoustic Phonetics

Acoustic phonetics bridges the gap between production and perception by analysing the physical properties of speech sounds as sound waves. This branch examines characteristics such as frequency, amplitude and duration, often using tools like spectrograms to visualise speech patterns. One of the

most important concepts in acoustic phonetics is the formant, a resonant frequency of the vocal tract that characterises vowels and other sounds. Formants are crucial for distinguishing between sounds like /i/ (as in "see") and /u/ (as in "too"). Acoustic phonetics also studies the fundamental frequency (pitch) and amplitude (loudness) of sounds, which are essential for understanding prosody and intonation.

2.1.3 Auditory Phonetics

While articulatory phonetics examines how sounds are produced, auditory phonetics investigates how these sounds are perceived by the human ear and processed by the brain. This branch explores the auditory system's ability to distinguish pitch, loudness and timbre, as well as how listeners categorise and interpret speech sounds. For example, the sounds /p/ and /b/ are perceived as separate phonemes, even though they may exist on a continuum of voicing. Auditory phonetics has significant applications in the development of hearing aids, cochlear implants and speech recognition systems.

2.2 Types of Phonology

2.2.1 Synchronic Phonology

Synchronic phonology studies the sound system of a language at a specific moment in time, without worrying about how it has changed over the years. At the heart of synchronic phonology are "phonemes", the smallest units of sound that can change the meaning of a word. For example, in English, the sounds /p/ and /b/ are phonemes because they distinguish words like "pat" and "bat." But phonemes can have different pronunciations, called "allophones", which don't change meaning. Think of the /p/ sound in "spin" (unaspirated) and "pin" (aspirated)—they are allophones of the same phoneme.

Synchronic phonology also looks at "phonotactics", the rules that govern how sounds can be combined. For instance, in English, the sound combination /spr/ is allowed (as in "spring"), but /fp/ is not. Additionally, it

examines "syllable structure", which organises sounds into syllables with an onset (beginning), nucleus (vowel), and coda (end).

This field owes much to scholars like "Ferdinand de Saussure", who introduced the idea of studying language as a system at a specific time in his book "Course in General Linguistics" (1916). "Nikolai Trubetzkoy", a key figure in the Prague School of Linguistics, developed the concept of phonemes and distinctive features in "Principles of Phonology" (1939). Later, "Noam Chomsky and Morris Halle "proposed Generative Phonology in "The Sound Pattern of English" (1968), using rules to explain how sounds are organised.

2.2.2 Diachronic Phonology

Diachronic phonology studies how sound systems change over time. One of the most famous examples of sound change is the "Great Vowel Shift" in English, which altered the pronunciation of long vowels between the 15th and 18th centuries. Words like "bite" and "house" were once pronounced very differently. Diachronic phonology seeks to explain such changes, using principles like the "regularity of sound change", which states that sound changes usually follow predictable patterns. For example, "Grimm's Law", formulated by "Jacob Grimm" in "Deutsche Grammatik" (1819), describes how certain consonant sounds changed in Proto-Germanic.

Another key concept is "phonological reconstruction", where linguists piece together the sound systems of ancient languages. For instance, by comparing modern languages, scholars have reconstructed the sound system of "Proto-Indo-European", the ancestor of many European and Asian languages.

Diachronic phonology also explores "phonological borrowing", where languages adopt sounds from one another through contact. For example, English borrowed the /ʒ/ sound (as in "measure") from French.

Scholars like "Karl Verner", who explained exceptions to Grimm's Law, and "William Labov", who studied how social factors influence sound change, have made significant contributions to this field. "André Martinet", in

"Economy of Phonetic Change" (1955), explored why sound changes happen, emphasizing the idea of "economy" in language.

2.3 Phonetic Transcription (IPA)

The International Phonetic Alphabet (IPA) is a standardised system for transcribing the sounds of any language.

2.3.1 Types of Phonetic Transcription:

Phonetic transcription can be categorised into many types depending upon what is its function or purpose, i.e., Systematic and Impressionistic Transcriptions, Specific and Generic Transcriptions etc. Most notable categorization among all is a **narrow transcription** and **broad transcription**. Broad transcription takes into account only the most noticeable phonetic features of the pronunciation, while narrow transcription encrypts detailed information about the phonetic features of the pronunciation. It considers allophones and other nuances in the utterance of a word. The broad transcription is often referred to as phonemic transcription, which neglects all allophonic features. For example, the pronunciation of the English word "cat" may be transcribed using the IPA as /kæt/ or [k^hæt]; the broad, phonemic transcription, placed between slanted lines or slashes, shows that the word starts with phoneme /k/, but the narrow, allophonic transcription, enclosed with square brackets, indicates that this /k/ is rather aspirated [k^h] and sounds different considering the native pronunciation.

2.4 International Phonetic Alphabet:

The International Phonetic Alphabet (IPA) is an alphabetic system comprises of a standardised set of symbols which represent each distinctive sound of any language. These symbols are primarily based on Roman letters but also include some other characters from different languages and are modified to adapt to the Roman style. The concept of IPA was proposed by Otto Jespersen. Later it was developed by some linguists i.e., A.J. Ellis, Daniel Jones, Henry Sweet, and Passy in the late 19thcentury. The International Phonetic Association has been instrumental in the development of IPA and

it also revised and updated the symbols on multiple occasions. The Association recommends that a phonetic transcription should be enclosed in square brackets [ ] while any particular symbol which is used to denote phonological contrasts may be enclosed with slashes/ /. In case of any doubt, it is recommended to use brackets. The IPA chart presents the symbols in specific categories which comprises of vowels, consonants, suprasegmentals and diacritics.

INTERNATIONAL PHONETIC ALPHABET (IPA) SYMBOLS

CONSONANT CHART

Stricture	Single Articulation														Double Articulation			
	place / Manner	Bilabial	Labio-dental	Dental	Alveolar	Retroflex	Palato-Alveolar	Palatal	Velar	Uvular	Pharyn-geal	Glottal	Labial-Velar	Labial-Alveolar	Labial-Palatal	Dental-Palatal
Normal Closure Stops	Nasal	m	ɱ		n̪		ɳ		ɲ	ŋ	ɴ							n͡ŋ̪
	Plosive	p b		t̪ d̪	t d	ʈ ɖ		c ɟ	k g	q ɢ		ʔ	k͡p g͡b	p͡t b͡d		t̪͡ɕ d̪͡ʑ
	Ejective	pʼ			tʼ	ʈʼ		cʼ		qʼ						
	Implosive	ɓ ɗ			ɠ̊ ɗ̊		ᶑ̊		ʄ̊	ɠ̊	ʛ̊					
	Click	ʘ		ǀ	ǃ				ǂ							
	Affricative	p͡ɸ b͡β			t͡s d͡z		t͡ʃ d͡ʒ		k͡x g͡ɣ							
Short closure Stops	Tap				ɾ	ɽ										
Intermittent closure Stops	Trill	ʙ			r					ʀ						
Close approxi-mation	Central Fricative	ɸ β	f v	θ ð	s z	ʂ ʐ	ʃ ʒ	ç ʝ	x ɣ	ʁ	ħ ʕ	h ɦ	ʍ			
	Lateral Fricative				ɬ ɮ											
Open approxi-mation	Central Approximant				ɻ			j	ɰ						ɥ	
	Lateral Approximant				l			ʎ̝	ʟ							

Table 1: International Phonetic Alphabet (IPA) Symbols Consonants chart

2. 5 Mechanism of Speech Production

Speech production is the process by which humans produce speech sounds, enabling communication. This involves the coordinated activity of various anatomical structures and physiological mechanisms that transform airflow into intelligible sounds. Understanding the mechanisms and processes of speech production is fundamental to the study of phonetics, linguistics, and related fields. Speech production involves the interaction of multiple mechanisms and structures. These are categorised into the articulation

process, the organs of speech, the role of active and passive articulators, and the points or places of articulation.

2.5.1 The Articulation Process

Articulation refers to the movement and interaction of various organs within the vocal tract to produce distinct sounds. It is the final stage in the process of converting air into speech, as described by Ladefoged and Johnson (2015). During articulation, airflow is shaped and modified into specific phonemes, which are the smallest units of sound in a language.

This process is dynamic and involves the coordinated movements of multiple articulators, such as the tongue, lips, and velum. Articulation is responsible for the distinct qualities of speech sounds, including their manner (e.g., stops, fricatives) and place of articulation (e.g., bilabial, alveolar). i.e.

- Speech begins with an air-stream mechanism, which generates airflow.
- This airflow is manipulated by the articulators to produce various phonemes (distinct speech sounds).
- The articulation process determines the characteristics of the sounds, such as their place, manner, and voicing.

Ladefoged & Johnson (2015) emphasise that articulation is a dynamic process requiring precise control over multiple organs, including the tongue, lips, and velum.

2.6 Organs of Speech

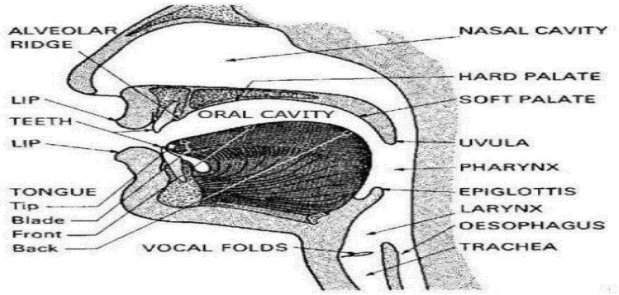


Fig. 1: Organs of Speech

The organs of speech are anatomical structures that collaborate to produce sound. These organs can be categorised based on their role in the production process:

They are divided into:

i. **Respiratory Organs:** The respiratory system provides the airflow necessary for speech.

Lungs: Provide the airflow necessary for speech. It acts as the primary source of air pressure, facilitating egressive airflow.

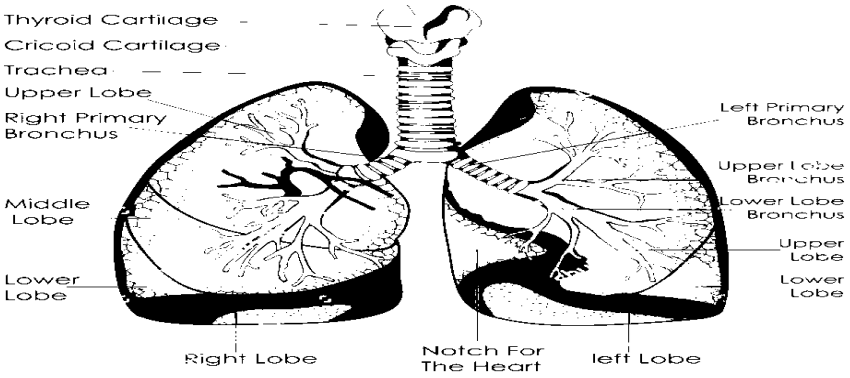


Fig.2: Lungs

Diaphragm: Regulates the pressure of airflow by controlling lung expansion and contraction.

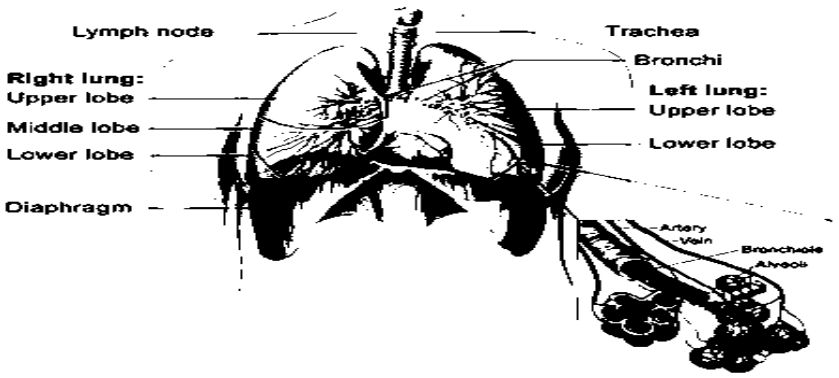


Fig. 3: Diaphragm

ii. **Phonation Organs:** Phonation occurs in the larynx, where the vocal cords (or vocal folds) vibrate to produce sound. The vocal cords can be adjusted to produce voiced sounds (e.g., /z/) or remain open for voiceless sounds (e.g., /s/).

Articulatory Organs: These include movable and fixed structures that modify airflow:

Tongue: The most versatile organ, capable of shaping a wide range of sounds by altering its position and shape.

Teeth and Lips: Used in producing bilabial sounds like /p/ and /b/. Also, it assists in forming sounds like /f/ and /v/.

Velum (Soft Palate): Regulates whether airflow exits through the oral or nasal cavity, crucial for distinguishing oral sounds (e.g., /b/) from nasal sounds (e.g., /m/).

iii. Active and Passive Articulators

Articulators are categorised into active and passive based on their role in shaping sounds:

Active articulators: These are movable parts of the vocal tract that actively engage in shaping airflow. Examples include:

- Tongue (e.g., producing /t/).
- Lips (e.g., producing /p/).

Passive articulators: These are stationary structures that provide surfaces against which active articulators move. Examples include:

- Alveolar ridge (e.g., producing /d/).
- Hard palate (e.g., producing /j/).

The interaction between active and passive articulators determines the place of articulation for a given sound.

Places/Points of Articulation

Places of articulation indicate where constriction or closure occurs in the vocal tract during sound production. Common points include:

i. **Bilabial:** Both lips come together, as in /p/ and /m/.
ii. **Labiodental:** The lower lip contacts the upper teeth, as in /f/ and /v/.
iii. **Alveolar:** The tongue tip or blade contacts the alveolar ridge, as in /t/ and /d/.
iv. **Palatal:** The tongue body approximates the hard palate, as in /j/.
v. **Velar:** The back of the tongue contacts the velum, as in /k/ and /g/.
vi. **Glottal:** The vocal cords constrict to produce sounds like /h/.

2.7 Speech Production

Speech production relies on airflow, which is manipulated through various air-stream mechanisms. Each mechanism determines the type of sounds produced.

2.7.1 Air-stream Mechanisms

Air-stream mechanisms refer to how airflow is generated in the vocal tract. There are three main types:

i. Egressive Air-stream Mechanisms

- Air is pushed out of the lungs (pulmonic egressive mechanism).
- Used in most languages for producing speech sounds.

ii. Ingressive Air-stream Mechanisms

- Air is drawn into the vocal tract.
- Found in languages that use clicks, implosives, or rare sounds.

2.7.2 The Pulmonic Air-stream Mechanism: This mechanism, involving airflow from the lungs, is the most common. Nearly all speech sounds in the world's languages are produced using this egressive mechanism. i.e.

- The most common mechanism, involving airflow from the lungs.
- Supports the production of vowels and consonants in nearly all languages.

2.7.3 The Glottalic Air-stream Mechanism: Airflow is generated by the glottis, resulting in:

- Ejectives: Sounds produced by upward movement of the glottis, such as [k'] which is realizable in Hausa language.
- Implosives: Sounds produced by lowering the glottis, such as [ɓ], common in Sindhi.

2.7.4 The Velaric Air-stream Mechanism

This mechanism involves trapping air between the back of the tongue and the velum. The release of this trapped air produces clicks found in languages like Zulu and Xhosa. Examples include:

i. /ʘ/ (bilabial click)
ii. /ǀ/ (dental click)
iii. /ǂ/ (palatal click)

2.8 The Process of Speech Production

Speech production involves four interrelated processes:

1. **The Initiation Process:** Airflow begins in the lungs (pulmonic mechanism), glottis (glottalic mechanism), or velum (velaric mechanism).
2. **The Phonation Process:** The vocal cords determine whether a sound is voiced (e.g., /z/) or voiceless (e.g., /s/).
3. **The Oro-nasal Process:** The velum controls whether airflow exits through the oral or nasal cavity. This process differentiates nasal sounds (e.g., /m/) from oral sounds (e.g., /b/).
4. **The Articulatory Process:** The final stage involves shaping airflow into distinct sounds using the articulators.

2.9 Phonation Types

Phonation describes the behaviour of the vocal cords during speech:

i. **Voiced Sounds:** Produced with vocal cord vibration (e.g., /v/, /z/).
   Voiceless Sounds: Produced with open vocal cords (e.g., /f/, /p/).
ii. **Murmur (Breathy Voice):** Vocal cords are partially open, allowing a breathy quality (e.g., in Hindi).
iii. **Creaky Voice:** Stiff vocal cords vibrate irregularly, producing a "creaky" effect (e.g., in some English accents).

2.10 Description of Speech Sound Production

Speech sounds are categorised into vowels, consonants and suprasegmentals.

- Vowels: Vowels are produced with an open vocal tract and are classified by tongue height, tongue position, and lip rounding. i.e.

  Tongue Height: High (e.g., /i/), mid (e.g., /e/), low (e.g., /a/).

  Tongue Position: Front (e.g., /i/), central (e.g., /ə/), back (e.g., /u/). Lip Rounding: Rounded (e.g., /u/), unrounded (e.g., /i/).

1. CONSONANTS

Consonants are produced with constriction or closure in the vocal tract. They are classified by voicing (voiced /b/, voiceless /p/), place of articulation (e.g., bilabial, alveolar), and manner of articulation (e.g., stops, fricatives). i.e.,

Produced with restriction or closure in the vocal tract. Classified by:

i. Voicing: Voiced (e.g., /b/) vs. voiceless (e.g., /p/).
ii. Place of Articulation: Bilabial, alveolar, velar, etc.
iii. Manner of Articulation: Stops, fricatives, nasals, etc.

Articulators are the sections of the vocal tract that can be used to shape sounds**.** By and large, there is a conversion of aerodynamic energy into acoustic in this process. The lower articulators of this tract are very much mobile. In the close connection and combination of these articulators, the sound waves are being formed and the sound is produced in the form of the voice and language.

Vocal cords: The function of the vocal cords is, to make a **vibration** to the air stream sent by the lungs.
Glottis: Glottis is opening between the vocal cords or the central part of the larynx. A glottal stop is formed when it is compactly closed.

In production and articulation of **voice,** vocal cords have an important role to play. When these vocal cords are together, the effect of voice is formed. In the process, vibration is triggered by compacted air causing the glottis to

open and the resulting decreased air pressure to allow the vocal cords to come together again. The level of frequency of the vibration affects voice formation, the higher the pitch is, the more likely the vocal cords vibrate.

After the larynx, the air goes to **supraglottal** cavities that are to the **pharynx**, the mouth and the nasal cavities. These cavities have their functions they amend the note shaped in the larynx, in the end, comes out from the vocal tract in the form of speech sounds.

Alveolar Ridge: It is a bony hard ridge holds the teeth; the location of the alveolar ridge is just behind the upper teeth we all can feel it with the tip of our tongue.

Hard Palate:

We can feel hard palate when we raise and elevate our tongue and touch the front portion of the top or roof of the mouth. The **hard palate** is a bony structure.

Soft Palate:

The soft palate is also called as **velum**, to feel it in the vocal cavity; you would possibly have to use a fingertip or have to curl the tongue to touch it with. Its location is at the upper back of the mouth. It is a muscular flap. It easily shuts the nasal tract and blocks air going towards the nose.

The Classification and Description of Vowel Sounds

Classification of Vowels:

The vowels are classified based on 'position of the palate', 'part of the tongue raised', 'height of the tongue' and 'position of the lips. Let's discuss these in detail:

Position of the Soft Palate:

If we raise the soft palate (soft palate is the muscular part which constitutes the back of the roof of mouth see fig.1), the air will escape through the mouth

and the resultant vowel sound is oral. However, if the soft palate is lowered, the oral passage gets closed, the nasal passage opens and the air passes through the nostrils which results in the production of a nasal vowel sound.

Part of the Tongue Raised:

In phonetics, the tongue is divided normally into three parts such as the front, the centre, and the back. The tongue as we know is the flexible organ within the mouth. It has the capability of assuming quite a large variety of positions in the articulation of sounds. We know that the tongue is arbitrarily divided into parts and production of vowel sounds depend entirely on it. Therefore, the vowels are classified as the *front, back,* and *central* vowels. Let us take examples to learn it clearly:

Human Mouth Anatomy

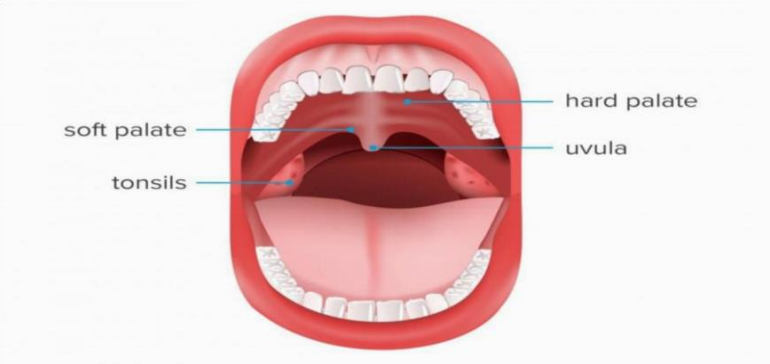


Fig. 4 'Human Mouth Anatomy

The tongue occupies a range of position within the oral cavity. The available space used by tongue to take positions in the oral cavity is known as the "vowel space".

Height of the Tongue:

Vowels can be described based on the tongue raised towards the roof of the mouth: close, open, half-close and half-open. The close-open is not the only

distinction and does not help to distinguish all the back vowels or front vowels. So, to refine the scale regarding the height of the tongue. Imaginary positions between open and close and name them as half-close and half-open positions can be marked. For all this process, see the diagram below:

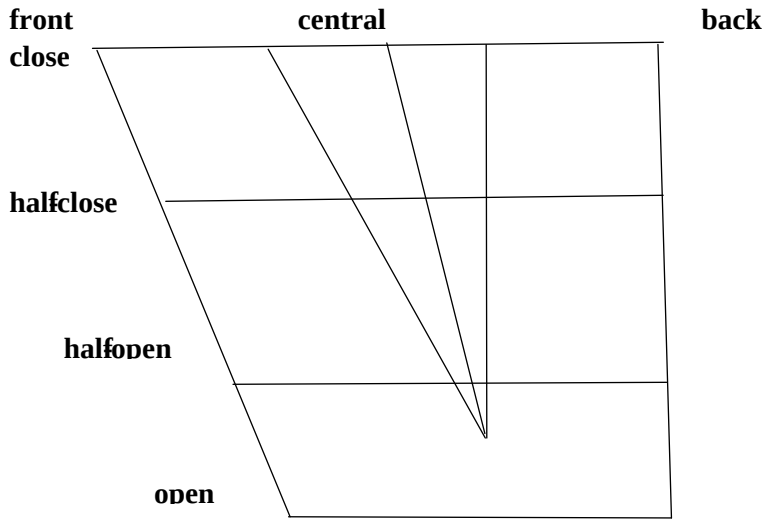


Fig. 5: Tongue raised towards the roof of the mouth

Jones, Daniel 2012

Position of the Lips:

Vowels can be distinguished based on the shape of the lips while producing the vowels. For instance, the vowels in dot and cart, are both back and open vowels. They can be distinguished based on their lip position i.e., rounded and unrounded respectively. The different lip positions are discussed as under:

1) Spread: smiling lip position. Observe the vowels in feel, keen, seat and beat. While producing these vowel sounds our lips come in a smiling position.
2) Open Rounded: observe the vowels in these words: cot, hot, got, odd etc. We find that the position of the lips is brought slightly closer to

each other and lips become slightly rounded while producing these vowels.

3) Neutral: the position where lips are neither rounded nor spread. We can find this type of vowel sound in words like but, hut, bus etc.
4) Open: the position where jaws are apart and we open the lips naturally to produce vowel sound. We can find this type of vowel in words like palm, calm, mask, task and car etc.
5) Back Rounded: here, the lips are brought close together and then pushed slightly forward like in the book, hook, tool, fool, rude, and crude etc.

Description of Vowel Sounds:

Vowels can be described using three-term labels. These are the part of the tongue raised (front, back or central), the height to which the tongue is raised (close, half-close, half-open, open) and the position of the lips (rounded/unrounded). The description unrounded, back, open vowel is the three-term label for the vowel in words like balm and palm.

1) Front Vowels: Heat, sit and get. You can observe that while uttering the vowel sounds in these words, the front part of the tongue is raised.
2) Back Vowels: Palm, ought, tool. While uttering the vowel sounds in these words, back part of the tongue is involved.
3) Central Vowels: Hut, Shut, cut and bird have central vowels because the centre part of the tongue is used in uttering these sounds.

However, Daniel Jones proposed a 'Cardinal Vowel System'. Because it was found that the above three-term labels were not sufficient to describe the vowels in all human languages. Therefore, a new system (Cardinal Vowel System) of reference was devised which can help to describe all vowels appropriately. These eight cardinals are described as under:

1) **Cardinal Vowel Number 1:** It is transcribed as /i/, and is a close, front, unrounded vowel. It is located at the top-left hand corner of the diagram and it is produced with the lips spread (unrounded) and the tongue as high as possible in the vowel space.

2) **Cardinal Vowel Number 2:** It is transcribed as /e/ and is a front, half-close, unrounded vowel. It is produced while the lips remain unrounded and the body of the tongue remains in the front as far as possible.
3) **Cardinal Vowel Number 3:** It is transcribed as /ɛ/ and is a front, half-open, unrounded vowel. It is produced when the lips are unrounded and the body of the tongue remains far in the front as possible.
4) **Cardinal Vowel Number 4:** It is transcribed as /a/. It's located at the bottom left-hand corner of the diagram and is an open, front, untouched vowel. It is produced when the lips are untouched and the body of the tongue remains as low as possible in the vowel space. The tongue is moved as far to the front of the space as possible without causing friction.
5) **Cardinal Vowel Number 5:** It is transcribed as /ɑ/ and is an open, back, untouched vowel. It lies at the opposite end of the vowel space, is made with the lips in a neutral position (unrounded) and with the tongue as low as possible and as far back as possible without causing friction.
6) **Cardinal Vowel Number 6:** It is transcribed as /ɔ/ and is a half-open, back, rounded vowel. It is produced with the lips rounded, the body of the tongue as far back as possible, but the tongue height is lowered further from the half-close position and moves to half-open position.
7) **Cardinal Vowel Number 7:** It is transcribed as /o/ and is a half-close, back, rounded vowel. It is produced with the lips touched and the tongue as far back as possible, however, the tongue is lowered to the half-close position.
8) **Cardinal Vowel Number 8:** It is transcribed as /u/ and is a close, back, rounded vowel. It is produced with the lips rounded and the tongue as far back as possible and as high possible without causing friction.

2. Vowels

Vowels are speech sounds produced without any significant constriction or blockage of airflow in the vocal tract. They are typically voiced and can be classified based on tongue position and lip shape.

Types of vowels

- **Monophthongs (Pure Vowels):** Simple vowel sounds that have a single, unchanging sound quality. Examples include /i:/ (as in "see"), /æ/ (as in "cat"), and /ʌ/ (as in "cup").
- **Diphthongs:** Complex vowel sounds that begin with one vowel sound and glide into another within the same syllable. Examples include /aɪ/ (as in "high"), /eɪ/ (as in "day"), and /ɔɪ/ (as in "boy").

Classification of vowels

Tongue Height: Refers to the vertical position of the tongue (high, mid, low).

- High Vowels: /i:/ (as in "see"), /u:/ (as in "blue")
- Mid Vowels: /e/ (as in "bed"), /ə/ (as in "about")
- Low Vowels: /æ/ (as in "cat"), /ɑ:/ (as in "car")

Tongue Position: Refers to the horizontal position of the tongue (front, central, back).

- Front Vowels: /i:/ (as in "see"), /æ/ (as in "cat")
- Central Vowels: /ə/ (as in "about"), /ʌ/ (as in "cup")
- Back Vowels: /u:/ (as in "blue"), /ɔ:/ (as in "saw")

Lip Shape: Refers to whether the lips are rounded or unrounded.

- Rounded Vowels: /u:/ (as in "blue"), /ɔ:/ (as in "saw") Unrounded Vowels: /i:/ (as in "see"), /æ/ (as in "cat")

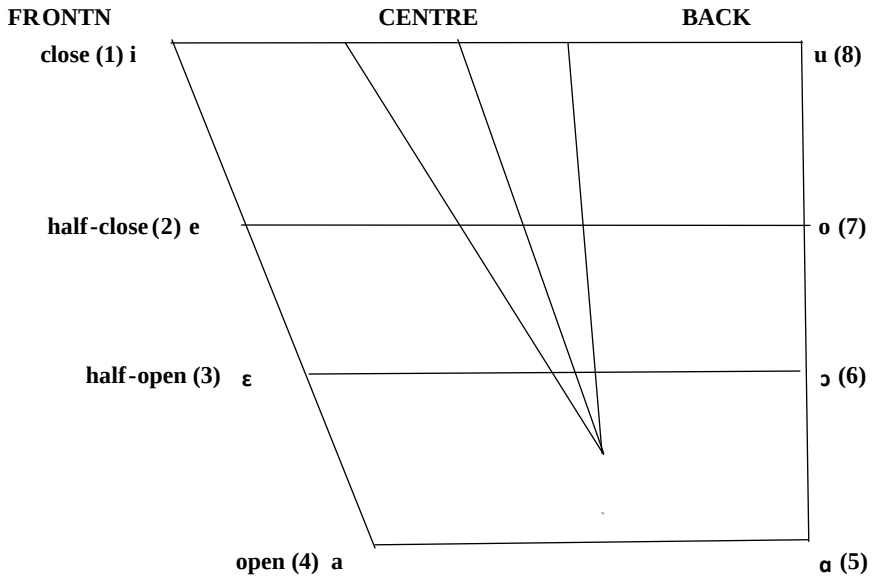


Figure 6: English Vowels Description

Jones, Daniel2012

3. Consonants

Consonants are speech sounds produced with significant constriction or closure at one or more points along the vocal tract. They can be voiced or voiceless.

The word "consonant" is taken from the Greek words "consonautem" which means "sounding together or sounding with". Consonant is a voice sound created using combinations and changes of lip, teeth, tongue, and velum changes with varying amounts of obstruction of the air stream in the mouth. A consonant is either voiced or voiceless. Voiced consonant is produced with vibration of the vocal cords while voiceless is produced without vibration of the vocal cords.

The movements of parts of vocal tract especially the lips, the tip of the tongue, body of the tongue and larynx; which are the major articulators or speech organs result in speech sounds. Once you exhale these articulators affect the flow. The blockage or obstruction from these articulators in the

vocal cavity leads to form the consonants. On the contrary there no obstruction and blockage when we produce vowel sounds, in the articulation of vowel sound the mouth remains quite open. There are several sorts of consonant sounds and forms, however, what all have in common is the flow of air through the vocal tract gets halted. The obstruction varies in degree some consonants get obstructed completely and some partially. In English pronunciation, consonants have a significant role, especially in determining the organs involved in sound production. Consonants play a major role in English pronunciation, especially in determining the articulators involved in the activation and production of sound. So, the major requirement is to know the participation, engagement and contribution of the articulators and speech organs to pronounce consonants.

List of Symbols of English Consonants:

Symbol	**As in the word**
[p] **[b]** **[m]**	***p****ea, **p**arrot, **p**ark, **p**encil, **p**ocket* ***b****all, **b**ee, **b**asket, **b**lue, **b**reak* ***m****ango, **m**ap, **m**aster, **m**aroon, **m**ud, **m**ake*
[t] **[d] [s]** **[z]** **[l]** **[n]**	***t****oe, **t**orch, **t**ruck, **t**aste, **t**en **d**ance,* ***d****ove, **d**onkey, **d**og **s**oup, **s**ip, **s**and,* ***s****on, **s**un, **s**aloon **z**ebra, **z**ip, **z**oo,* ***z****inc, **z**one **l**id, **l**ip, **l**ove, **l**ong, **l**ick,* ***l****arge, **l**ot nose, nest, not, neck,* *narrow, noon*
[k] [**g]** **[ŋ]**	***k****ill, **c**ap, **c**up, **k**ilometre, **k**erosene, **c**ut* ***g****un, **g**oing, **g**uest, **g**reat, **g**etting* *go**ing**, r**ing**, fall**ing**, danc**ing**, duri**ng**, sing**ing***
[f] [v]	***f****an, **f**at, **f**rock, **f**ridge,* *fat**v**an, **v**iolence, **v**elocity,* ***v****ote*
[θ]	***th****ought, **th**ing, **th**orough, **th**row, **thi**nk, **th**ree, **thi**rteen* ***th****at, **th**is, **th**em, **th**e, **th**ey, **th**ese, **th**ose, **th**emselves*

	***sh**eep, **sh**y, **sh**oulder, **sh**un, **sh**e, **sh**ip, **sh**op plea**su**re, mea**su**re, vi**si**on, televi**si**on, conclu**si**on, divi**si**on, **ch**oice, **ch**urch, **ch**ocolate, **ch**imney, **ch**in **j**am, **J**uly, **j**ar, **J**anuary, **j**ust*
[h]	***h**igh, **h**ello, **h**ell, **h**ilarious, **h**ome, **h**all, **h**allow*
[r]	***r**ed, **r**ock, **r**are, **r**od, **r**eal, **r**at*
[j]	***y**outh, **y**ellow, **y**olk, **y**oung, **y**ank*

Table 2: List of Symbols of English Consonants

Classification of Consonants

Consonants are classified based on the place of articulation, manner of articulation, and voicing.

Place of Articulation: The location in the vocal tract where the constriction occurs.

Examples:

- Bilabial: Both lips (e.g., [p], [b]).
- Alveolar: Tongue against the alveolar ridge (e.g., [t], [d]).
- Velar: Back of the tongue against the velum (e.g., [k], [g]).
- Manner of Articulation: How the airstream is modified by the articulators.

Examples:

- Plosive: Complete blockage of airflow followed by release (e.g., [p], [b]).
- Fricative: Narrow constriction causing turbulent airflow (e.g., [f], [v]).
- Nasal: Airflow through the nose (e.g., [m], [n]).
- Voicing: Whether the vocal cords vibrate during the production of the sound.
  Examples: Voiced: Vocal cords vibrate (e.g., [b], [d], [g]).

  Voiceless: Vocal cords do not vibrate (e.g., [p], [t], [k]).

Chapter 3

SOUND PATTERNS IN THE ENGLISH LANGUAGE: VOWELS AND CONSONANTS

3.1 Introduction

The English language learning in the Nigerian school curriculum is targeted towards four language learning skills. These are listening, speaking, reading and writing. Experts in the field of spoken English have observed that of all the skills of language acquisition, more challenges are encountered by English as Second Language (ESL)learners/users in the area of spoken English. Also, the English spoken in Nigeria has been observed to be subjected to pronunciation influences of contact between Nigerian indigenous languages and English. Some of the reasons observed are that many second language learners/users of English find some of the English sounds problematic due to the fact that these sounds are not attested in their mother tongues/first /native languages (L1). Other reasons observed are that the sounds of English may not be well learnt at the early part of education; since these sounds of English were equally taught by non-native speakers of English. The problem of vowel length as well as other pedagogical problems and infrastructural issues have been identified as challenges of spoken English teaching and learning in ESL context like Nigeria. Hence, Akindele (2019) notes that the relations of spoken and written English and the implications for English as second language speakers/users like Nigerian students is a crucial phenomenon which calls for a wide thought and careful statement, especially for reason that English is used as ameans of instruction in Nigerian university educational settings.

This chapter addresses the segmental aspects of spoken English. It exposes the sounds of English (consonants and vowels), parameters for describing the sounds of English, problematic sounds not articulated in students' native

languages, as well as drills on minimal pairs in isolation and in context. The chapter attempts to improve on the spoken English of students by highlighting the various sounds of the English language (consonants and vowels). The chapter further exposes students to the phonemic symbols of English, classification, naming, description, perception and the correct production of the phonemes of English. It also provides drills on these phonemes both in isolation and context, especially in relation to vowel length. Students' production and perception of English segmental phonemes at the end of this chapter is expected to become comprehensible locally, nationally and internationally.

3.2 English Phonemics

In speech, a continuous stream of sounds is produced. This stream of sounds is divided into segments. These segments are called phonemes and the complete set of these units are called the phonemic systems of the language. The word phonemes are the meaning distinguishing sounds in a language. That is, contrastive function is the essential property of phonemes. The basic operational test for determining the phonemes which exist in a language is done through the contrastive property. They are contrastive units in that they distinguish words; thus, representing differences in meaning (Oyelade, 2011). Robins (1980) describe "phonemics" as one of the aspects of the phonic materials which are accounted for in terms of the segmental units (minimal segments) or segmental phonemes which constitute consonants and vowels.

3.3 English Vowel Sounds

Vowels are speech sounds produced without interruption of the passage of air through the vocal tract. The vocal tracts used as a resonating chamber of an airstream vibrating from the action of the vocal cords; and as this suggests, vowels are normally voiced in all languages (Oyelade, 2011, Akindele, 2019). The English vowels may be divided into three main classes: short

vowels, long vowels and the diphthongs. The long and short vowels are known as monophthongs while the double articulated vowels are referred to as diphthongs (i.e12 pure vowels 8 diphthongs). Jones (2006) developed the English cardinal vowel system in terms of common features like height (vertical dimension), backness (horizontal dimension), roundedness and diacritics as the phonetic parameters for naming vowels:

- Short vowels are the vowel sounds that normally sound shorter than any of those in the other classes, and they are: /I/, /e/, /æ/,/ɒ/, /ʌ/, /ʊ/and /ə/.
- Long vowels normally sound longer than any of the short ones. Their relatively long sound is usually indicated by the sign ':' in their phonetic symbols and they are: /iː/, /aː /, /ɔː/, /uː / and /3ː/.
- Diphthongs: vowels are produced with the tongue in a relatively steady state throughout its articulation. A diphthong is produced with the tongue in constant motion throughout, travelling from one vowel position to another. They are: /eɪ/, /eə/, /ɪə/, /uə/ /aɪ/, /aʊ/, /ɔɪ/ and /əʊ/.

Likewise, the position of the high point of the tongue during the production of a vowel effectively defines the size and shape of the two resonating chambers, and thus the quality of the vowel. If the high point is high up towards the front of the mouth e.g. /i:/, it is called high front long vowel. If instead, the high point of the tongue is high up, and towards the back of the oral cavity e.g. /u:/, it is called high back long vowel. For high vowels, the body of the tongue is raised above its neutral or rest position. If the body of the tongue rests at a relatively neutral height, like the vowel /e/ we have a mid-vowel but when the body of the tongue is lowered the results is a low vowel, such as the vowel of /a/. The front- to- back dimension is also usually divided into three: front with the high point relatively front; back with the high point towards the back: and the central, with the high point in between

the central region position (Katamba, 1989; Roach, 2010, Oyelade, 2011). This is illustrated below:

English Pure Vowel Chart

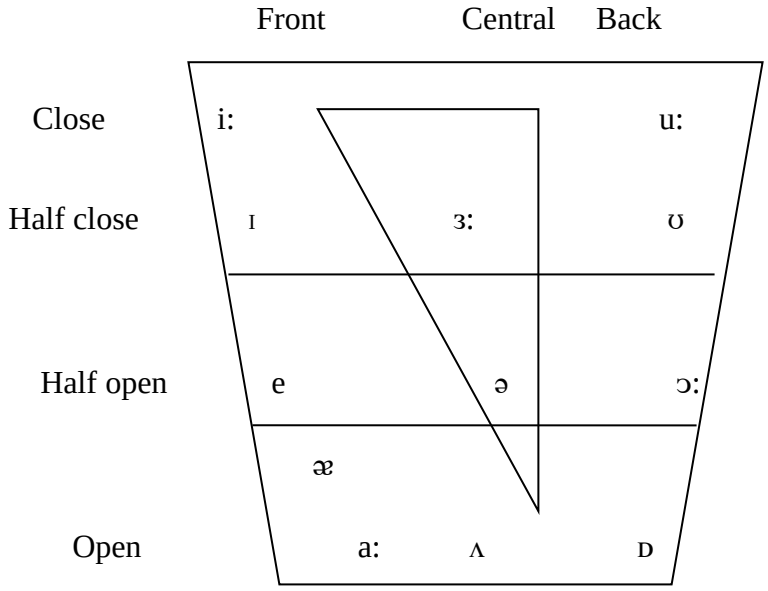


Fig 7: English Pure Vowel

Sources: (Gimson, 1989; Jones, 2006)

Using the phonetic parameters: diacritics, tongue height, backness, and roundness, the English vowels in the above vowel chart are described below:

1. /i:/ long, front, unrounded close vowel
2. /I/ short front unrounded half close vowel
3. /e/ short front unrounded half close vowel
4. /æ/ short front unrounded low vowel
5. /a;/ long front unrounded open vowel
6. /3;/ long central unrounded half open vowel

7. /ə/ short central unrounded vowel
8. /ʌ/ short central rounded mid open vowel
9. /u:/ long back rounded close vowel
10. /ʊ/ short back rounded half close vowel
11. /ɔ;/ long back rounded half open vowel
12. /ɒ/ short back rounded open vowel

Examples of English Vowel Sounds in Context

Monophthongs

1. /i:/ - as in feel /fi:l/, see/si:/, keen /ki:n/, meat /mi:t/, feet /fi:t/
2. /i/ - as in sit /sit/, kit /kit/, wit /kit/, sin /sit/, wig /wig/
3. /e/ - as in beg /beg/, set /set/, net /net/, wet /wet/, get /get/
4. /æ/ - as inman /mæn/, fan /fæn/, sad /sæd, mad /mæd, rat /ræt/ etc
5. /a:/ - as in cart /ka:t/, card /ka:d/, hard /ha:d/, dart /da:t/, mart /ma:t/
6. /ɒ/ - as in cot /kɒt/, pot /pɒt/, hot /hɒt/ cop /kɒp/ stop /stɒp/
7. /ɔ:/ - as in port /pɔ:t/, ford /fɔ:d/, worth /wɔ:Θ/, corp /kɔ:p/, sort /sɔ:t/
8. /ʊ/ - as in put /pʊt/, book /bʊk/, full /fʊl/, cook /kʊk/, school /skʊl/
9. /u:/ - as in too /tu:/, fool /fu:l/, mute /mju:t/, few /fju:/, crew/kru:/
10. /ʌ/ - as in sun /sʌn/, fun /fʌn/, blood /blʌd/, sun /sʌn/
11. /ɜ:/ - as in first /fɜ:st/, third /tɜ:d/, bird /bɜ:d/, shirt /ʃɜ:t/, girl /gɜ:l/
12. /ə/ - as in agree /əgri:/, mother /mʌðə/, father /fæðɵ/, sister /sIstɵ/,

English Closing Diphthongs Chart

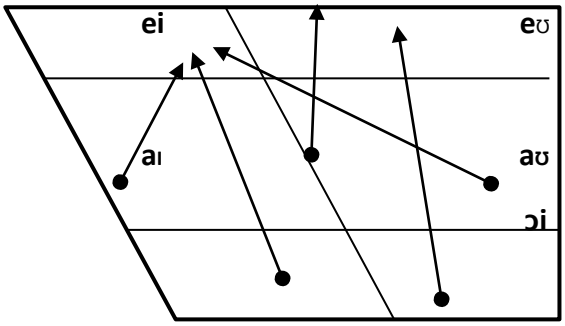


Fig. 8.1: English Closing Diphthongs

English Centring Diphthongs Chart

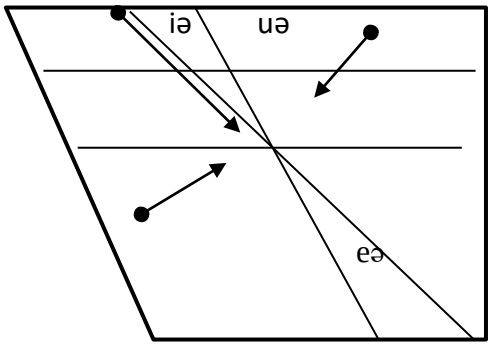


Fig. 8.2 : English Centring Diphthongs

Source: (Jones, 2006)

9. /ei/ -as in day /dei/, rake /reik/, say /sei/, way /wei/, cake /keik/
10. /əu/ -as in told /təuld/, fold /fəuld/, toad /təud/, cold /kəuld/, sold /səuld/
11. /ai**/** -as in high /hai/, my /mai/, buy /bai/, file /fail/, dye /dai/

12. /aʊ/ -as incow /kaʊ/, bow /baʊ/, flour/flaʊ/ / sour /saʊ/, fowl /faʊl/
13. **/ɔɪ/ -**as in boy /bɔɪ/, toy /tɔɪ/, coy /kɔɪ/, soil /sɔɪ/, foil /fɔɪl/
14. **/**iə**/ -** as in fear /fiə/, dear /diə/, seer /siə/,near /niə/ gear /giə/
15. **/**eə**/** - as in bear /beə/, pair /peə/, fair /feə/, care /keə/, there /deə/
16. /ʊə/ - as in pure /pjʊə/, poor /pʊə/,sure/sʊə/ cure /kjʊə/

Drills on Some Problematic English Vowels

Students should say the following pair of words aloud to bring out the differences in the length of vowels. The course instructor should guide students' production in the use of vowel distinction:

1. Fit - Feet
2. Sit -Seat
3. Had -Hard
4. Match -Marsh
5. Head -Heard
6. Mad -Mart
7. Cat -Cart
8. Pot -Port
9. Cod -Cord
10. Bed -Bird
11. Kiss -Keys
12. Pull -Pool
13. Zoo -Sue
14. Pill -Peel
15. Cat - Cart

Exercise I

Students are to say the following words aloud to make obvious the differences between the words in each pair: The class instructor should assist students where necessary especially with differences in vowel length.

1. cat - cart
2. fat - fart
3. mad - mart
4. head - heard
5. bid - bead
6. cut - cot
7. pot - port
8. full - fool
9. bad - bard
10. guess - girls
11. gem - germ
12. sit - seat
13. kin - keen
14. sin - seen
15. wed - word
16. blood-blurred
17. flood - floor
18. pull - pool
19. full - cool
20. lick - leak

3.4 English Consonant Sounds

The production of consonant sounds involves a constriction in the vocal tract that obstructs the flow of air. The air stream is impeded or interrupted somewhere along the way from the lungs to the outside. Hence, consonants are described in relation to the point where the air stream is impeded and how it is impeded. These properties are called place of articulation, manner of articulation and state of the glottis.

The main places of articulation are labial, dental, alveolar, palatal, velar, uvular and glottal.

i. Labial sounds are sounds made with the lips, if both lips are used, the phone is called bilabial. The initial sound of 'mat' /m̲æt/ and 'pat'/p̲æt/ are bilabials and they are made by bringing the lower lip and the upper lip together. Bilabial sounds are; /p/, /b/ and /m/. One can also bring the lower lip into contact with the upper teeth to form a labio-dental. The labio-dental sounds are /f/ and /v/.
ii. Dental sounds are formed with the tongue and the upper front teeth; usually the tip of the tongue is used, and touches the upper front teeth. The dental sounds are;/ θ/ and/ ð/ sounds.
iii. Alveolar sounds are made with the front part of the tongue usually the tip, sometimes the blade-touching or almost touching the alveolar ridge (the ridge on the roof of the mouth just behind the upper teeth). Alveolar sounds are; /t/ /d/ /s/ /z/ /n/.
iv. Palatal sounds are made with contact (or approximation) between the tongue and the palate. If this is in the front part of the palate, immediately behind the alveolar ridge; the sound is a palato-alveolar, and these sounds are; /ʃ/, /ʒ/, /ʧ/, /ʤ/. The words shoe, shine shoot, shade, measure, treasure, judge, jump, jug, cheat, chain, charm, begins with palato-alveolar sounds.

v. Velar sounds are consonants made with the back of the tongue touching the velum. Velar sounds are /k/ and /g/. The nasal sound at the end of the word king is also a velar.
vi. Glottal consonants involve a constriction of the glottis or opening between the vocal folds. It is produced by holding the vocal folds together and then releasing them. The glottal sound is /h/.

The manner of articulation is the way sounds are produced. According to Gimson (1989), the manner of articulation is:

a. Plosives are any sound that has complete closure or blockage of the air stream is stop or plosive. Stops can be made at (almost) any place of articulation, from the glottis to the lips.
b. Nasals are sounds produced by lowering the velum to permit air to flow through the nose. Nasal constants are like stops in having a complete blockage of the airstream through the oral cavity; but they allow the air to flow freely through the nasal cavity. Thus, for the sound /m/, there is the complete closure of the oral cavity at the lips, as in /b/ and /p/; but the velum is lowered, and the air flows out through the nose.
c. Fricatives are produced with incomplete closure at the place of articulation. A narrow passage is left open through which the airstream is forced, giving rise to a 'noisy' sound. Fricatives can be produced at any place of articulation, from the lips to the glottis. English has both voice and voiceless fricatives.
d. Affricates are sounds produced by combining a stop and a fricative. English has two affricates: palato-alveolar; voiceless /ʧ/ and voiced /ʤ/.
e. Lateral sound is produced with the side tongue lowered at the point of articulation, allowing air to pass on both sides of a central closure.

The most common place of articulation of lateral is at the alveolar ridge.

f. Approximants involve proximity rather than contact at the place of articulation.

g. **Sources (Katamba, 1989, Gimson, 1989, Oyelade, 2011)**

This is further illustrated in the English consonant chat below:

	Bilabial	Labio-Dental	Dental	Alveolar	Palato-Alveolar	Palatal	Velar	Glottal
Plosive	p b			t d			k g	
Fricative		f v	θ ð	s z	ʃ ʒ			h
Affricate					ʧ ʤ			
Nasal	M			n			ŋ	
Lateral				*l*				
Approximant				r		j	w	

Table 3: English Consonant chart

Examples of English Consonant Sounds in Context

Bilabial

/p/ as in /pen/'pen' /peg/'peg'/ pIg/'pig'

/b/ as in /bi:t/'beat'/bæt/'bat' /bæg/ 'bag'

/m/ as in /mæt/'mat' /mæn/ 'man' /meid/ 'made'

Labio-dental

/f/ as in /fæt/ 'fat' /fæn/ 'fan' /faiv/ 'five'

/v/ as in /vest/ 'vest' /vəƟt/ ' vote' /vain/ 'vine'

Dental

/θ/	as in	/θai/‘thigh’ /θink/ ‘think’ /wɔθ/ ‘ worth’
/ð/	as in	/ðei/ ‘they’ /fæðə/ ‘father’ /wɔði/ ‘worthy’

Alveolar

/t/	as in	/tæp/‘tap’ /tin/ ‘tin’ /tiʧ/ ‘teach’
/d/	as in	/dei/ ‘day’ /deit/ ‘date’ /drai/ ‘dry’
/s/	as in	/sit/ ‘sit’ /sli:p/ ‘sleep’ /slIm/ ‘slim’
/z/	as in	/zu:/ ‘zoo’ /zInk/ ‘zinc’
/n	as in	/naim/‘name’ /nait/ ‘knight’ /nʌ*l*/ ‘null’
/l/	as in	/lait/ ‘light’ /*l*ɔŋ/ ‘long’ /leit/’late’
/r	as in	‘right’ /rait/ ‘write’ /reik/ rake’

Palato-alveolar

/ʃ/	as in	/ʃi:/ ‘she’ /ʃain/ ‘shine’ /ʃeik/ ‘shake’
/ʒ/	as in	/meʒə/ ‘measure’ /treʒɵ/ /pleʒɵ/ ‘pleasure’
/ʧ/	as in	/ʧin/ ‘chin’ /ʧi:p/ ‘ cheap’ /ʧa:m/ ‘charm’
/ʤ/	as in	/ʤn/ ‘gin’ /ʤʌʤ/ ‘ judge’ /ʤʌmp/ ‘jump’

Palatal

/j/	as in	/ju:/ ‘you’ /juɵ/ /’ youth’ /jæm/ ‘yam’

Velar

/k/	as in	/kæt/ ‘ cat’ /kiŋ/ ‘king’ /kæp/ ‘cap’
/g/	as in	/gla:s/‘glass’ /gʊd/ ‘good’ /geit/ ‘gate’
/ ŋ	as in	/ræŋ’rang’ /sɔŋ/ ‘song’ /wiŋ/ ‘wing’
/w	as in	/wɪg/‘ wig’ /wɪn/ ‘win’ /wi:d/ ‘weed’

Glottal

/h/	as in	/ha:t/‘ hat’ /he*l*p/ ‘help’ / haid/ ‘hide’

English Consonants Drill

1. Ferry - Very
2. Theme - Team
3. Pressure- Measure
4. Serf - Serve
5. Sieve - Chief
6. Hand - And
7. True - Through
8. Infest - Invest
9. Tick - Thick
10. Tin - Thing

Exercise II

Students should produce the following words aloud after the course instructor in class: van, vast, vest, view, voice, vary, of, thick, think, through, three, thigh, thread, this, then, that, them, sit, science, cell sell, skeptical, soon, set, access, zebra, zoom, zeal, zealot, zealous, boys, scissors, shoe, shell, shield, shall, shirt, shrink, she, shelf, shoot, machine, treasure, seizure, vision, leisure, measure, hat, hid, hall, heel, who, he, hear, house, high, hear.
Source (Atoye, &Adejuwon, 2010)

Chapter 4
PHONEMIC ANALYSIS

4.1 Introduction

Phonemic analysis is a cornerstone of phonological theory that provides a systematic framework to understand how sounds function in language. It involves understanding the sound system of a language by identifying its phonemes, allophones, and phones, and understanding how these sounds function to distinguish meaning.

Phonemic analysis looks at how sounds work in languages. It focuses on finding and studying the smallest sound units that can change the meaning of words, called phonemes. It also looks at how these sounds can vary in different situations, known as allophones, and the actual sounds we produce, called phones. The study of phonemic analysis started in the early 20th century when linguists began to move from simply describing sounds to creating theories about how sound systems work.

The idea of phonemic analysis comes from the work of Ferdinand de Saussure, a famous linguist. He made a distinction between langue (the abstract system of language) and parole (how people actually use language). This helped linguists understand that phonemes are not just sounds but abstract categories in our minds. Later, linguists from the Prague School, like Nikolai Trubetzkoy and Roman Jakobson, built on this idea. Trubetzkoy, in his book Principles of Phonology (1939), introduced the concept of opposition, where phonemes are different because of features like voicing or nasality. For example, in English, /p/ and /b/ are different because /b/ is voiced, while /p/ is not. This idea became very important in the study of language sounds. In the mid-20th century, Noam Chomsky and Morris Halle developed a new approach called generative phonology. In their book The Sound Pattern of English (1968), they argued that speakers have an innate understanding of the rules that control how sounds are used in their language. This theory changed how linguists thought about phonology and influenced

many areas, including language learning, speech therapy, and computer speech technology.

4.2 Phonemes, Allophones and Phones

- **Phonemes:** A phoneme is defined as the smallest unit of sound that can create a distinction in meaning within a particular language. According to the linguist Nikolai Trubetzkoy (1939), phonemes are understood as abstract mental representations of sounds, rather than the physical manifestations of those sounds in speech. For example, in English, the words "bat" and "pat" are differentiated by their initial sounds, /b/ and /p/, respectively. This initial sound contrast means that /b/ and /p/ are recognised as distinct phonemes because they change the meaning of the words they occur in. The concept of phonemes became particularly prominent through the works of influential structuralist linguists, including Ferdinand de Saussure and later members of the Prague School. Within this framework, phonemes function as part of an interconnected system where the identity of each phoneme is defined by its relationships and contrasts with other phonemes (Jakobson, 1962). As noted by Leonard Bloomfield (1933), identifying phonemes often involves analysing "minimal pairs." Minimal pairs are pairs of words that only differ by a single sound while holding different meanings, such as "bat" and "pat." The existence of these minimal pairs effectively demonstrates that the contrasting sounds are indeed different phonemes, as their substitution results in a change in meaning.

- **Allophones:** Allophones are different ways to pronounce a phoneme that do not change a word's meaning. Phonemes are general ideas, while allophones are the actual sounds we make when speaking (Ladefoged, 2001). For example, the English phoneme /t/ has different allophones: in the word "top," it sounds like [t^h] (aspirated), while in "stop," it sounds like [t] (unaspirated). People who speak English usually hear these variations as the same sound.

  Allophones can be grouped into two categories: "complementary distribution" and "free variation." Complementary distribution

happens when allophones occur in separate situations. For example, the aspirated [tʰ] appears in "top," and the unaspirated [t] appears in "stop." Free variation occurs when different pronunciations can happen in the same context without changing the meaning. For instance, the last sound in "cat" can be pronounced either as a released [t] or an unreleased [t̚] (Clark et al., 2007).

- **Phones:** Phones are the specific speech sounds that we produce with our mouths and that listeners hear. These sounds differ from phonemes, which are the abstract units of sound used in a language. Phones are the actual sounds we can measure and observe, making them a key focus in phonetics. Every spoken sentence contains a series of phones, which we can transcribe using the International Phonetic Alphabet (IPA), a system designed to represent different speech sounds accurately (Ladefoged & Johnson, 2014).
  In speech analysis, phonologists identify the phones that contrast with each other in a language. This process helps establish the phonemic inventory, or the set of sounds a language uses. For example, in English, the sound [p] in "spin" and the sound [pʰ] in "pin" are different phones. However, English speakers recognise them as variations of the same phoneme, /p/, showing how actual sounds relate to the mental concepts of sounds.

4.3 Distinguishing Phonemes from Allophones

To distinguish phonemes from allophones, we look at:

- **Minimal Pairs**: Pairs of words that differ by only one phoneme, demonstrating that the differing sounds are distinct phonemes. For example, “bit” and “pit” show that /b/ and /p/ are different phonemes.
- **Complementary Distribution:** When sounds do not occur in the same phonetic environment and are considered allophones of the same phoneme. For example, [pʰ] occurs at the beginning of a word like “pat,” while [p] occurs after an /s/ as in “spat”.
- **Free Variation:** When allophones can occur in the same environment without changing the meaning of the word. For

example, the word "economics" can be pronounced with either [iː] or [ɛ].

4.4 Allophonic Variants of the English Phonemes

1. /p/:

- [pʰ] (aspirated): "pat"
- [p] (unaspirated): "spat"

2. /t/:

- [tʰ] (aspirated): "top"
- [t] (unaspirated): "stop"
- [ɾ] (flapped): "butter" (in American English)

3. /k/:

- [kʰ] (aspirated): "kit"
- [k] (unaspirated): "skit"

4. /l/:

- [l] (clear l): "leaf"
- [ɬ] (dark l): "feel"

5. /ɹ/:

- [ɹ] (alveolar approximant): "red"
- [ɻ] (retroflex approximant): "butter" (in some dialects)

4.5 Criteria for Classifying Sounds as Phonemes or Allophones

The classification of sounds as phonemes or allophones is a central issue in phonology. This process involves analysing the distribution and phonetic properties of speech sounds to determine their functional roles in a language.

1. **Contrastive Distribution:** Contrastive distribution occurs when two sounds appear in the same phonetic environment and substituting one sound for other results in a change of meaning. In this case, the sounds are classified as separate phonemes. For instance, in English,

the words "bat" [bæt] and "pat" [pæt] differ only in the initial sounds [b] and [p], yet the meaning changes entirely. This indicates that [b] and [p] are distinct phonemes in English (Ladefoged & Johnson, 2014). The principle of minimal pairs is often employed to identify contrastive distribution. A minimal pair consists of two words that differ by only one sound in the same position, demonstrating that the differing sounds create a change in meaning. The identification of minimal pairs is a key method for determining phonemic status in any language (Yule, 2016). When no minimal pairs can be found, other criteria must be applied.

2. **Complementary Distribution** Complementary distribution occurs when two or more sounds never appear in the same phonetic environment, meaning that their occurrence is predictable based on context. In such cases, the sounds are considered allophones of a single phoneme. For example, in English, the [p] sound in "pin" [pʰɪn] is aspirated, while in "spin" [spɪn] it is unaspirated. The aspirated [pʰ] and unaspirated [p] do not occur in the same environment, indicating that they are allophones of the phoneme /p/ (Carr, 2013). The principle behind complementary distribution is that allophones represent contextually conditioned variations of a phoneme. They do not create new meanings, but rather provide different surface realizations depending on linguistic context (Odden, 2005). The inability of these sounds to contrast in the same environment reinforces their allophonic relationship.

3. **Phonetic Similarity** Phonetic similarity refers to the idea that allophones of the same phoneme share certain phonetic properties. Sounds classified as allophones typically exhibit similarities in place of articulation, manner of articulation, or voicing. For instance, the dark [ɪɪ] and light [l] in English are allophones of the phoneme /l/, as they are both lateral approximants and share key phonetic features (Clark et al., 2007). Phonetic similarity is crucial in ensuring that sounds grouped under the same phoneme are not arbitrarily related. Without phonetic similarity, the classification of sounds as allophones would lack coherence and explanatory power. However, the degree of similarity required can vary across languages, making this criterion somewhat language-specific (Hayes, 2009).

4.5.1 Consonants:

- Plosive: /p, b, t, d, k, g/
- Fricative: /f, v, θ, ð, s, z, ʃ, ʒ, h/
- Affricate: /tʃ, dʒ/
- Nasal: /m, n, ŋ/
- Approximant: /r, j, w/
- Lateral Approximant: /l/

4.5.2 Vowels:

- Short Vowels: /ɪ, e, æ, ʌ, ɒ, ʊ, ə/
- Long Vowels: /iː, uː, ɜː, ɔː, ɑː/
- Diphthongs: /eɪ, aɪ, ɔɪ, aʊ, əʊ, ɪə, eə, ʊə/
- Triphthongs: /aɪə, aʊə/

4.6 Consonant and Vowel Contrast Minimal Pair/Set Drills

Syllable-initial Position:

Consonants:

- /p/ vs. /b/: “pat” vs. “bat”
- /t/ vs. /d/: “tap” vs. “dap”

Vowels:

- /ɪ/ vs. /iː/: “sit” vs. “seat”
- /æ/ vs. /ɑː/: “cat” vs. “cart”

Syllable-medial Position:

Consonants:

- /p/ vs. /b/: “open” vs. “urban”
- /t/ vs. /d/: “eating” vs. “ending”

Vowels:

- /ɪ/ vs. /eɪ/: “sitting” vs. “sating”
- /ʊ/ vs. /uː/: “foot” vs. “food”

Syllable-final Position:

Consonants:

- /p/ vs. /b/: “cap” vs. “cab”
- /t/ vs. /d/: “cat” vs. “cad”

Vowels:

- /ʌ/ vs. /ə/: “but” vs. “butter”
- /ɒ/ vs. /ɔː/: “cot” vs. “caught”

4.7 English Phonotactics

Phonotactics refers to the allowed arrangements of sounds in a language. In English:

- **Onset Clusters**: Can have up to three consonants (e.g., “street” /str-/).
- **Coda Clusters:** Can have up to four consonants (e.g., “twelfths” /lfθs/).
- **Syllable Structure**: English syllables typically follow a (C)(C)(C)V(C)(C)(C)(C) pattern, where C is a consonant and V is a vowel.

4.8 The Function of Phonemes

Phonemes function to differentiate meaning in words. Changing a phoneme changes the meaning of a word:

- **Minimal Pairs:** Demonstrate phonemic differences (e.g., “bat” vs. “pat”).
- **Allophones:** Do not change meaning but provide phonetic variation (e.g., [p^h] vs. [p]).

Phonemic Function: Significant For Meaning

Phonemes are crucial for distinguishing words and meanings in a language. For example, /p/ and /b/ in “pat” vs. “bat” illustrate how different phonemes create different words with different meanings.

The Allophones of the Phonemes

Allophones provide variations of phonemes in different contexts without altering meaning:

- **Context-dependent:** Allophones appear in specific phonetic environments (e.g., [t^h] at the beginning of a word vs. [t] after /s/).
- **Free Variation:** Allophones can sometimes appear interchangeably without affecting meaning (e.g., "economics" pronounced with [iː] or [ɛ]).

The distinction between phonemes and allophones and their respective roles in phonemic analysis is essential for grasping the nuances of English pronunciation and phonology.

Chapter 5

REPRESENTATION OF SPEECH SOUNDS

5.1 What is Transcription?

Transcription in phonetics refers to the representation of speech sounds in a systematic and standardised written form. This process involves analysing the auditory features of speech and converting them into symbols that accurately depict their pronunciation. Transcription is a crucial tool in linguistics, enabling researchers to document, compare, and analyse spoken languages in ways that bypass the limitations of traditional orthography (Ladefoged, 2006).

Orthographic systems often fail to represent the nuances of spoken language, as they are influenced by historical, cultural, and functional factors rather than pure phonetic accuracy. For instance, the English spelling of words like *knight* (/naɪt/) and *thought* (/θɔt/) does not align with their pronunciation. Transcription, therefore, bridges this gap by providing a means to document sounds as they are actually produced.

According to Abercrombie (1967), transcription is an indispensable aspect of phonetic and phonological studies, allowing linguists to focus on speech sounds' articulatory and acoustic properties. It is particularly relevant for studying variations in accents, dialects, and speech disorders, as well as for language teaching and documentation.

5.2 The International Phonetic Alphabet (IPA)

The International Phonetic Alphabet (IPA) is the most widely accepted system of phonetic transcription, designed to represent the sounds of all spoken languages in a consistent and universal format. Developed by the International Phonetic Association in 1888, the IPA has undergone several revisions to accommodate new discoveries in phonetics and to refine its accuracy and usability (IPA, 1999).

5.2.1 Features of the International Phonetics Alphabet

1. Comprehensive Coverage:

The IPA includes symbols for consonants, vowels, suprasegmental features (e.g., stress, tone, and intonation), and diacritics for capturing finer details of articulation. For example:

i. [p] for the voiceless bilabial plosive.
ii. [ɪ] for the lax high front vowel in "bit"
iii. ̃[] for nasalization, as in [mã] for a nasalised version of *ma*.
iv. Unambiguous Representation:

Each symbol corresponds to a single sound, avoiding the ambiguities often found in orthographic systems. For instance, the letter "a" in English can represent multiple sounds (/æ/ in "cat," /ɑː/ in "father," /eɪ/ in "mate"), but in IPA, each sound is uniquely identified.

2. Cross-Linguistic Applicability:

The IPA transcends linguistic boundaries, making it possible to document the phonetics of any language accurately, from widely spoken ones like English to endangered languages with limited orthographic traditions.

Applications of the IPA

i. Linguistics and Phonetics: Analysis of language sound systems and their variations.
ii. Language Teaching: Assisting learners in mastering pronunciation.
iii. Speech Therapy: Diagnosing and treating articulation disorders.
iv. Language Documentation: Recording and preserving the sounds of endangered languages.

3. Sound Transcription

Sound transcription is the practice of using the IPA or similar systems to capture the pronunciation of speech. It allows linguists to transcribe the sound patterns of languages systematically. Two major types of transcription, "broad transcription" and "narrow transcription," serve different analytical purposes.

- **Broad Transcription**

Broad transcription, also known as "phonemic transcription," captures the phonemes of a language without detailing finer phonetic variations. It focuses on sounds that are contrastive and meaning-distinguishing within a particular language. Broad transcription is particularly useful for teaching and learning because it focuses on the phonemic contrasts that are significant in a particular language (Crystal, 2008). However, it does not account for allophones or variations in pronunciation. These transcriptions are enclosed in slashes (/ /).

Example:

i. The word "pat" is transcribed as /pæt/.
ii. The word "bat" is transcribed as /bæt/.
iii. The word "cat" is transcribed as /kæt/.

In this representation, only the phonemes are noted, ignoring subtle differences in articulation (e.g., aspirated or unaspirated sounds). Broad transcription is commonly used in language teaching and phonemic analysis because it simplifies the representation of speech and focuses on functional contrasts within a language (Crystal, 2008).

- **Narrow Transcription**

Narrow transcription, also referred to as "phonetic transcription," provides a detailed account of how sounds are produced, including allophonic variations, coarticulatory effects, and individual speaker characteristics. It uses additional diacritic marks and is enclosed in square brackets ([ ]).

Examples:

i. The word "pat" might be transcribed as [pʰæt], where [ʰ] indicates aspiration.
ii. The word "little" might be transcribed as [ˈlɪʔl̩], showing a glottal stop [ʔ] and a syllabic consonant [l̩].

Ladefoged and Johnson (2015) argue that narrow transcription is vital for phonetic fieldwork and research, as it captures the subtleties of speech that broad transcription overlooks.

Broad vs. Narrow Transcription

Aspect	**Broad Transcription**	**Narrow Transcription**
Focus	Phonemes (contrastive sounds)	Allophones and phonetic details
Symbols	Basic IPA symbols	IPA symbols with diacritics
Representation	General pronunciation patterns	Fine-grained articulatory and acoustic detail
Enclosure	Slashes (/ /)	Square brackets ([ ])
Example	/kæt/	[kʰæt]

Table 4: Broad vs. Narrow Transcription

Broad transcription is easier to use and focuses on meaningful contrasts, making it ideal for general linguistics and teaching. Narrow transcription, while more complex, is indispensable for precise phonetic analysis and specialised applications.

Chapter 6

ENGLISH SUPRASEGMENTALS: THE SYLLABLE

6.1 Definition and Description

A syllable is a unit of organization for a sequence of speech sounds. It typically consists of a vowel sound or a syllabic consonant, often surrounded by consonants. The syllable serves as a building block of words and contributes to the rhythm and intonation of speech.

6.2 The Structure of the English Syllable

An English syllable can be divided into three main parts:

1. Onset: The initial consonant or consonant cluster of the syllable.
2. Nucleus: The core of the syllable, usually a vowel or a syllabic consonant.
3. Coda: The final consonant or consonant cluster of the syllable.

The combination of these parts forms the syllable structure:

- Onset + Nucleus (CV): “to”
- Nucleus + Coda (VC): “at”
- Onset + Nucleus + Coda (CVC): “cat”

6.3 Consonant Clusters: Phonotactics

Phonotactics refers to the allowed combinations of sounds in a particular language. English has specific rules for permissible consonant clusters at the beginning (onset) and end (coda) of syllables.

- **Onset Clusters**: English allows up to three consonants in the onset position.

Examples: /str/ in “street,” /spl/ in “splash.”

- **Coda Clusters:** English allows up to four consonants in the coda position.

Examples: /lft/ in “twelfths,” /mpst/ in “attempts.”

6.4 Open and Closed Syllables

- Open Syllable: Ends with a vowel sound (no coda).

Example: “go” (/ɡoʊ/)

- Closed Syllable: Ends with one or more consonants (has a coda).

Example: “cat” (/kæt/)

6.5 Syllable Words

Words can be categorised based on the number of syllables they contain:

- **Monosyllabic Words**: Words with one syllable.

Example:“ cat,”“dog”

- **Disyllabic Words**: Words with two syllables.

Example: “table,”“happy”

- Polysyllabic Words: Words with more than two syllables.

Example: “university,”“beautiful”

6.6 Syllabic Consonants

Syllabic consonants occur when a consonant serves as the nucleus of a syllable, typically in unstressed syllables. Common syllabic consonants in English include /l/, /n/, and /m/.

Examples:

- /l/: “bottle” (/ˈbɒtl̩/)
- /n/: “button” (/ˈbʌtn̩/)
- /m/: “rhythm” (/ˈrɪðm̩/)

6.6.1 Strong and Weak Syllables

Syllables in English can be classified as strong or weak based on their stress and vowel quality:

Strong Syllables: Typically stressed and contain a full vowel (e.g., /iː/, /æ/).

Example: The first syllable in “happy” (/ˈhæpi/).

Weak Syllables: Typically, unstressed and often contain a reduced vowel such as schwa (/ə/).

Example: The second syllable in “sofa” (/ˈsəʊfə/).

Chapter 7

ENGLISH SUPRASEGMENTALS: STRESS

7.1 Definition of English Stress

Suprasegmentals are features of speech that extend over more than one segment (phoneme) of language. They include elements such as stress, intonation, pitch, and rhythm. In this chapter, we will focus on stress, one of the most important suprasegmental features in English phonology, which plays a crucial role in word meaning, sentence structure and overall communication.

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

Christopherson (1956 pg. 153) says... a certain syllable... uttered with great energy... air is ejected from the lungs with more effort and the other speech organs perform their actions with more vigour... the total effect is that the stressed syllable seems louder than the others.

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

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

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

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

Akindele (2008) citing Ladefodged (2007 pg. 92) also avers that:

> *a stressed syllable is that syllable which is produced with more muscular energy, which can result in increase in pitch, loudness and length.*

More so, stressed syllable is pronounced with more force than an unstressed one. There is more vibration of the vocal cord in a stressed syllable. Indeed, stress gives prominence to a syllable. Therefore, any meaningful discussion about stress without recourse to the syllable will be considered false and illegitimate, if a definition of stress 'as the degree of force with which a syllable is uttered' (Jones, 1972 pg. 247) is anything to go by. This shows that the syllable is the linguistic unit upon which a stress is superimposed. Simply put, the syllable is the domain of stress.

From the above, you can clearly adduce, define and explain the concept of stress. But additionally, information to know of the English stress is that three levels of stress are recognised In English, stress is an important feature that affects the meaning and structure of speech. There are several levels of stress that can occur in English, and they can be broken down as follows:

1. **Syllable Stress (Word Stress)**

Primary Stress: This is the strongest type of stress, placed on the most important syllable in a word. For example, in the word "banana", the primary stress is on the second syllable: ba-NA-na.

Secondary Stress: This is a slightly weaker stress that can appear in longer words, typically on another syllable that isn't the one with primary stress.

For example, in the word “unbelievable”, the secondary stress is on the first syllable: UN-be-LIEV-able.

Unstressed Syllables: These syllables receive no emphasis. For example, in the word “photograph”, the syllable “to” is unstressed: PHO-to-graph.

2. Sentence Stress

Sentence stress refers to the relative emphasis placed on certain words within a sentence, which contributes to the rhythm, meaning, and overall intelligibility of spoken language. In English, sentence stress plays a important role in conveying meaning, as it presents key elements and can subtly alter interpretations based on emphasis.

7.1.1 Content and Function Words

A fundamental principle in English sentence stress is the distinction between content words and function words. Content words are typically stressed because they carry the core meaning of a sentence. These include nouns, main verbs, adjectives, and adverbs (Roach, 2009). For example, in the sentence “She bought a new car,” the words “bought,” “new,” and “car” are stressed, providing the listener with essential information. Function words, on the other hand, usually remain unstressed. These words serve grammatical purposes and include articles (a, the), conjunctions (and, but), prepositions (in, at), and auxiliary verbs (is, has) (Cruttenden, 2014). In the aforementioned sentence, “she” and “a” are unstressed, ensuring that the focus remains on the content words.

7.1.2 Contrastive Stress

This is used to emphasise a particular word to show contrast or importance. Contrastive stress highlights a particular word to show contrast or importance, often altering the meaning of a sentence. For example, in the sentence, "I wanted chicken, not fish," the stress on "chicken" signals the speaker's preference, thereby contrasting it with "fish." Contrastive stress is especially significant in argumentation and persuasion, where speakers intentionally stress specific elements to draw attention or counter opposing views (Wells, 2006).

7.1.3 Emphatic Stress

This is used to give emphasis to a particular word for stronger meaning or emotional impact. Emphatic stress is the deliberate act of placing special emphasis on a word in a sentence to make it stand out. It signals to the listener that the speaker wants to draw attention to a specific idea, correct a misunderstanding, or convey strong emotions like surprise, anger, or excitement. In English, stress usually lands on certain syllables naturally, but when speakers want to make a point, they break the norm by adding extra force to a word. This added stress makes the message more expressive, ensuring the listener gets the intended meaning. For example, "I did tell you the truth!" emphasises the word "tell" to show frustration or insistence; "I said I wanted the **blue** car, not the red one.", **blue** is emphasised to correct a misunderstanding.

7.2.4 Rhythmic Stress

English is a stress-timed language, meaning that the time between stressed syllables tends to remain relatively constant. Unstressed syllables are compressed to fit this rhythm, leading to variations in pronunciation and pacing.

These levels of stress help in distinguishing meaning, making speech natural, and ensuring proper communication. Understanding stress patterns is crucial for both speaking and listening in English.

7.2 The Nature of Stress

Stress, as said earlier, is a prosodic, suprasegmental or no segmental feature which has the syllable as its domain. Stress by nature, is quite elusive and thus defies a single all- encompassing definition, the reason being that its definition varies from one scholar or author to another depending on their perception or concern. Each definition has its strong and weak points. This explains why there are many definitions of stress as there are authors and scholars.

Roach (1997) is of view that the nature of stress is simple enough practically everyone would agree that the first syllable of words like 'father ''open'

camera is stressed, that the middle syllable is stressed in potato, apartment relation and the final syllable is stressed in receive, perhaps. And most people feel that they have some sort of idea about what it means and differences between stressed and unstressed syllables, though they might explain it in many different ways, we will mark a stressed syllable in transcription by placing a small vertical line 'high up' just before the syllable it relates to.

Uche (1998), Citing Qurk and Greenbaum (1973) describes stress as the prominence with which a word or a part of a large utterance is distinguished from other parts, Roach (1992 pg. 108) states that it seems more likely that stressed syllables are produced with greater effort than unstressed syllables which are manifested in the air pressure generated in the lungs for producing the syllable and also in the articulatory movement in the vocal tract.

Roach (1991) cited in Oyebamiji (2015) also observes stress is a sound phenomenon that can be studied from two perspectives: production and perception production here means the production of stress syllables which requires greater muscular effort than the production of unstressed syllable. From the point of perception, stressed syllables are prominent. Prominence which could occur on a syllable within a word or a word within a sentence is the total sum of the loudness, length, pitch and quality of an utterance prominence is realised by a single pause in a word or sentence. Laver (1994) concedes to this by stating that;

> *Other things being equal, one syllable is more prominent than the other to the extent that is constituent segments display higher pitch, greater loudness, longer duration or greater articulatory excursion from the neutral disposition of the vocal tract.*

The domain of stress is the syllable and a syllable could be stressed or unstressed. The production of stressed syllables requires more muscular force than the production unstressed syllables. While producing stressed syllables, muscles that are used to expel air from the lungs are active, producing higher sub glottal pressure. The stressed syllable is usually indicated by either capitalization (for example, National) or the use of a

diacritic mark (for example ‘national). However, throughout this project work, capitalization shall be used to indicate stressed syllables.

Ladefoged (2001) also sees stressed syllables as that it seems that stressed syllables are produced with greater effort than unstressed syllables which are manifested in the air pressure in the lungs for producing the syllables and also in the pressure generated in the lungs for producing the syllables and also in the articulatory movement of the vocal tract. Ladefoged and Keith (2011) believe that:

> *Stress tends to recur at regular intervals. But the sound pattern of English does not make it an overriding necessity to adjust the length of a syllable to enforce complete regularity. The interval between stresses is affected by the number of stressed syllables within the stress group, by the number and type of vowels and consonants within each syllable and by other factors such as the variations in emphasis that are given to each word.*

Stress therefore centre’s on emphasis and prominence and when used correctly, could not only produce the intended meaning of the utterance but could also serve as a marker of competence in the English language. However, when used wrongly it could distort meaning and breakdown of mutual intelligibility.

7.2.1 Free Versus Fixed Stress

English is a free-stress language meaning that stress can be placed on any syllable in the word, whereas fixed-stress languages have one syllable that is always stressed.

Fixed stress is a language in which the position of the stress can usually be predicted by a simple rule are said to have fixed stress. For example, in Czech, Firnmish, Icelandic, Hungarian and Latvian, the stress always comes on the first syllable of a word.

7.2.2 Word Stress in English

The unpredictability of English stress is no doubt responsible for its being complex. Unlike French where the last syllables of words are assigned stress. English stress cannot be arbitrarily predicted. Akindele (2007). Stress pattern of words is fixed in English to the extent that we cannot arbitrarily shift stress around without compromising meaning. Some linguists are of the view that stress should be seen as the distinctive property of individual words, due to its complex nature.

However, stress placement is also free, in that, different words can have different stress pattern. This is contrast to some other languages. In apparent support of this claim, Gimson (1980 pg. 221) says:

> *The accentual pattern of English words is fixed, in the sense that the main accent always falls on a particular syllable of any given word. but free, in the sense that the main accent is not tied to any particular situation in the claim of syllables constituting a word as it is in some languages.*

The summary of the above quotation is that stress location differs greatly from language to language. Some linguists like Cruttenden (1986) and Roach (1991) hold on to the view that propounding a set of rules with exceptions would do better than seeing stress as a distinctive feature of individual words. This simply means there is binary opposition. Stress versus no stress though it is often relevant to distinguish an intermediate or secondary stress with the vertical stroke mark as mentioned above. For example, ‘Several, Contri’bution

Additionally, native words and early French adoptions tend to have the main stress on the root syllable and to keep it there, regardless of the affixes that word formation may add, such as ‘kingly’ standing and passion. Word stress varies as supported by Cruttenden (1986) who affirm that word stress rules are based on the class of word (i.e Noun, Verb, Adjectives etc).

7.3 Rules of Stress Placement in English

Despite the facts that there are problems associated with stress placement on English words, and often the ESL learners are victims of this associated problem. The seemingly intractable problem of stress placement on English words has been a source of concern to scholars. Attempts have been made by scholars in these directions, names of the few among them are Onuigbo (1990), Roach (1991), Ogonnah (2000) and Osisanwo (2007) Akinjobi (2004), Akindele (2008) among others. The various attempts are to provide succour to ESL learners on the erroneous task. It should be noted that these rules without exceptions.

Osisanwo (2009:111) give the following rules as guidelines for stress placements in English words.

1. All monosyllabic words are stressed (both content and function) when they appear in isolation e.g see, in, John.
2. Structural words may be stressed if listed e.g he, it, on, with etc.
3. The grammatical words are stressed if they function as the subject of a verb and are meant for specific emphasis e.g SHE is a pronoun.
4. All interrogatives/wh-elements (functioning as noun or adverbs) are normally stressed, e.g what, who, which, how, where, when etc.
5. All demonstratives are normally stressed, e.g this, that, those and these.

With no gainsay, there is variation for stress placement as the scholars mentioned earlier suggest the placement of stress on the various categories of English words.

7.3.1 Bi/disyllabic Words

Rule I

> *The stress placement on di-syllabic words may depend on the word class for instance, nouns are stressed on the first syllable*
> *while verbs are stressed on the second syllable.*

Examples:

Word	**Noun**	**Verb**
desert	DEsert	deSERT
export	EXport	exPORT
convict	CONvict	conVICT
produce	PROduce	proDUCE
retail	REtail	reTAIL

Rule II

In di-syllabic words with vowel number 12 /ə/, occurring in one syllable and any other vowel in the other, the latter would be stressed, while the former (that is with/a/ is unstressed.

Examples:

Again -aGAIN
Alone-aLONE
Father-FAther

Rule III If there is vowel sound /i/ in a word, it is unstressed, especially where it combines with another vowel

E.g

Funny – FUNny /'fʌni/

runny - RUNy /'rʌni/

Rule IV

If a disylablic word combines the two weak sound in English, /ə/,/i/, then the syllable with /i/ should be stressed for example:

River = River /'rivə/

Figure = Figure /'figə/

7.3.2 Disyllabic Adjectives/Verbs

The adjective receives their stress placements on the first syllable while verbs receivestheir on the second syllables. Here are some examples

Word	Adjective	Verb
frequent	FREquent	freQUENT
absent	Absent	abSENT
conjunct	CONjunct	conjunct

Rule 1

If the final syllable contains a shout vowel and on (or no) final consonant, the first syllable is stressed as exemplified below:

Lovely /’1ʌvi/ LOVEly

Happy /’hæpi/HAppy

Angry /’ængri/ ANgry

It is imperative to know that there are exceptions, such as “CONJUNCT” adjective, ‘CONjunct’ (noun) which changes in words class.

7.3.3 Trisyllabic Words (Verb)

Rule 1: If the last syllable contains a short vowel and ends with not more than are consonant, the third syllable will be unstressed, and stress will be placed on the preceding [penultimate] syllable.

Encounter /In’kauntə/ encounter

Determine /di’tɜ:min/ determine

Rule II: If the final syllable contains a short vowel or diphthong, or ends in with more than one consonant, the final syllable will be stressed as in

Entertain	/entə'tein/	enter TAIN
Resurrect	/rezə'rekt/	resurrect

7.3.4 Trisyllabic Words (Adjectives)

Rule 1: If the final syllable contains a short vowel or if the syllable preceding that final syllable contains a long vowel or diphthong or if it ends with more than one consonant, the middle syllable will stressed at exemplified below:

Important	/im'pɔ:tənt/	imPORtant
Excessive	/ik'sesi:v/	exCESsive
Uncertain	/ʌn'sɜ:tn/	unCERtain

Rule II: If the final syllable contain a short vowel and the middle syllable contains a short vowel and ends with more than one consonant, both final and middle syllable are unstressed and the first syllable is stressed.

Example:

Insolent	/insəʊlənt/	INsolent
Opportune	/Opətju:n/	OPportune
Derelict	/'derəlikt/	DErelict

7.3.5 Trisyllablic Words (Nouns)

Nouns tend to follow the same rules as adjectives. Thus

Rule I:

Potato	/pə'teitaʊ/	poTAto
Disaster	/di'za:stə/	diSASter