

TARTU STATE UNIVERSITY



AN  
INTRODUCTION  
TO  
ENGLISH PHONETICS  
FOR THE  
ESTONIAN LEARNER

By

O. MUTT

TARTU  1971

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Chair of English

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## PREFACE

The present survey of English pronunciation is primarily intended to serve as a handbook for students of English in the Estonian S.S.R.

There has been no shortage of good surveys of the phonetic system of British (and more recently of American) English either abroad or in the Soviet Union. What has been lacking, however, is a more-or-less complete account of the pronunciation of English written from the point of view of the Estonian learner. We do now have a competently written and thorough survey of English intonation and accentuation in comparison with that of Estonian ( П. К. Ваараск, Тонические средства речи, ч. I-II, Таллин 1964 ), but there is as yet no comprehensive account of the English vowels and consonants, of various assimilatory phenomena in English, etc. written with the Estonian learner in mind. The present handbook constitutes a modest attempt to fill this gap.

The aim of this publication is to provide advanced Estonian learners of English with the essential theoretical and practical material which would enable them to master English pronunciation themselves and to learn how to teach it to others. Chapters 1-2, and the first four sections of Chapter 3, contain material from the course on theoretical phonetics provided for students of English at universities and institutes in the Soviet Union. The rest of the book is mainly of a practical-normative character and can be used in connection with the teaching of English as a main subject to students at different levels.

I am deeply indebted to my colleagues Assistant Professor J. Silvet, L. Hone and O. Haas who have read the

manuscript of the book, made corrections and suggested improvements. Any deficiencies remaining in the book are, of course, due entirely to my own obstinacy, carelessness or ignorance.

November 1964

O. Mutt

#### PREFACE TO THE SECOND EDITION

Since the first publication of this handbook in 1965 substantial advances have been made in the phonetic sciences, especially as regards experimental and applied phonetics. A number of new and comprehensive surveys of English pronunciation have become generally accessible (Dickushina 1965, Vasilyev 1970, Gimson 1970<sup>2</sup>). Our knowledge of the articulation of Estonian vowels and consonants has also been considerably extended as a result of recent studies by G. Liiv, A. Eek and others.

It is in the light of these developments that a number of mistakes have been corrected and some sections modified or slightly expanded in the present edition. The bibliography has also been updated and extended.

May 1971

O. M.

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### List of Abbreviations

(Note. - Only such abbreviations are included below as cannot be found in ordinary dictionaries and other books of reference.)

a = adjective  
AE = American English  
BE = British English  
cent. = century  
E. = English  
Est. = Estonian  
f. = from  
Fr. = French  
Ger. = German  
I.P.A. = International Phonetic Alphabet  
Lat. = Latin  
lg(s). = language(s)  
ME = Middle English  
MoE = Modern English  
n = noun  
OE = Old English  
pron. = pronunciation  
RP = Received Pronunciation  
Russ. = Russian  
StE = Standard English  
v = verb

## List of Phonetic Symbols and Signs

### A. English Phonemes and Allophones

- a open retracted vowel used for the first element of the RP diphthongs /aɪ/, /aʊ/ as in high, house.
- æ front vowel between open and half-open (as in cat).
- ɑ: open retracted vowel (as in RP car, bath).
- b voiced bilabial plosive consonant (as in boy).
- č voiceless forelingual affricate consonant (= traditional /tʃ/ or /tʂ/, as in chair).
- ç medio-lingual fricative spirant consonant (the Ich-Laut; as in Scottish English nicht).
- d voiced alveolar plosive consonant (as in do).
- ð voiced forelingual dental fricative consonant (as in this).
- e mid-open front vowel (as in pen).
- ə mid-open central short vowel (as at the end of RP finer).
- ɜ: mid-open central long vowel (as in RP word).
- ɛ mid-open front vowel used for the first element of the RP diphthong /ɛə/, as in care).
- f voiceless labio-dental fricative consonant (as f in fear).
- g voiced back-lingual plosive consonant (as in go).
- h voiceless glottal fricative consonant (as h in house).
- i front-retracted close short vowel (as in bit).
- i: front close long vowel (as in seat).
- j palatal semi-vowel (as y in you).

- ʃ** voiced forelingual apical palato-alveolar affricate  
 (= traditional /dʒ/ or /dʒ/ as j in judge).
- k** voiceless back-lingual plosive consonant (as c in cool).
- l** "light" forelingual lateral consonant (as l in leap).
- ɫ** "dark" lateral consonant (as l in feel).
- ɭ** voiceless lateral consonant (as l in apple).
- m** bilabial nasal consonant (as in me).
- n** alveolar nasal consonant (as in new).
- ŋ** backlingual nasal consonant (as ng in song).
- o** mid-open back-advanced vowel used for the first element  
 in the RP diphthong /ou/
- ɔ** open back short vowel (as in dog)
- ɔ:** open back long vowel (as in saw)
- θ** voiceless forelingual dental fricative consonant (as th  
 in think)
- p** voiceless bilabial plosive consonant (as in pea)
- r** forelingual postalveolar spirant consonant (as r in RP  
red)
- ɾ** forelingual spirant consonant produced with a single  
 tap of the tip of the tongue against the upper teeth-  
 ridge (as in the case of the intervocalic r in Mary)
- ɽ** lingual rolled consonant (as in the Scottish English  
 pronunciation of r in red)
- R** uvular consonant (as in the north-eastern English dia-  
 lect pronunciation of r in red)
- ɹ** retroflex consonant (as in the AE pronunciation of r  
 in red)
- s** voiceless forelingual alveolar fricative consonant (as  
 in see)
- ʃ** voiceless forelingual palato-alveolar fricative conso-  
 nant (as in she)

- t voiceless alveolar plosive consonant (as in tea)
- u back-advanced close short vowel (as in put)
- u: back-close long vowel (as in soon)
- ʌ back-advanced, mid-open short vowel (as in sun)
- v voiced labio-dental fricative consonant (as v in voice)
- w bilabial velar sonant consonant (as w in wet)
- ʍ voiceless labio-velar fricative consonant (as wh in the careful pronunciation of which)
- x medio-lingual velar fricative spirant (as ch in Scottish loch)
- z voiced forelingual alveolar fricative consonant (as in zoo)
- ʒ voiced forelingual palato-alveolar fricative consonant (as s in pleasure)
- ʔ glottal plosive stop or 'hard attack', 'Knacklaut'; as in the emphatic pronunciation of "It's uneatable" /its 'ʔʌni:tʌbl/.

### B. Estonian Phonemes

In the sections of this handbook where English phonemes are compared with Estonian ones the latter are denoted by means of small underlined Latin letters (as is done in Fenno-Ugric phonetic transcription generally). These symbols have the same values, on the whole, as the corresponding letters in Estonian spelling: a, e, i, o, u, ä, ö, ü; b, d, f, g, h, j, k, l, m, n, p, r, s, š, z, ž, t, w, v.

### C. Other Signs

- : indicates full length of preceding vowel
- indicates half length of preceding vowel
- ' indicates main stress on following syllable
- , indicates secondary stress on following syllable

- , indicates a syllabic consonant, e.g. [p]
- .. indicates centralization, e.g. [o]
- ~ indicates dental articulation, e.g. [t̪]
- [ ] enclose phonetic transcription
- // enclose phonemic transcription

Note. - For tonetic transcription marks see p. 170.

## Chapter 1

### I N T R O D U C T I O N

#### 1. Phonetics and Phonology

The primary medium of language is speech. The written form of those languages which possess it is originally an attempt at reflecting the spoken language.

In speech the basic units for the differentiation of one utterance from another are speech-sounds. Phonetics is frequently defined as the science of the speech sounds of a language (< Greek φωνή phone 'a sound'). Such a definition of phonetics is too narrow. In reality phonetics is the science of the pronunciation of languages. It is concerned with the study of all the aspects of the production, transmission and reception (perception) of speech and also with the methods of representing speech in writing. Phonetics deals with the pronunciation of a lg. in the broadest sense of the term which covers the actual production of separate speech-sounds as well as the manner in which these sounds are combined into syllables, words and sentences.

It is very common nowadays to distinguish phonetics and phonology (or phonemics). These terms are well established and contrasted in the writings of many linguists, especially those representing various structuralist trends. There are considerable divergences, however, in the terminology used.

Broadly speaking, phonetics is regarded as the study of the actual production and classification of the speech-sounds in a lg. Phonetics is concerned with concrete physical phenomena, i.e. the physiological and physical side of



speech-sounds, and employs the techniques and methods of the exact sciences.

Phonology (or phonemics) is the study of the structural organization of speech-sounds, of the manner in which speech-sounds are actually used, of how they are grouped together and organized into a system (or "structured") in a given lg. Thus phonology can be said to deal with the socially meaningful aspect of speech-sounds, i.e. with their functional side, and employs the methods of the social sciences, including the humanities.

Put in another way: phonetics deals with the sounds of speech, phonology with the phonemes of lg. (see below, p.10ff)

Note. - This contrasting of phonetics and phonology goes back to the well-known Russian linguist Nikolai Trubetzkoy and his classic "Grundzüge der Phonologie", (Prague 1939). Trubetzkoy, in turn, was influenced by Jan Baudouin de Courtenay who distinguished anthropophonics (= descriptive and experimental phonetics) and psychophonetics (concerned with the actual use of speech-sounds in linguistic communication). Cf. below, p. 14.

It should be pointed out that not all linguists approve of a clear-cut distinction between phonetics and phonology. In the view of most Soviet linguists the two should be regarded dialectically as different aspects of one linguistic discipline with considerable overlapping between them. Thus L. Zinder suggests in his "Общая фонетика" (Moscow 1960, p.14) that the term phonological should be reserved to denote the structuralist conception of phonematic study. According to L. Zinder phonetics in the broad sense has two aspects: (1) a phonetic aspect (= phonetics in the narrow sense, concerned with the physical side, i.e. articulation and measurement of speech) and (2) a phonematic aspect (concerned with the socio-communicative, i.e. significant side of speech-sounds).

A recent line of research, enthusiastically acclaimed by many, viewed with caution or disapproved of by others, is

structural phonology. Well-known representatives of this trend in Soviet phonology are I. Revzin and S. Shaumyan. The latter has created a "two-level theory of phonology" (see his *Проблемы теоретической фонологии*, Москва 1962). Shaumyan's theory has also been called "cybernetic" (see O.J. Dickushina, *English Phonetics*, 1965, p. 33 ff.). There is no denying that structural phonology has succeeded in shedding light on a number of hitherto obscure aspects of lg. A more considered assessment of this approach is a matter of the future.

## 2. Subdivisions of Phonetics

The science of phonetics is often divided into (1) general phonetics, a branch of linguistics concerned with human speech in general, and (2) special phonetics which deals with the speech-sounds and phonemes of individual languages.

The latter, i.e. special phonetics can be either (1) descriptive or (2) historical.

Descriptive phonetics deals with the pronunciation of a lg. at a given period (usually in its present state) and is thus synchronic in character as compared with historical phonetics, which is concerned with the evolution of pronunciation and is diachronic in its approach.

General phonetics can also be divided into various branches. The study of the production of speech-sounds is sometimes called articulatory (also known as genetic) phonetics. This is the primary, and was the senior, branch of the subject. Once sounds are made, they exist as waves, (usually) in the air: the measurement and analysis of these waves is called acoustic phonetics. The sound waves do not fulfil their main linguistic function until they impinge upon, i.e. strike a human ear and are in some sense transmitted to a human brain. There is accordingly scope for a third branch of analytical study, auditory or perceptual phonetics.

Most recently, a fourth branch of study, complementary to the other three, has arisen through the use of speech-synthesizers, i.e. "talking machines" or electronic analogues of the human vocal tract (see below, p. 36).

It is also possible to distinguish theoretical phonetics from experimental (or instrumental) and applied phonetics.

There is obviously much divergence of usage as to the terms used and considerable overlapping between the various branches of what is traditionally called the science of phonetics.

### 3. Importance of Phonetics

Phonetics is one of the principal branches of linguistics and possesses great theoretical as well as practical importance.

Speech is the primary medium of lg. Hence the study of speech is essential to a better understanding of lg. as a semiotic system. The comparative study of the phonetic resources of different lgs. helps to shed light on the essence of human speech.

Phonetical studies are closely connected with lexicology, grammar and stylistics.

The connection between phonetics and lexicology is obvious since the words and sentences of spoken lg. cannot exist without assuming some material form, i.e. a material integument. The phonetic means of lg. constitute the material integument of lg.

Grammar and phonetics are likewise very closely linked. Words are used in combination according to certain patterns. The phenomena of agreement (concord), government (regimen), inflection, etc., indeed all grammatical changes are as a rule associated with phonetic phenomena.

The use of weak forms, sentence stress, word stress and intonation can under certain circumstances possess a stylistic function. Stylistics and phonetics are closely linked in the study of the use of certain phonetic means of expression with a definite stylistic purpose.

Historical phonetics is an essential part of any course in the history of a lg. The reconstruction of earlier sounds and phonetic phenomena sheds much valuable light on gramma-

tical and lexical developments (e.g. the problem of the relationship between the reduction of vowels and the disintegration of inflections in Late OE and Early ME).

Phonetic studies help to solve such theoretical problems as what constitutes a phoneme, a syllable, what is stress and intonation, etc.

On the other hand the information obtained through phonetic investigations is of great practical use to teachers of lgs. (both foreign languages and the mother tongue). Indeed, phonetic studies or at least linguistic studies with a central core of phonetics are crucial to all lg. teaching. The field of present-day applied phonetics is very extensive. The results of phonetic investigation are made use of by dialectologists, speech correctionists, in the teaching of the deaf-and-dumb, by elocutionists, actors, radio and television announcers, in the dubbing of films, etc. Phonetics is of great importance likewise in the creation and improvement of new alphabets based on careful studies of the interrelation between speech and spelling. Orthography and phonetics are linked in the transliteration of foreign names, as in cartography, etc.

There is very much practical need for detailed phonetic studies in present-day communications engineering (telephone, radio, TV, communication satellites, etc.) where engineers and phoneticians are cooperating very efficiently in the transmission of human speech over long distances.

#### 4. Historical Background to the Development of Phonetics

Phonetics is an old branch of linguistics with its roots in the remote past.

The first known work on phonetics dates from the 7th century B.C. and deals with the pron. of Sanskrit. The early Indians carried out painstaking investigations of their sacred hymns, notably the Rigveda. Each little detail of the lg. (Vedic Sanskrit) of these hymns was carefully examined and described so as to reproduce it faithfully later on. The grammatical, etymological and phonetical investigations

of the Indians (e.g. the well-known Indian grammarian Pāṇini of the 4th century B.C.) have had a far-reaching influence on European philology, especially in the 19th century.

The early Indians have left us detailed studies of phonetics with a minute description of each sound and its formation as well as precise accounts of the changes of sounds in the inflection and formation of words. They also studied the modification which sounds underwent when words were pronounced in connected speech.

Note. - The term sandhi (which is used in linguistics to denote various assimilatory changes undergone by sounds in conjunction, especially final and initial sounds in consecutive speech) is of Indian origin.

The ancient Greeks are known to have taken an interest in phonetic phenomena as early as the 5th century B.C. in connection with the voice exercises necessary in oratory, the theatre, etc.

Galen, the celebrated Greek physician of the 2nd century A. D., described the human larynx and respiratory organs.

In the Middle Ages the Arabs seem to have possessed remarkably good knowledge in the field of phonetics. Special mention should be made of the treatise on the origin of speech-sounds written by the 10th-11th century philosopher and physician Avicenna (= Ibn Sīnā).

There is nothing worth mentioning in this connection in Europe between Galen and Leonardo da Vinci (1452 - 1519). The latter undertook a very careful and detailed study of the organs of speech and hearing, of sound, its production, transmission and effects.

A landmark in the development of phonetics is the work of John Wallis, the well-known English logician, mathematician and grammarian of the 17th century. The first part of his "Grammatica linguae Anglicanae" (1653) has the title "Tractatus de Loquela" and deals with the formation and classification of speech-sounds.

A Swiss physician Joh. Konrad Amman in his "Dissertatio de loquela" (1700) divided speech-sounds into vowels and

consonants, and according to the place of their articulation into labial, dental, lingual, guttural, nasal, etc.

Towards the end of the 17th century physicists begin to take an interest in speech (e.g. Bartoli, Sauveur).

The physician Albrecht von Haller's "Elementa physiologiae" (1761) is regarded as the first real text-book of phonetics.

Mention should also be made of the work of an Austrian lawyer, poet, painter, physicist and mechanic, Wolfgang von Kempelen, who constructed the first known "talking machine" on the principle of the bag-pipe. The machine, which produced only a few words and phrases, is described in von Kempelen's "Mechanismus der menschlichen Sprache" (1791). The work was long neglected but reveals a good knowledge of the physiology of sound production.

The 19th century is a momentous one from the point of view of the development of natural science and philology. Rasmus Rask, Jacob Grimm, Franz Bopp, etc., laid the foundations of an exact phonetics (Lautlehre). A number of physiologists and physicists published studies of the mechanism of voice production, the physiology of speech, the sounds of speech (e.g. M. Rapp, Joh. Müller, H. Helmholtz, etc.).

In the second half of the 19th century a number of British linguists took a special interest in phonetics. They include Alexander John Ellis (1814 - 1890), known chiefly for his work in the fields of historical phonetics and spelling reform); Alexander Melville Bell (1819 - 1905), educationalist, inventor of "Visible Speech", father of one of the inventors of the telephone - Alexander Graham Bell; Henry Sweet (1845 - 1912), specialist in the history of English, grammarian and editor of Early English texts.

On the whole, however, the majority of linguists in the last quarter of the 19th century took little notice of the advances in phonetic research. In the 1870s and 1880s there also was a tendency for phonetics to split up into a linguistic and a physiological branch. The two trends were successfully combined by a Frenchman Pierre-Jean Rousselot

(known as Abbé Rousselot) e.g. in his dissertation "Les modifications de la parole" (1891). Rousselot applied scientific methods to the study of speech and is regarded as one of the founders of experimental or instrumental phonetics. His work in this field was continued by A. Meillet (d. 1936), in France, G. Panconcelli-Calzia ( 1878- ) in Germany, V. Bogoroditski (d. 1941) in Russia, etc. The results achieved were made use of by physicians and speech correctionists (= logopedicians, i.e. specialists interested in the treatment of speech defects, aphasia, etc.), but most linguists remained aloof. It should be pointed out, however, that such well-known language teachers and linguists as W. Viëtor (d. 1918), P. Passy (d. 1940) and O. Jespersen (d. 1943) recognized the merits of the new methods and techniques of applied phonetics.

With the work of Jan Baudouin de Courtenay (1845 - 1929), Ferdinand de Saussure (1857 - 1913), and, especially, Nikolai Trubetzkoy (1890 - 1938), it is possible to speak of the appearance of phonology with its special interest in phonemes, allophones, oppositions, distinctive features, etc. (see above pp.2 - 3, and below, pp.10 - 13).

In the 1920s and '30s R. Schilling, and the brothers E. Zwirner and K. Zwirner developed phonometry, a new branch of phonetics concerned with the statistical observation, recording and measurement of speech phenomena. Phonometry claimed to be a bridge between phonetics and phonology, but was actually a variety of experimental phonetics.

All these trends and approaches to the phenomena of spoken lg. are intimately linked. Attempts to draw strict lines of demarcation between them are doomed to failure. The results achieved by so-called phonometry, experimental phonetics or applied phonetics in general are of primary importance for the development of theoretical phonetics and vice versa. More and more specialists have come to understand this and are working jointly on problems of common interest. Attempts are also being made to span the artificial gulf between phonetics in the narrow sense and phono-

logy. The eminent linguist R. Jakobson pointed out already in 1938 that it is the common tasks facing phoneticians and phonologists which should be emphasized and not the differences. A striving for a synthesis of phonetics and phonology is characteristic, e.g., of the later works of D. Jones in England and A. Martinet in France.

Fine work has been done in phonetics in recent years by, e.g. V. Artemov, M. Matusevich, A. Trakhterov, L. Zinder in the Soviet Union; K. Pike, J. Kenyon, M. Halle, M. Joos in the U.S.A.; B. Malmberg and G. Fant in Sweden; E. Fischer-Jørgensen in Denmark, etc.

There has been an upsurge of interest lately in applied phonetics owing to the practical importance of phonetics in communications engineering (cf. above, p. 5). In this field phoneticians (phonologists) are working hand in hand with physicists and engineers. Such work presupposes a highly specialised knowledge of mathematics, physics, cybernetics, information theory, etc., and requires thorough training. During the last 10 - 15 years there has been an almost explosive development in the field of laboratory acoustic equipment to meet the practical requirements of communications engineering. A number of new machines have been specifically constructed for the analysis of speech and are obviously of great potential value also for the development of linguistics (see below, p.25 ff.). Indeed, linguists today are much more interested in these new instruments than they were in the kymograph or the artificial palate. On the other hand, the practical difficulties are much greater than they were when instrumental phonetics started. As E. Fischer-Jørgensen has pointed out ("What Can the New Techniques of Acoustic Phonetics Contribute to Linguistics" in "Proceedings of the 8th World Congress of Linguists", Oslo 1958, p.53), any linguist who was not too butter-fingered might have learned to handle a kymograph. The linguist today may well learn to press the right button and partly to detect when something is wrong, but he will generally not have the faintest idea of what is going on inside the machine, not to



mention his possibilities of repairing it. This means that cooperation between linguists and engineers will be absolutely necessary. Most linguists will inevitably remain technical amateurs.

## 5. The Phonemic Concept

### A. Phonemes, Allophones and Other Related Terms

The phoneme has been the subject of much controversy since the term was first introduced in Russian linguistics about a century ago. At the Second International Congress of Phonetic Sciences in London in 1935, the phoneme was discussed by so many speakers in so many different ways that it became a matter of amusement when yet another paper on the subject was announced. The past forty years have, of course, produced other views on the phoneme. Specialists still change their mind occasionally as to what a phoneme is and as to the specific phonemes of a given lg. In short it is a formidable task to define the phoneme and, indeed, to draw up a summary of the problems involved.

The central problem in this connection is that of what constitutes the smallest (minimal) unit of speech.

An utterance (on the concrete speech level) consists of the continuous physiological activity which results in a continuum of sound. The largest unit will, therefore, be the span of sound occurring between two silences. Within this unit of varying extent it may be possible to find smaller segments. These smaller segments consist of sound sequences on the phonetic level representing words or morphemes on the linguistic level. The latter can be shown to consist of still smaller units on the phonetic level.

Note. - It is also possible for a word to consist of a single speech-sound, e.g., such Russian prepositions and conjunctions as y, o, c; k, a, etc.; cf. the E. words are [ɑ:], or [ɔ:], etc.

What are these smallest units of lg. on the phonetic

level? The answer is phonemes (existing concretely as separate speech-sounds).

Note.- It is customary to distinguish speech-sounds from phonemes by using brackets [ ] to enclose the former and slantlines / / to enclose the latter.

In order to grasp the phonemic concept, i.e. to understand what a phoneme is, we shall discuss a few illustrations from the phonological system of present-day E.

Consider the forelingual plosive stop consonant /t/ in each of the following words (cf. Claude Merton Wise, Applied Phonetics, Englewood Cliffs, N.J. 1957, p.75):

Word	Pronunciation	Kind of /t/
till	[tɪl]	Aspirated alveolar [t <sup>h</sup> ]; tongue touching alveolar ridge some distance back of front upper teeth; strong aspiration.
stay	[steɪ]	Unaspirated alveolar [t]; no aspiration.
battle	['bætl]	Alveolar lateral [t <sup>l</sup> ]; exploded at sides of tongue instead of over top of tongue.
eighth	[eɪtθ]	Unaspirated dental [t <sup>δ</sup> ]; touching back of front teeth.

All of these [t]'s serve the single purpose of /t/ in the communication process and the non-phonetically-trained speaker of E. would be surprised indeed to learn that there are any differences among those which he as an individual uses.

The different variants of /t/ listed above are known as allophones of the /t/ phoneme.

Note. - For the purposes of communication it does not matter which kind of /t/, which variant, aspirated or unaspirated, alveolar or dental we use. Regardless of the allophone used, the words ['bætl] and [steɪ] still mean 'lahing' and

'jääma' to speakers of E. Any kind of /t/ may be substituted without changing the meaning. But as soon as something else is used, e.g. /d/, the meaning changes, e.g. from 'till' to 'dill', i.e. another phoneme has been used.

To take another example: The E. lateral phoneme /l/ occurs as three main allophones (cf. below, p.120ff):  
(a) clear [l], with a relatively front vowel resonance before vowels and /j/, e.g. in leave, let, blow, glad, silly;  
(b) voiceless [l̥], following stressed (aspirated) /p, k/ or weakly accented /p, t, k/, e.g. in play, clean, simplest, hopeless;  
(c) dark [ɫ], with a relatively back vowel resonance, finally after a vowel, before a consonant, e.g. in feel, canal, doll, help, elbow.

We could continue with other examples (e.g. the 5 allophones of /r/ in the various forms of present-day E, see below, p.117ff), but this is sufficient for the present purpose.

The phoneme may be tentatively defined as the smallest language unit that exists in the speech of all the members of a given language community as such speech sounds which are capable of distinguishing one word from another word of the same language or one grammatical form of a word from another grammatical form of the same word (cf. V.A. Vassilyev, English Phonetics. A Theoretical Course. Moscow 1970, p. 136).

The different phonetic realizations of a phoneme are known as its allophones, i.e. the actual speech-sounds produced in the process of oral communication. Put in another way phonemes exist concretely as separate allophones.

The principal variant of a phoneme is the most representative of its sounds, i.e. it preserves to the fullest extent all of its characteristic features. The other variants of a phoneme are known as its subsidiary variants. No two realizations or allophones of a phoneme are exactly the same. This is true even when the same word is repeated. No sound is ever pronounced in exactly the same way twice, either by an individual or by different individuals. Speech-sounds are as distinct as fingerprints. This is because each set of speech-organs is slightly different; sounds are produced by a complex muscular movement which cannot be exactly repeated.

Thus when the word cat is said twice, there are likely to be slight phonetic variations in the two realizations of the phoneme sequence /k + æ + t/. Nevertheless, the phonetic similarities between utterances are usually more striking than the differences and the word will be recognized as such. Such slightly different realizations of the same phoneme in the pron. of the same speaker are said to be free variants.

The realizations or allophones of a phoneme occurring in different words or in different situations in a word frequently show considerable phonetic differences. E. g. the difference in the quality of /l/ in let, doll, little is related to the position of the phoneme in the word or syllable. It is possible, therefore, to predict in a given lg. which allophones will occur in any particular context or situation: they are said to have a complementary distribution.

The phoneme was defined above as the smallest unit of lg. existing as such a speech-sound which is capable of distinguishing one word from another, otherwise alike. E.g. in bead, bid, bed, bad, bud; till, dill, fill, pill, bill, the sounds /i:, i, e, æ, ʌ/ and /t, d, f, p, b/ respectively are said to be significantly opposed or phonemically relevant.

A sound belonging to a given phoneme in one lg. does not necessarily belong to the same phoneme in another lg. E.g. /l/ which is a separate phoneme in E. belongs to the /r/ phoneme in Japanese; in Estonian palatalized l' and unpalatalized l are distinct phonemes because they distinguish palk 'log' from palk 'salary, wages', tall 'stable' from tall 'lamb'; cf. also the phonemic difference between the Russian unpalatalized /л/ and palatalized /л'/ in лук 'onion' and люк 'hatch(way)'; мол 'pier, breakwater' and моль 'moth'.

## B. Brief Historical Survey of the Development of the Phonemic Concept

The physiological and functional aspects of speech-sounds (see above, p. 1 ) were distinguished at an early date. It is possible to speak of an unconscious use of some-

thing like the phonemic concept in the works of a number of 19th century linguists before the term phoneme was actually used. The position in phonetics before the introduction of the idea of the phoneme has been compared, for instance, with that in natural science if one were to study various individual species without having the generic concept to operate with.

The phonemic theory was developed by Russian linguists in the 1870s. The term phoneme was introduced by Baudouin de Courtenay in 1870 in his M. A. dissertation. He took an individualistic-psychological view of a phoneme as a minimal unit of live speech and failed to see the dialectical unity of the material and functional aspects of the phoneme.

J. Baudouin de Courtenay's views were developed by his pupil Lev Shcherba (1880-1944). In his later works Academician L. Shcherba came to regard the phoneme as a unity of the material and functional aspects that possesses a semantically significant distinctive function. L. Shcherba speaks of the variants or shades (оттенки) of a phoneme (cf. B. de Courtenay's 'divergents').

Note. - D. Jones has admitted that he first heard of the phoneme from L. Shcherba in 1911; see D. Jones, *The Phoneme: Its Nature and Use*, Cambridge 1962, p.vii.

The ideas on the phoneme advanced by J. Baudouin de Courtenay and L. Shcherba were adopted and modified by the Linguistic Society of Prague (Cercle linguistique de Prague). The members of this society included a number of well-known scholars, among them Nikolai S. Trubetzkoy and Roman Jakobson, whose works between 1929 and 1939 created something of a revolution in linguistics. N.S. Trubetzkoy (1890-1938) made use of B. de Courtenay's dichotomy (anthropophonics and psychophonetics, see above, p. 2), F. de Saussure's view that all linguistic activity (le langage) consists of language (la langue) and speech (la parole), and distinguished phonology from phonetics (see above, p. 2). N.S. Trubetzkoy propounded his phonological views in a number of works, the principal of

which is "Grundzüge der Phonologie" (1939). The main points of his theory are: (1) the separation of phonology from phonetics; (2) the theory of phonological oppositions (privative, gradual, equipollent oppositions); (3) the theory of the archiphoneme. N.S. Trubetzkoy was a positivist as concerns his world outlook and he accordingly regarded the relations between phenomena as the primary object of scientific investigation. Hence his view that the inventory of the phonemes of a language is practically a correlation of its system of phonological oppositions. Some oppositions may be neutralized, as, for example, the German [d - t] in word-final positions; the phoneme in the position of neutralization is the archiphoneme. The latter is defined as "a unity of relevant features common to two phonemes." It is therefore an abstraction.

The phonological system set out in Trubetzkoy's "Grundzüge" has been extended and developed by Roman Jakobson (now at Harvard University) and by the French linguist André Martinet. Trubetzkoy's views have also had an extensive influence on many other linguists both in Europe and America, especially the representatives of various structuralist trends. Without going into details, it should be pointed out that some structuralist linguists have tended to divorce phonemes from actual speech. They have sometimes indulged in discussions of abstract relationships that may have no counterpart in actually existing lgs. (e.g. the glossematic or Copenhagen school founded by L. Hjelmslev).

Alongside the Copenhagen trend with its "algebraic" approach the principal foreign trends in the treatment of the phoneme are those of the London school of phonology and of the American descriptivist linguists.

The founder of the London school of phonology Daniel Jones (1881-1967) originally defined the phoneme as "a family of sounds in a given lg. which are related in character and are used in such a way that no one member ever occurs in a word in the same phonetic context as any other member." Subsequently D. Jones propounded a new theory, which may be

called atomistic. In his "The Phoneme: Its Nature and Use" (1950), he speaks of the different qualities of the same phoneme as "phones", a number of which form the corresponding phoneme. D. Jones's atomistic conception of the phoneme is not convincing and contains elements of agnosticism.

In the United States of America Leonard Bloomfield (1887-1949) defined the phoneme as a minimum unit of distinctive sound-feature, i.e. as a minimum feature of the expression system of a spoken lg. by which one thing that may be said is distinguished from any other thing which might have been said. In the course of time the American trend in phonology became more and more inclined towards abstractional views. The denial in American linguistics of the objective reality of the phoneme was carried to an extreme in what is known as the fictionalist view advanced by W.F. Twaddell, who called the phoneme "an abstractional fiction" (On Defining the Phoneme, 1935). Some American descriptivists (B. Bloch, G. Trager) hold views about the phoneme similar to those of D. Jones.

Soviet linguists agree in regarding the phoneme as a dialectical unity of the universal and the individual. Despite agreement on this general dialectical principle, however, there is still considerable divergence of opinion among Soviet phoneticians as to the actual nature of the phoneme. Very broadly speaking, the theory of the phoneme has developed in two principal directions in the Soviet Union. A large number of linguists, chiefly in Leningrad, accept L. Shcherba's views (e.g. L.R. Zinder, A.A. Vassilyev), while the so-called Moscow school (e.g. R.I. Avanessov, A.A. Reformatsky) has adopted and elaborated the morphological conception of B. de Courtenay (see also above, pp. 2-3).

Without a knowledge of the principal schools of thought in the field of phonemics it is impossible to solve the main problems of the phonemic analysis of a lg.: (1) the identification of its phonemes as items of its phonemic inventory (see below, p. 56), and (2) the identification of phonemes in individual words. For a detailed account of the various current views about the phoneme the student is referred to O.J. Dickushina, English Phonetics (1965), Chaps. 2-3, and V.A. Vassilyev, English Phonetics (1970), Chap. 5.

## Chapter 2

# SPEECH - ITS PRODUCTION AND INVESTIGATION

### 1. The Mechanism of Speech

Any manifestation of lg. by means of speech is the result of a highly complicated series of activities constituting the chain of speech. The communication in sound of even the simplest idea involves three principal stages of activity on the part of the speaker. In the first place, the formulation of the concept will take place at a linguistic level, i.e. in the brain. This first stage may, therefore, be said to be psychological. The nervous system transmits this message to the organs of speech, and these in turn behave in a conventional manner learnt by experience and serving to produce a particular pattern of sound. This second stage can be called articulatory or physiological. The movement of our organs of speech will create disturbances in the air (or some other medium through which we are talking). These sound waves, varying sound pressures, etc. may be investigated and they constitute the third - physical or acoustic stage in the speech chain.

Since communication generally requires a listener as well as a speaker, the stages described in the preceding section will be reversed at the listening end: the reception of the sound waves by the hearing apparatus (physiological) and the transmission of the information along the nervous system to the brain, where the linguistic interpretation of the message takes place (psychological).

Any really thorough investigation of speech as communi-



cation should take account of both the production and the reception of speech. The main purpose of this handbook, however, is to describe the manner in which English sounds are produced and combined in words and sentences. On the concrete speech level we are concerned especially with the activity involved in the production of sounds. For this reason, we shall now briefly examine the human speech mechanism.

Note.— The following description of the speech organs is largely based on R. Quirk, *The Use of English*, London 1963, pp. 260 - 263, and A. C. Gimson, *An Introduction to the Pronunciation of English*, London 1962, pp. 4 - 7.

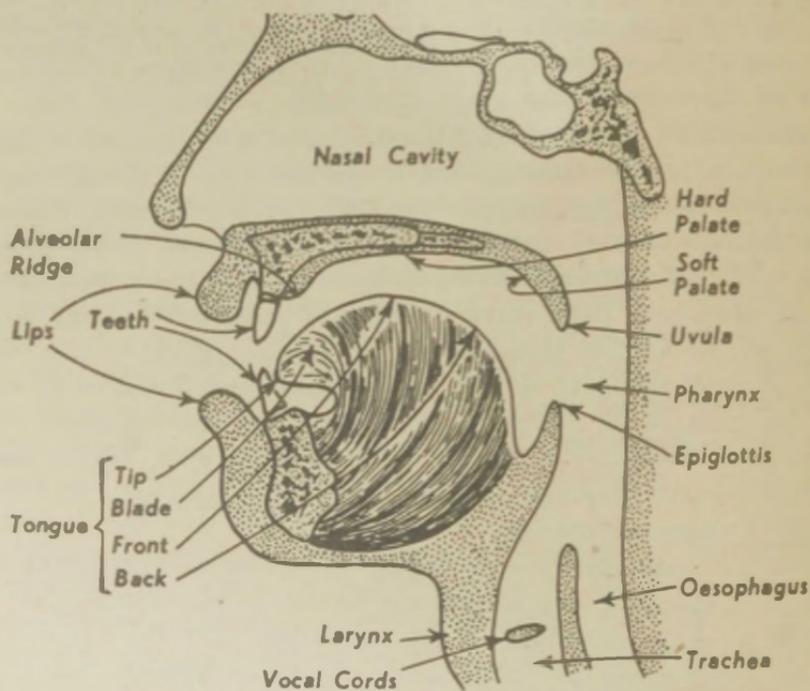


Fig.1. - Organs of speech (schematic diagram).

The most usual source of energy for human vocal activity is provided by an air-stream expelled from the lungs. This air-stream is directed outwards through the mouth or

nose, or both. In some languages there are sounds which do not require lung air for their articulation (e.g. the clicks in certain South African lgs.) In E., too, we have one or two extra-linguistic sounds (e.g. the tut-tut of irritation and the noise of encouragement made to horses), but all the essential sounds of E. need lung air for their production.

The air-stream provided by the lungs undergoes important modifications in the upper stages of the respiratory tract before it acquires the quality of a speech sound. First of all, in the trachea or windpipe, it passes through the larynx, containing the so-called vocal cords (see Fig.1).

The larynx is a casing, formed of cartilage and muscle, situated in the upper part of the trachea. Its forward portion is prominent in the neck below the chin and is commonly called the "Adam's apple". Housed within the larynx are the vocal cords, two folds of ligament and elastic tissue which may be brought together or parted somewhat like the lips. The opening between the cords is called the glottis. Biologically, the vocal cords act as a valve to prevent the entry into the trachea and lungs of any foreign body, or, when closed, assist in any muscular effort of the arms or abdomen. In using the vocal cords for speech, they may assume a variety of positions (see Fig. 2):

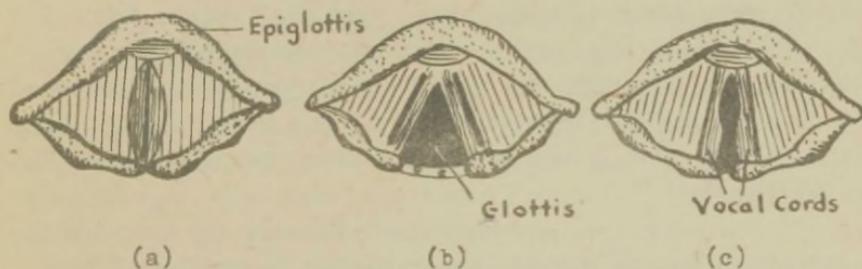


Fig.2. - Diagrams of the vocal cords: (a) tightly closed as for [?]; (b) wide open as for breath; (c) loosely together and vibrating as for voice.

(a) The glottis may be tightly closed, so that the air-pressure from the lungs is pent up behind the closure. The explosive sound heard when this position is released is known as the 'glottal stop' [ʔ]. This sound frequently occurs in English, e.g. when it precedes the energetic articulation of a vowel (as in the very emphatic pron. of the word anyone; (see below, p.110).

(b) The glottis may be held wide open, allowing the air to escape freely as in breathing (as when we say an s), or, when the air-stream is expelled with sufficient energy, producing audible glottal friction (as in a strong h sound). The sound produced with the vocal cords wide apart is called breath or (acoustic) noise.

(c) The vocal cords may be drawn near together and made to vibrate, by the air-pressure from the lungs. This vibration of the vocal cords, and the resulting sound - voice (glottal tone) is a normal feature of all vowels or of such a consonant as z compared with h. The vibratory effect may easily be felt by touching the neck in the region of the larynx when saying ah or z, for instance, on a low note. The more rapid the vibration, the higher the pitch of the note.

A very quiet whisper may result merely from holding the glottis in the position for breath, i.e. as for h. The more normal variety of whisper is produced when the so-called false vocal cords (situated just above the vocal cords and running parallel to them) are drawn towards each other, leaving only a narrow space for the air to pass between them.

The air-stream, having passed through the larynx, is next subjected to further modification according to the shape assumed by the upper cavities of the pharynx and mouth and according to whether the nasal cavity is brought into use or not. These cavities functioning as supra-glottal resonators give a variety of qualities and resonances to the sound produced.

The pharyngeal cavity (see Fig.1) extends from the top of the larynx and oesophagus, past the epiglottis and the root of the tongue, to the region in the rear of the soft palate.

The escape of air from the pharynx may take place in one of three ways: (a) the soft palate may be lowered, as in normal breathing, in which case the air escapes through the nose and the mouth; (b) the soft palate may be lowered, so that the air is allowed to escape through the nose while a complete obstruction is made at some point in the mouth (e.g. in the case of the nasal consonants /m, n, ŋ/; (c) the soft palate may be held in its raised position, so that the air escape is solely through the mouth. All normal E. sounds, with the exception of the nasal consonants mentioned, have this oral escape.

Although all the cavities so far mentioned play an essential part in the production of speech-sounds, most attention has traditionally been paid to the cavity formed by the mouth or the oral cavity. This is mainly due to the fact that this cavity is the most readily accessible and easily observed section of the vowel tract.

The only boundaries of this oral chamber which can be regarded as being relatively fixed are, in front the teeth; in the upper part, the hard palate; and, in the rear, the pharyngeal wall. The remaining organs are movable: the lips, the various parts of the tongue and the soft palate with its uvula (see Fig.1). The lower jaw, too, is capable of very considerable movement and this movement controls the gap between the upper and lower teeth and also to a large extent the position of the lips.

It is convenient to divide the roof of the mouth into three parts: moving backwards from the upper teeth, first, the alveoli or teeth ridge; secondly, the bony arch which forms the hard palate, and finally, the soft palate or velum which, as we have seen, is capable of being raised or lowered, and which ends in the uvula.

The lips are very movable and the shape they assume affects very considerably the shape of the oral cavity as a whole. They may also be tightly shut or held apart in various ways.

Of all the movable organs within the mouth, the tongue is by far the most flexible and is capable of assuming a great variety of positions in the articulation of both vowels and consonants. Indeed, in many lgs. the word for 'tongue' is used to refer to human speech and lg. activity.

The tongue is a complex muscular structure which does not show obvious sections, yet, since its position must often be described in considerable detail, certain arbitrary divisions are made.

When the tongue is at rest, with its tip lying behind the lower teeth, that part which lies opposite the hard palate is called the front and that which faces the soft palate is called the back. The region where the front and back meet is known as the centre. The whole upper area of the tongue is sometimes referred to as the dorsum. The tapering section facing the teeth ridge is called the blade and its extremity the tip. This region of the tip and blade is sometimes known as the apex. The edges of the tongue are called the rims.

Generally, in the articulation of vowels the tongue-tip remains low behind the lower teeth. The body of the tongue, may, however, be 'bunched up' in different ways (cf. the humping of the front of the tongue with the lips spread for the vowel in tea, or the humping of the back of the tongue with rounded lips for the vowel in two). This change of shape may be clearly felt if the vowels /i:/ and /u:/ are said one after the other.

The various parts of the tongue may also come into contact with the roof of the mouth (cf. the position of the tongue in, the case of, e.g. /t, n, l, ʃ, r/, etc.). Moreover, the surface of the tongue, viewed from the front, may assume different forms. There may be a narrow groove running from back to front down the centre line as for /s/. The

grooving may also be much more indistinct as in the case of /š/ or the whole tongue may be laterally contracted as in the case of various kinds of r sounds.

The oral speech mechanism is readily accessible to direct observation as far as the lip movements are concerned and also many of the tongue movements, which take place in the forward part of the mouth. It is also fairly easy to measure the extent of the area of contact between the tongue and the roof of the mouth. The various devices, instruments and techniques which enable us to obtain information concerning the actual working of the mechanism of sound production, the details of tongue positions, changes in the configuration of the oral and pharyngeal cavities, etc. are discussed in the following section.

## 2. Experimental Methods, Techniques and Equipment Used in Phonetic Studies

The practical and theoretical aims of phonetic studies make it necessary for the nature and mode of formation of every speech-sound of the lg. to be ascertained with the greatest possible accuracy. The usage of the particular lg. as regards the length of sounds, the stress of syllables and the intonation of words and sentences must also be examined in detail.

Speech may be analysed and the differences between the sounds of different lgs. may be investigated and demonstrated either by trained observers, or by means of specially designed apparatus, or, better still, by trained observers equipped with such apparatus. To obtain the best results, the investigations must be made by the acoustic (or auditory) method and the results must be corroborated by experimental methods.

Analysis by the acoustic method can only be carried out by an observer who is a trained phonetician, i.e. a person whose ear has been trained to distinguish and recognise minute shades of sound and who has arrived at a high degree of precision in the control over the movements of his tongue and

other parts of the speech-organs. He must have a collaborator or informant, a native speaker of the lg. to be analyzed, if possible one with natural linguistic ability.

The process of investigation is as follows. The observer gets the native to repeat words and phrases of his lg. a large number of times. He may find these words and phrases to be composed of sounds already known to him. If so (and if the lg. does not present special difficulties in the matter of length, stress or intonation), he will at once be able to repeat them to the native's satisfaction. If the native is not satisfied, it means that the word or phrase contains one or more unfamiliar sounds or that the lg. contains some unusual features of length, stress or intonation. To acquire the correct pron., the observer uses his power of making fine adjustments in the positions and movements of his own speech organs. He tries one variation, then another, until he succeeds in pronouncing the word or phrase to the native's satisfaction. He then knows by his own muscular sensations what is the exact manner of formation of the unfamiliar sounds of the lg.

The analysis of pron. by the acoustic method may be checked by experimental methods, i.e. investigation by apparatus and various technical devices.

The most important pieces of apparatus and other equipment used in experimental phonetics are (beginning with the simplest and moving on to the more complicated): (1) the artificial palate, (2) the laryngoscope, (3) the phonetic kymograph, (4) the gramophone and phonograph, (5) the tape-recorder, (6) the oscillograph, (7) the X-ray apparatus, (8) the sound spectrograph, and (9) the speech synthesizer.

#### (1) The Artificial Palate

The artificial palate is used to make palatograms. A palatogram is a drawing that shows the parts of the roof of the mouth with which the tongue makes contact in pronouncing sounds. Palatograms are used to ascertain the tongue-positions characteristic of certain sounds.

An artificial palate is a model of the roof of the mouth made of some thin material (metal or plastic) in such a shape

that it fits the observer's mouth exactly (Fig.3).

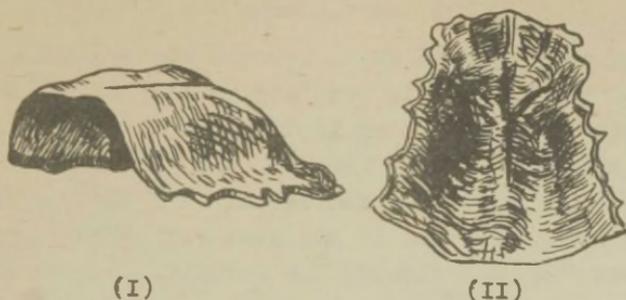


Fig. 3.- The Artificial Palate.  
 (I) Side view. (II) Seen from below.

The under side should preferably be black.

The device is used as follows. The under side of the palate is first covered with a little finely powdered chalk (magnesium, or other white powder) and inserted into the mouth. A sound is then pronounced and the palate is withdrawn. The parts of the palate from which the chalk has been removed show the points at which the tongue touched it. These marks may then be examined at leisure. The marks may also be photographed if desired, or they may be copied in projection on outline diagrams of the palate (Fig.4).

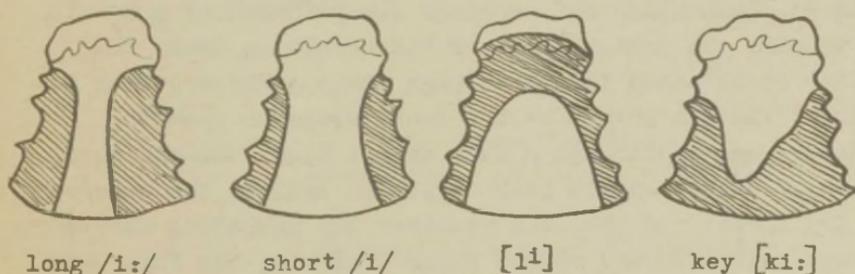


Fig.4. - Palatograms of some English sounds and their combinations.



## (2) The Laryngoscope

The laryngoscope is an instrument for examining the interior of the larynx. It consists usually of 1 - 2 small circular mirrors (about 2 cm in diameter fixed to a long handle at an angle of  $120^{\circ}$  (Fig.5). When the mirror is inserted into the mouth, pressed against the soft palate as far back as possible, and is adjusted so that a strong light is reflected down the throat, the interior of the larynx (the vocal cords) is visible in the mirror.

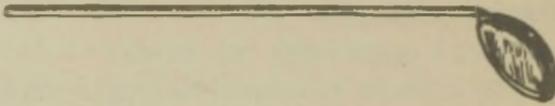


Fig. 5.- The Laryngoscope.

## (3) The Kymograph

The kymograph is a device used to obtain graphic recordings of speech. The term 'kymograph' comes from the Greek for 'wavewriter'. The apparatus consists of clockwork revolving a cylinder or drum covered with smoked paper on which curves of vibration, pressure, etc. may be traced (Fig.6). Such kymograph tracings are produced by a needle or tracing pen pressed against the revolving drum. The needle is attached to a diaphragm (thin membrane) that is made to vibrate either by the sound waves or changing pressure coming through a tube from a disk, cup or funnel which is either spoken into or placed against the outside of the larynx. As the drum revolves the vibrating needle traces a line on the smoked paper (removing the layer of soot) and thus records the changing vibrations of speech or the movements of the larynx.

The sheets with kymographic curves are removed from the cylinder and the tracings fixed with rosin. After this

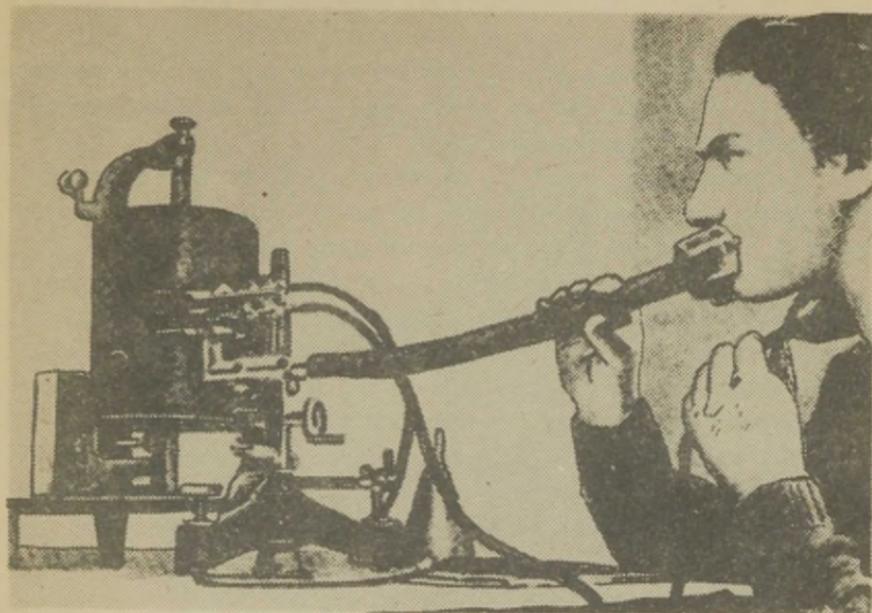


Fig.6. - The Kymograph.

they may be compared and otherwise studied at leisure. A few specimen kymographic tracings are shown in Fig.7.

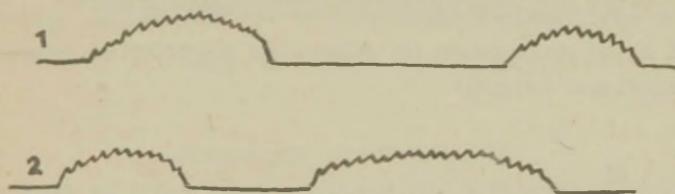


Fig.7. - Kymographic curves of the Estonian words 'ette' and 'edu'.

(4, 5) The Phonograph, Gramophone and  
Tape-recorder

The gramophone and the tape-recorder are devices so widely used in the home and as audio-visual aids in teaching that they need not be discussed here.

The phonograph can be described as an earlier form of gramophone that uses a cylinder of hard wax or some other material instead of disks as reproducing records.

All three inventions are of inestimable value for the phonetician of the future who will want to hear how a lg. was spoken earlier. It should be borne in mind that the reconstruction of the pronunciation, e.g. of Chaucer or even Shakespeare, may be very remote from the actual original. We do not know for sure how they and their contemporaries spoke. Future historians of the lg., however, will have long and faithful recordings of the voices of 20th-century writers, statesmen, etc.

(6) The Oscillograph

This is a fairly intricate piece of apparatus in which light or cathode rays are used to convert sound phenomena into equivalent electric forms or oscillations (waves) and to record and indicate them (Fig.8). Put in another way: this device permits sound to be observed visually with great accuracy. The oscillations produced by sounds, words, phrases, etc. can be photographed or otherwise reproduced graphically as oscillograms (Fig.9).

(7) The X-ray Apparatus

X-ray photography has been of great help in ascertaining the articulatory functions of the speech-organs, e.g. the positions of the tongue and velum, the shapes assumed by the pharyngeal cavity in the production of speech-sounds, etc. (Fig.10). The results of such studies are incorporated in the diagrams representing cross-sections of the oral and

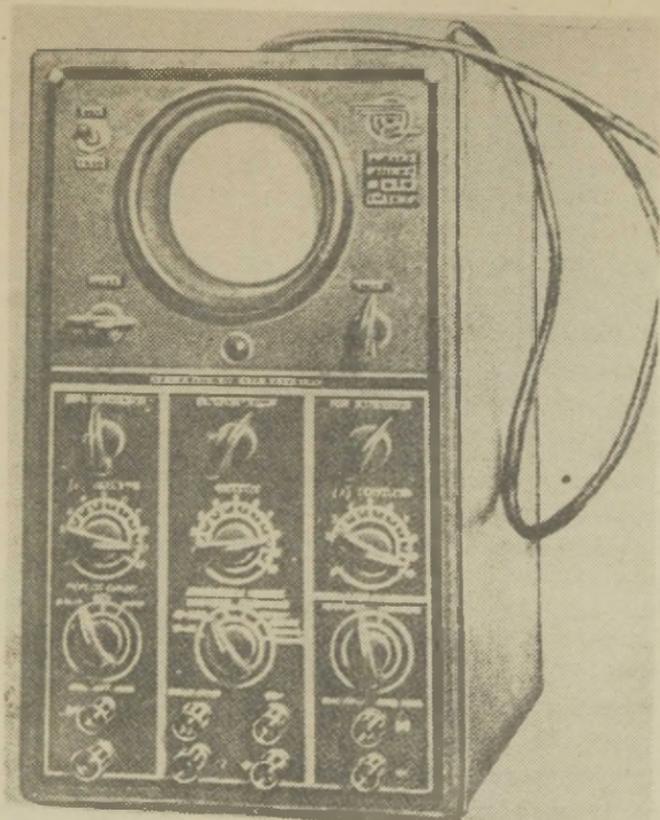


Fig. 8. - The Oscillograph.

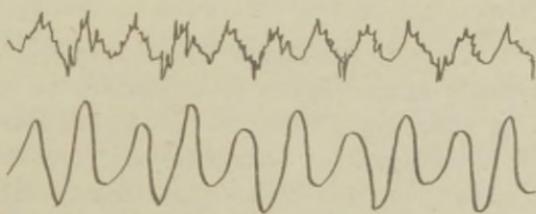


Fig. 9. - Examples of oscillograms.



Fig.10. - X-ray photograph and diagram.

pharyngeal cavities for separate sounds that one finds in most handbooks of phonetics. Such diagrams are helpful in the study of foreign lgs., especially if they compare native and foreign sounds (see below Figs.15, 16, etc.).

X-ray photographs of the speech-organs during the articulation of sounds, words, etc. are called röntgenograms and the process of taking such photographs is known as röntgenography.

X-ray equipment together with slow-motion photography has helped to solve a number of problems in articulatory phonetics.

#### (8) The Sound Spectrograph

The sound spectrograph or sonagraph is an electronic device that produces a visible and approximate record of speech (a spectrogram or sonagram) showing the three dimensions of speech sounds: their time (duration), frequency and intensity (energy). There are several varieties of

spectrographs in use today. A spectrograph does not show more detail than earlier instruments, but it does so simultaneously in the form of a complex design of light and shade. The apparatus was originally designed to render speech patterns visible to the deaf.

In order to understand the working of the spectrograph it is necessary to review some material from acoustic phonetics.

Speech-sounds, like other sounds are conveyed to our ears by means of waves of compression and rarefaction of the air (the commonest medium of communication). These variations in pressure, initiated by the action of the vibrator, are propagated in all directions from the source, the air molecules themselves vibrating at the same rate (or frequency) as the original vibrator. In the production of vowels, the vibrator is normally provided by the vocal cords; in the case of many consonant articulations, however, a source of air disturbance is provided by constriction (narrowing or closure) at a point above the larynx, with or without accompanying vocal cord vibration (see above, p. 20).

The basis of all normal vowels is the glottal tone produced by the vibration of the vocal cords. The glottal vibrations in the case of /a:/ are not very different from those for /i:/ (when both vowels are said with the same pitch).

The glottal tone is the result of a complex, but mainly regular, vibratory motion. The vocal cords vibrate in such a way as to produce, in addition to a basic vibration over their whole length (the basic note or fundamental frequency), a number of overtones or harmonics having frequencies which are simple multiples of the fundamental or first harmonic. Thus, if there is a fundamental frequency of vibration of 100 cycles per second (cps), the upper harmonics will be of 200, 300, 400, etc., cps. The number and strength of the component frequencies of the complex glottal tone differ from one individual to another and this accounts at least in part for the differences of voice quality by which we are able to recognize a speaker. But we can all modify the glottal tone

so as to produce at will vowels as different as /i:/ and /a:/, so that despite divergences in voice quality we can convey the distinction between two words such as 'bee' and 'bar'. This variation of quality, or timbre, of the glottal tone is achieved by the shapes which we give the resonators above the larynx, i.e. the pharynx, mouth, and nasal cavity. These chambers are capable of assuming an infinite number of shapes, each of which will have a characteristic vibrating resonance of its own. Those harmonics of the glottal tone which coincide with the chamber's own resonance are very considerably amplified. Thus, certain bands of strongly reinforced harmonics are characteristic of a particular arrangement of the resonating chambers which produces, e.g. a certain vowel sound. These bands of frequencies will be reinforced whatever the fundamental frequency. In other words, whatever the pitch on which we say, e.g. the vowel [a:], the shaping of the resonators and their resonances will be very much the same, so that it is still possible, except on extremely high or low pitches, to recognize the quality intended. Thus, it is found that the vowel [a:] has one such characteristic band of strong components in the region of 800 cps and another at about 1,100 cps. The vowel [i:] has bands of energy at about 280 and 2,600 cps.

The complex range of frequencies of varying intensity which make up the quality of a sound is known as the acoustic spectrum.

Those bands of frequencies which are characteristic of a particular sound are known as the sounds formants. Thus, formants of [a:] are said to occur in the region of 800 and 1,200 cps.

The complex wave pattern of a sound or combination of sounds may be analyzed by means of a number of instrumental techniques, most of which involve lengthy calculations, e.g. counting the number of fundamental vibrations as on oscillographic tracing. It is the sound spectrograph, however, that has made possible a relatively rapid and visual presentation of the acoustic spectrum and the various intensities of sound

contained in it. In an instrument of this sort, a number of filters, covering a range of frequencies from 0 - 8,000 cps, respond to the varying sound intensities at different frequencies and ultimately produce a length of paper (broad tape, etc.) and give a 3-dimensional record or spectrogram of the acoustic spectrum. In a spectrogram time (duration) is shown on the horizontal axis (in centiseconds), frequency on the vertical axis (in cps), and intensity (energy) at any frequency level by the relative blackness of the markings, i.e. by means of the degree of blackening made by the tracing pen on the paper. Thus, the concentrations of energy at certain frequency bands (the formants) stand out very clearly (see Fig. 11) for the spectrograms of the vowels [i:], [ɑ:], [e] and [ai].

The groups of dark bands on the horizontal axis are numbered from the bottom upwards. Experiments with speech synthesizers have shown that it is the first two formants ( $F_1$ ,  $F_2$ ), and chiefly the second, that contribute most to the distinctive character of vowels.

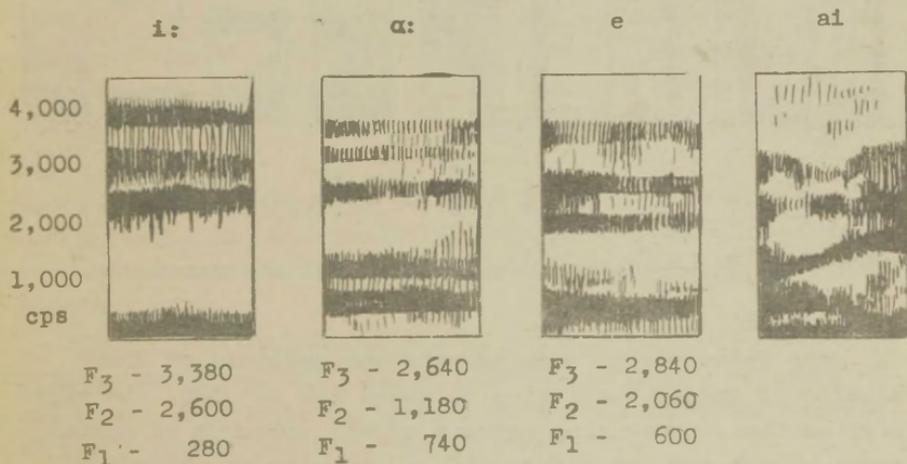


Fig. 11.- Spectrograms of the English vowels [i:], [ɑ:], [e] and [ai].



From the articulatory point of view,  $F_1$  is correlated with tongue height (and so with the shape of the pharyngeal cavity);  $F_2$  with front-to-back tongue placing (and so with the shape of the oral cavity).

Consonants produce several quite different kinds of marking (see Fig.12). Voiceless stops have two successive parts: a blank (for the closure) and a thin high spike representing the release (e.g. [p, t]); voiced stops are similar except that the first part has a low-frequency horizontal component (representing vocal cord vibration, and called a voice bar), e.g. [b, d]); voiceless fricatives have irregular vertical striations with no voice bar, voiced ones have similar patterns with a voice bar and so on. On the whole acoustic information concerning consonant articulations is at present less complete than for vowels.

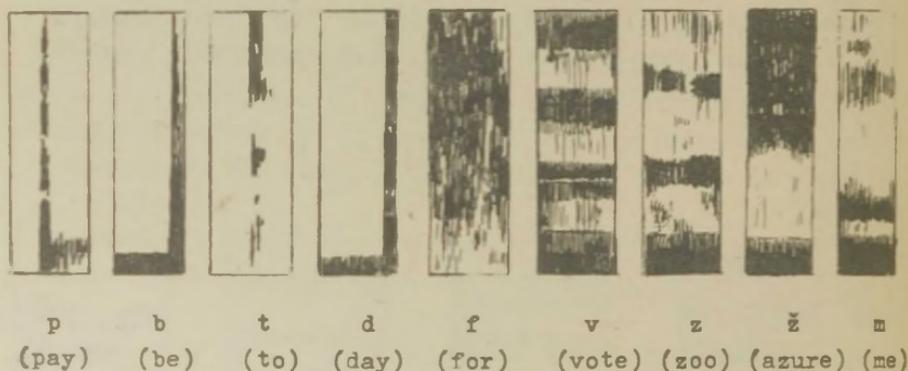


Fig. 12.- Spectrograms of some English consonants.

The spectrograph also permits the analysis of short samples of speech lasting up to about 2½ seconds, and makes obvious the everchanging pattern of the spectrum of continuous speech and the difficulty of dividing an utterance into separate (discrete) segments (see, e.g. the gradual transition from the [a] to the [i] in the spectrogram of [ai] in Fig. 11 above; cf. also below p. 35).

Although a number of problems remain to be solved, spectrographic analysis has helped us to learn a great deal about the acoustic structure of sounds, especially vowels.

Thus, e.g., it is now known that two, or at the most three, formants appear to be sufficient for the correct identification of vowels. As far as the E. vowels are concerned, the first three formants are all included in the frequency range 0 - 4,000 cps, so that the spectrum above 4,000 cps would appear to be largely irrelevant to the recognition of E. vowels.

Note 1. - On a telephone system which may have a frequency range of about 300 - 3,000 cps, we find little difficulty in identifying the sound patterns used by a speaker and are even able to recognize voice qualities.

Note 2. - Recent books on E. phonetics give the first three formants among the acoustic features of the sounds described; see, e.g. A. C. Gimson. *An Introduction to the Pronunciation of English*, London 1970, pp. 98, 154-155, 207 et passim.

It has also been confirmed from spectrographic analysis that a diphthong, such as that in my, is indeed a glide between two vowel elements (besides involving a perceptible articulatory movement), since the formants bend from the positions of one vowel to those characteristic of another (Fig.13).

Spectrographic analysis also reveals the way in which there tends, on the acoustic level, to be a merging of the acoustic features of units, which linguistically, are treated separately.

Thus, our discrimination of the [f] and [θ] sounds appears to depend not only on the frequency and duration of the noise component, but also upon a characteristic bending of the formants of the adjacent vowel.

In the case of such consonants as [p, t, k], which involve a complete obstruction of the air-stream and whose release is characterized acoustically by a relatively brief

ai (I)

ɔi (boy)

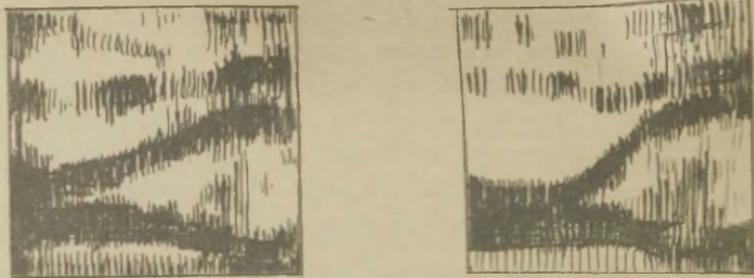


Fig. 13.- Spectrograms of the English diphthongs [ai] and [ɔi] .

burst of noise, the vowel transition between the noise and the steady state of the vowel appears to be of prime importance for our recognition of the consonant. This overlapping of vowels and consonants would suggest that an analysis of speech based solely upon acoustic data would find it convenient to operate with units larger than the sound segment.

To sum up--the spectrograph is a very useful and important instrument that is basic to the new advances in acoustic phonetics. A spectrogram can be inspected by linguists at their leisure in order to ascertain the acoustic features of and the range of variation for any given phoneme, to determine the articulatory phases of sounds pronounced successively in a word, to distinguish syllable boundaries, etc. Spectrographic analysis provides a great deal of acoustic information in a convenient form, and, in addition, the instrument itself is relatively simple for a phonetician without special technical training to operate (although, of course, the electronic device itself is highly complicated in design).

#### (9) The Speech Synthesizer

Speech synthesizers are electrical analogues of the human vocal tract, i.e. models of the human speaking apparatus. Such artificial talking machines were first publicly

demonstrated on a large scale at the 8th World Congress of Linguists at Oslo in 1957. Much progress has been made with experiments in the synthesis of speech since then. Present-day speech synthesizers are very complicated electronic devices with keyboards provided with a variety of keys, buttons, etc. producing a basic tone and 2 - 3 formants for each vowel and consonant. The resulting sounds can be combined to produce words and sentences. The machine can be made to speak faster or slower, louder or softer. The sex and age qualities of the synthetic voice can also be changed.

If such a speech synthesizer works, this suggests that our theories about the internal mechanism of speech are fairly sound. To the extent that the machine fails to work, our theories are probably wrong and have to be modified.

...

As a result of the use of devices and techniques of phonetic investigation such as those described above, we have now, in the second half of the 20th century, learnt much more about the nature and essence of human speech. Work is proceeding on a variety of new and exciting machines and pieces of apparatus such as electronic devices which enable the learner to check up visually on the correctness of his pronunciation (of great value in both foreign language teaching and in the training of deaf persons to speak), reading machines which can scan a text and read it out aloud. Some day it may even become possible for translating machines to listen to an utterance in one language and to "speak" it in another language.

### 3. The Classification of Speech Sounds

We have seen already (p. 20) that in speech production the vocal cords may be either held wide open allowing the air from the lungs to escape freely (with or without audible friction) or they may be drawn near together and made to vibrate by the air-pressure from the lungs. In the first case the sound produced is known as breathed or voiceless, in the latter it is called voiced. This distinction between voiced and voiceless is one of the basic divisions or dichotomies

in the classification of sounds.

A second basic dichotomy in the classification of speech sounds is that between vowels and consonants. Vowels are usually defined as voiced sounds produced without any audible obstruction of the air-stream, i.e. the air that passes through the vibrating vocal cords escapes from the mouth freely with no strong local friction. Consonants are voiced or voiceless sounds in which the air-passage through the mouth is completely blocked or variously narrowed so that the air-stream can only escape with different degrees of friction.

The terms 'vowel' and 'consonant' have been used for many centuries. In present-day phonetics it is important to be very careful in the use of these words.

As is well known the terms are loosely used to refer to both sounds and letters. In view of the lack of systematic correspondence between these two categories, especially in English, a clear distinction should be made between vowel and consonant sounds, on the one hand, and vowel and consonant letters, on the other hand.

Secondly, we must distinguish between two further senses of the words 'vowel' and 'consonant'. In ordinary use the word 'consonant', for instance, is employed either to refer to an articulatory class of sounds (these produced with audible impediment to the air-stream, as opposed to vowels, which are not), or to sounds having a particular role or function in syllable structure (occurring with other sounds, 'con-sonant', as opposed to vowels, which may stand alone as a separate syllable).

Vowels and consonants may thus be defined phonetically, the criterion of distinction being the presence or absence of a closure or narrowing, or linguistically from the point of view of distribution. In the latter case it will be found that the phonemes of a lg. usually fall into two classes, those which are typically central (or nuclear) in the syllable and those which are non-central (or marginal). The term 'vowel' can then be applied to those phonemes having the former function and 'consonant' to those having the latter.

Such a linguistic definition helps to overcome the difficulties encountered in E. as regards certain borderline sounds known in traditional phonetics as semi-vowels or semi-consonants, e.g. /j, w/. The latter and also RP /l, r/ are traditionally consonants, but are more characteristically vowel-like in the terms of the phonetic definition of vowels, i.e. the articulation of vowels is not accompanied by any closure or narrowing in the speech tract which would prevent the escape of the air-stream through the mouth or give rise to audible friction. (For a discussion of such borderline cases, see below p. 111 ff.).

From the practical phonetic standpoint, it is convenient to distinguish two types of speech-sound, simply because the majority of sounds may be described and classified according to one or two techniques:

1. The type of sound which is most easily described in terms of articulation, since we can generally feel the contacts and movements involved. Such sounds may be produced with or without vocal cord vibration (voice) and very often have a 'noise' component in the acoustic sense; these sounds fall generally into the traditional category of consonants and can be called the consonantal or non-vocoid (=contoid) type;

2. The type of sound, depending largely on very slight variations of tongue position, which is most easily described in terms of auditory relationships, since there are no contacts or narrowings which we can feel with any precision. Such sounds are generally voiced and have no noise components; these sounds fall generally into the traditional category of vowels and can be called the vowel or vocoid type.

In order to describe the articulation of vowels it is essential to give an account of the state of the tongue (in terms of closeness, front to back positioning, and muscular tenseness or slackness) and of the lips, which may be spread, neutral or rounded. As in ordinary E. speech all vowels are normally voiced, this feature need not be specified.

For consonants it is important to specify whether the sound is oral or nasal; where and of what kind are the closures or narrowings involved; and whether voice is present (cf. below, pp. 84-86 ).

It should also be noted that some sounds are subject to variation of length and others are not. Generally the terms 'long', 'half-long' and 'short' are used to describe this feature where necessary.

## Chapter 3

### THE SOUNDS OF ENGLISH

#### 1. Types of English Pronunciation

No two people use precisely the same sounds in speaking. This is because each person has his own configuration of the vocal tract. Each set of speech organs is slightly different and gives a special quality to the sounds uttered. Nevertheless we do distinguish between those speakers who have the "same" pronunciation and others whose speech is that of another type.

The form of lg. used by each individual speaker is sometimes called an idiolect in contrast to a dialect which is used by a geographical or social sub-section of its speakers (cf. B. Shaw's humorous reference to the 45,000,000 dialects of Great Britain in his time).

In E. as in any other living lg. there are a number of different types of pron. These differences in pron. arise from a variety of causes, such as locality, social surroundings, early influences, style of utterance, or individual peculiarities (e.g. education, age, sex, etc.).

#### - (1) Local Differences in Pronunciation

In the various parts of the British Commonwealth, as well as in the U.S., the E. lg. has developed differences of pron. and vocabulary which distinguish it from the lg. of England. The kinds of E. spoken in the U. S., Australia, Canada, South Africa, etc., offer interesting examples of the changes that take place in a lg. due to development in a remote and new environment.



In addition to the educated standard in each major E.-speaking country today, there are local forms of the lg. known as regional dialects.

The differences in pronunciation between the various kinds of E. spoken today may be differences in sounds, stress, intonation, etc. Thus, e.g., there are at least five phonetic variants of the /r/ phoneme /r, r̄, ɹ, R, / (see below, p. 117); the word 'man' is pronounced [mæn] in educated Southern BE, [mæn] in South Wales, [mæn] in Lancashire, [men] in Cockney, etc., in Yorkshire words with the [ʌ] sound in Southern BE are pronounced with [u]: He loves his son very much [hi luvz hiz 'sun veri 'muɛ]; the Cockney pronunciation of the sentence "I'd like to go to Cambridge today" is something like [ɔɪd laɪk tə ɡəʊ tə 'kæmbriʃ tədeɪ]; the American habitually uses an [æ:]-sound in 'class, grass, fast, path', etc., where the Southern BE speaker has the vowel [ɑ:]; the words 'advertisement, nephew' are usually pronounced [ædvə'taɪzmənt], [nefju:] in AE, but [ædvə:tɪzmənt], [nevju:] in BE; AE intonation is more even, i.e. it has a lesser range than BE intonation, etc., etc.

## (2) Individual Differences in Pronunciation

Individual differences in pron. can be due to:

(a) Age. Thus younger speakers of Southern BE are said to prefer the short vowel in words, such as 'off, soft, cross, coffee, gone', which tend to be said by the older generation with /ɔ:/. The centralization of the first element of the diphthong in 'home' ([heum, hɜum]) is likewise a fairly recent development. The somewhat closer pron., with stronger lip-rounding, of the vowel in 'saw' is another change noticeable among young people speaking Southern BE, (cf. below, p. 49, "advanced RP").

(b) Sex. Women speakers in southern England appear to prefer the long /ɔ:/ in 'off, soft, coffee', etc. It is also more usual for female speakers to pronounce 'which, where, whine', etc. with an initial [hw-] or [ʍ-] (see below, p. 113).

(c) Education. The lack of adequate educational facilities for all sections of the population in E.-speaking countries means that many speakers retain pronunciational features characteristic of the uneducated surroundings in which they have grown up, e.g. the diphthongs and the dropping of the n's in the case of the Cockney, various types of assimilation in vulgar AE speech, etc.

In a capitalist society, the amount of education that one has received very often depends on one's social status. There is still, therefore, especially in Britain, a hierarchy of distinctions of accent depending on the social milieu to which a speaker belongs. Less educated people usually retain the characteristic features of their regional pronunciation.

### (3) Stylistic Variants of Pronunciation

All speakers use more than one style of pron. A person may pronounce the same word or group of words quite differently under different circumstances, depending on whether he is delivering a lecture, speaking at an informal birthday party, conversing with a stranger or speaking with members of his own family at home, etc.

This is what Bernard Shaw says on the subject in his recorded "Spoken E. and Broken E.": "Do people always speak in the same way? Nobody does. I am speaking to an audience of many thousands of gramophonists, many of whom are trying hard to follow my words syllable by syllable. If I were to speak to you as carelessly as I speak to my wife at home, this record would be useless; and if I were to speak to my wife at home as carefully as I am speaking to you, she would think that I am going mad.

Suppose I forget to wind my watch and it stops. If I ask a stranger, I say 'what o'clock is it?' The stranger hears every syllable distinctly. But if I ask my wife, all she hears is 'cloxst'! Of course I know that I should speak to my wife as I would to a queen and she should address me

as a king, but we don't. We all have company manners and home manners. Even when our home manners are as good as our company manners and, of course, they ought to be much better - they are always different; and the difference is greater in speech than in anything else."

There are several variants of the spoken lg. and they are generally alluded to as different styles of speech, each having certain phonetic peculiarities. For practical purposes it is important to distinguish the two most extreme stylistic varieties of pron.: full style and rapid colloquial style. Full style is used when our speech is slow, and when we are inclined to pronounce words and sounds clearly and carefully. These styles differ mainly in the use of full and weak (reduced) forms, the degree of reduction, assimilation and the tempo and rhythm of speech. E.g., in rapid colloquial pron. 'I should have thought so' is commonly pronounced as [aɪ ʃd v 'θɔ:t sou], 'Is there a ...' as ['ɪzðəə...]; the words 'actual, suppose, perhaps' would sound as ['æktʃuəl, s'pouz, præps] in colloquial speech, but ['æktʃuəl, sə'pouz, pə'hæps] in full style (see below, p.155 ff. for a discussion of strong and weak forms).

#### (4) Standards of English Pronunciation (Received Pronunciation, etc.)

The existence of numerous regional, social, individual and stylistic differences in E. pron. raises the important question of which kind of pron. should be regarded as the best, i.e. the standard form of pron., and the one to be recommended for teaching purposes both in E.-speaking countries and abroad, for use on the radio and television, etc.

The standard of pron. of every national lg. must be intelligible to all those who speak that lg. and accepted as the norm of correct (orthoëpic) pron.

Such a standard (orthoëpic) pron. has usually come into being on the basis of the regional dialect which played the most important role in the development of a given nation and

its national lg. Such a regional dialect is generally that spoken in and near the capital city. E.g. Standard Estonian is based on the dialect of northern central Estonia and Tallinn; Standard Russian on the southern Great Russian dialects and that of Moscow in particular, Standard French on the dialect of the Ile-de-France and Paris; cf., however, the development of Standard Italian from the Tuscan dialect (Florence) and of Standard German from the lg. used by the Saxon chancery with an admixture of Luther's native East Middle German dialect.

Present-day so-called Standard E. is a direct descendant of the East Midland dialect with an admixture of Saxon elements that arose in London in the 14th century and was used mainly by the upper strata of the population (lower-class speech with its Saxon features developed into London Cockney).

Standard E. (St.E.) has been described as "the educated speech of London and district round it" (H. Sweet, *Primer of Spoken E.*, 1900) or "The general usage of educated people in the south of England" (D. Jones, *The Pronunciation of English*, 1911). Thus St.E. as originally defined had both social and regional connotations. St.E. pron. was regarded as having certain advantages which made it the best type of pron. in Britain. There was a very strongly snobbish attitude among the upper classes towards dialect and uneducated accents (cf. the picture preserved in B. Shaw's "Pygmalion"). People who aspired to jobs and promotion in government offices, the Army, the universities, the Church, etc. tried to get rid of their non-Standard accents. Before World War II very many jobs in Great Britain were closed to people who could not speak St.E. Some of the more rigid class barriers have begun to break up since the war, owing to very strong public pressure, and it is somewhat easier for bright young people to get jobs in formerly exclusive professions. Accents are not frowned upon so severely as formerly. Nevertheless, it should not be forgotten that jobs in the Foreign Office, etc. are still usually closed to others than the graduates of exclusive public schools such as Eton, Harrow, Winchester,

etc. and the universities of Oxford and Cambridge. It is not an exaggeration to say that a man's accent has more significance in England even today than anywhere else in the world. Although St. E. pron. no longer has any regional connotation (because the public schools and older universities are attended by people from all over the country), it has become a significant marker of social class in all parts of England, being opposed everywhere to the broad accents of working-class folk. Consequently, St. E. may be called a class dialect.

At the same time, however, improvements in communications of every kind, first-hand acquaintance with AE during the war and after, tourism, etc., have tended to weaken gross differences in dialect and to produce a new, more tolerant attitude to non-Standard types of pron. In consequence most present-day British phoneticians no longer defend St. E. pron. as the only really good kind of E. pron. Even the term "Standard" has been dropped. By 1950, when the "Pronunciation of English" was rewritten, D. Jones had decided: "... it can no longer be said that any standard exists, nor do I think it desirable to establish one." A similar retreat is apparent in the later editions of the "English Pronouncing Dictionary" and the "Outline of English Phonetics". The term "St.E. pron." has been replaced by "Received Standard" or "Received Pronunciation (RP)". The attitude towards RP today is well summed up by D. Jones in the introduction to his "An English Pronouncing Dictionary" (13th ed., 1967, p. xvii): RP is the pronunciation "very usually heard in everyday speech in the families of Southern English people who have been educated at the public schools. This pronunciation is also used (sometimes with modifications) by those who do not come from Southern England, but who have been educated at these schools. The pronunciation may also be heard to an extent which is considerable though difficult to specify, from natives of Southern England who have been educated at these schools. It is probably accurate to say that a majority of Londoners

who have had a university education, use either this pron. or a pron. not differing greatly from it."

D. Jones adds: "I do not regard RP as intrinsically "better" or more "beautiful" than any other form of pron. I have recorded it, because it happens to be the only type of E. pron. about which I am in a position to obtain full and accurate information". He goes on to claim utilitarian advantages for RP, however, on the grounds that "it is widely understood in the E.-speaking world and that books dealing with it are easily accessible".

RP is regarded today as an unofficial standard of E. pron. in Great Britain and in most countries where E. is taught as a foreign lg. Actually, as we have seen, it is a class dialect, the number of whose speakers is probably not over 8-10 million (out of a total of some 270 million speakers of E.). This choice of RP is not based on any intrinsic superiority. Which kind of E. is to be preferred is ultimately a matter of taste and opinion. The Scot or Northerner may feel that a Southern E. pron. is careless, affected or even ugly, the Australian likes his kind of E. best, and the American points with pride to the overwhelming numbers of people speaking AE. The principal reasons why RP has been adopted as the teaching norm in the Soviet Union and most other countries may be summed up as follows: (1) tradition and sentiment, after all RP is the pron. of London, i.e. the capital of England, the country where the E. lg. originated; (2) RP has been recorded, studied and described at an earlier date, more comprehensively and thoroughly than any other type of E. (except quite recently AE); (3) RP is very extensively regulated and standardized, i.e. there are fewer moot points in this than in most other forms of E. pron.; (4) RP is easily understood by all who speak E. because it is not an extreme but an intermediate form of E. pron. combining elements of various dialects (a Scotsman may have some trouble in understanding a farmer from Devonshire and vice versa, both, however, understand a BBC announcer).

It should be borne in mind that in addition to RP AE now affords a clear alternative model for the foreign learner. AE vocabulary, grammatical usage and also pron. are at present exercising some influence on the development of E. in England itself. Contemporary American linguistics has provided a thorough analysis of AE, including its own phonemic composition (K. L. Pike, J. S. Kenyon, A. Marckwardt, etc.), as a basis for effective teaching. In Latin America it is AE that is taught as a foreign lg. at schools and universities. Chairs of AE have been set up at Scandinavian, German and French universities. An American pron. of E. is likewise now completely acceptable in Britain.

Alongside RP and AE pron., Scottish E. and Irish have also come to be recognized as standards.

At the present time the first attempts are being made to establish an International Standard of E. with a neutral or compromise vocabulary and pronunciation. Anglo-American agreement is needed, e.g., to decide whether the [æ:] or [ɑ:] sound should be used in teaching the pron. of words, such as 'class, fast'; which of the following variants should be used by foreign learners: lift - elevator, petrol - gas(oline), Foreign Office - State Department - Foreign Ministry, etc. Obviously the foreign learner cannot be expected to learn several words meaning the same thing or several variants of pron. (at least not at an elementary or intermediate level). Until a kind of general agreement is reached RP remains the standard in the Soviet Union and most European and African countries, at any rate. Our analysis of E. pron. will also be based on RP.

It should be pointed out that RP is not entirely uniform and that quite a number of words can be pronounced in two or more ways. This is true not only of so-called eye-words (e.g. phthisis, gaseous, luxurious, etc.), but also of a few common everyday words (e.g. always, again, year, direct, etc.). In some cases the stress may vary (e.g. laboratory, hospitable, television, etc.). Two RP speakers with the same stock of phonemes may distribute them

differently. They may agree, for instance to use /æ/ in cat and /ɑ:/ in cart, but differ in the phonemes they use in, e.g. 'lather' and 'transfer'.

The sounds of spoken lg. are always changing, slowly but constantly. Within RP itself it is convenient to distinguish three main types: (1) the most archaic or conservative type of RP used by the older generation and, traditionally, by certain professions or social groups; (2) the neutral general form of RP most commonly in use and typified by the pron. adopted by the BBC; and (3) the advanced variety of RP used by young people of exclusive social groups - mostly of the upper classes. The last type is usually felt to be 'affected' by other RP speakers, in the same way that all RP types are liable to be considered affected by those who use unmodified local dialects. Advanced RP pronunciations, however, when they are not the result of temporary fashion, may indicate the way in which the RP system is developing and be adopted in the future as general RP.

## 2. English Pronunciation and Spelling

The regular and logical correspondence of pron. and spelling is obviously of great significance in enabling lg. to perform its function as the most important means of human communication.

The spelling of many E. words is notoriously inconsistent and confused. It is a well-known fact that the E. lg. is written today largely in the same manner as it was spelt at the time of William Caxton, the first E. printer, towards the close of the 15th century. Most of the subsequent changes in phonology, such as the Great Vowel Shift and the disappearance of sounds in certain combinations, have found hardly any reflection in E. spelling. In brief, E. orthography is essentially historical in character. The transition from a runic alphabet to the Latin, the disservices of Norman-French scribes, the whims and vagaries of individual scholars - all have left their mark. The E.



writing system has grown by a series of accidents of history and much of it is antiquated and confused in so far as its relation to the spoken word is concerned.

It cannot be said that nothing has been undertaken to reduce the gap between E. spelling and pron. Speaking in very general terms, two kinds of attempts have been made over the centuries to bring about conformity between spelling and pron. in E.: one has tried (1) to reflect actual pron. in orthography, and (2) to pronounce words as they are spelt ("spelling pronunciations").

Most of the schemes to restore some measure of correlation between E. spelling and pron. have sought to achieve the first aim. Numerous plans have been brought forward in this connection by individuals as well as organizations. These proposals have aimed either at the addition of diacritical marks to the old letters or at the introduction of a new phonetic alphabet altogether, usually containing a larger number of characters than the 26 now used to represent the 40-odd sounds in the lg. Such schemes range from the one devised by a monk called Orm in the early 13th century, through those put forth by Th. Smith, J. Cheke, W. Bullokar in the 16th, A. Gil, Ch. Butler in the 17th century, B. Franklin, N. Webster in the late 18th century, I. Pitman, Al. J. Ellis ("Glossotype", "Paleotype"), H. Sweet ("Romic") and the Simplified Spelling Movement, etc. in the 19th century to the present century where we have had R. E. Zachrisson's "Anglic" in the 1930s, Axel Wijk's "Regularized E." (1959) and various phonetic alphabets devised in accordance with the will of B. Shaw who died in 1950 ("Shavian", "Shawscript", etc.).

The introduction over the centuries of numerous "spelling pronunciations", i.e. pronunciations based on the written forms of words (e.g. the pron. of 'housewife' as [hæuswaif] instead of [hʌzif], 'verdict' as [vɜ:dikt] instead of [vɔ:di], 'ski' as [ski:] instead of [ʃi:], etc.) has helped somewhat to narrow but not to bridge the existing gulf between orthography and pron. in the E. lg.

Despite an obvious need for reform and the existence of a large number of sensible plans, next to nothing has been achieved in the field of E. spelling reform. The principal obstacles have been the general conservatism of the E.-speaking peoples, the force of inertia and the indifference of most philologists. If one recalls the great break with tradition that occurred in 1928-1930 when Turkey switched over from the Arabic script to the Latin alphabet, and if we consider the sweeping changes in progress in People's China today, it would appear that spelling reform in E. is not so impossible as some people tend to believe. In a truly socialist Britain or America the people would not be encouraged to continue muddling through as they are doing at present. The advantages to education and the general gain in ease of communication resulting from spelling reform are so enormous that the State would surely do everything to carry out such a reform.

#### Phonetic Transcription

The inconsistencies of spelling in different lgs. take two opposing forms:

(1) representations of the same sound by a variety of spellings, e.g.: E. [ei] 'name, neigh, break, braid, they'; German [i:] 'Igel, ihn, viel'; French [ɛ] 'chaise, reine, père';

(2) the use of the same spelling for a variety of sounds, cf. the different phonetic values of the letter 'o' in E. 'cold, cot, son, prove, woman, women' and Russian 'xopomo'; of the combination 'ch' in German 'ich, ach, wachsen, schön'; of the letter 'e' in French 'donner, femme, le, client, cette'.

Conditions such as these examples show establish the need for an alphabet constructed on the plan of one sound per symbol and one symbol per sound. Such an alphabet is the I.P.A. or International Phonetic Alphabet. When the International Phonetic Association was founded in 1886, it

based its alphabet on H. Sweet's 'Broad Romic'. H. Sweet (1845-1912), the well-known British phonetician and linguist, devised a phonetic alphabet on the basis of the Latin or Roman alphabet. He called his alphabet Romic, which he used in two forms, Broad Romic and Narrow Romic.

The I.P.A. with remarkably few modifications is still in use. It is carefully designed and is more widely employed than any comparable alphabet. It may be found in many books, dictionaries and scholarly periodicals, among which is the official organ of the International Phonetic Association, "Le Maître Phonétique" (former editors include P. Passy, D. Jones; at present published at University College, London, ed. A. C. Gimson). The I.P.A. can be used to represent the pron. of any lg. (Estonian, Russian, Chinese, the Red Indian lgs., etc.) and is consequently an international alphabet in the true sense of the word. An advantage of the I.P.A. is that many of its symbols are identical with the orthographic symbols used as the letters of ordinary spelling (at least in the case of lgs. using the Latin alphabet). Thus some 16 of the letters of the E. orthographic alphabet (26 in all), taken in their most common interpretation, are identical with an equal number of the symbols of the phonetic alphabet (viz. p, b, t, d, k, g, l, m, n, r, f, v, s, z, h, w); by placing these letters in square brackets, we have the corresponding phonetic symbols [p, b, t], etc.

The type of I.P.A. transcription used in any particular case depends to some extent on the object in view. In works of a scientific character in which it is desired to have separate symbols for all the shades of sounds existing in several lgs, a very large number of symbols and diacritical marks may be necessary. Transcriptions of this kind, which introduce special signs and so-called modifiers are called narrow transcriptions (e.g. dark [ɤ̠], breathed [ɸ], dental [t̪], specially close [e̞], retroflex [ɻ], etc. belong to narrow transcription).

When, however, the object is rather to deal chiefly

with one lg. and that too from a strictly practical point of view, it is desirable that the form of transcription should be simple and should have as few diacritical marks as possible. Such a style of transcription is called broad transcription. In the very broadest I.P.A. transcription of E. the characters /ɛ, α, ɔ/ are dispensed with, /ɛə/ is written with /eə/, /α:/ is written /a:/, and /ɔ/ and /ɔ:/ are written /o/ and /o:/.

Modern pronouncing dictionaries still use different phonetic transcriptions. Two valuable dictionaries use phonetic symbols based on I.P.A. These are D. Jones's "An English Pronouncing Dictionary" and A. S. Hornby's "The Advanced Learner's Dictionary of Current English". Other dictionaries, e.g., the Oxford dictionaries, Webster's "New International Dictionary", "The American College Dictionary", H. C. Wyld's "The Universal English Dictionary", etc., use other types of phonetic transcription which can be misleading to the foreign learner accustomed to the I.P.A.

#### 4. General Articulatory Characteristics of English Speech Sounds

Before undertaking a discussion of the separate sounds that make up the phonetic system of a given lg. it is necessary to acquaint oneself with the general articulative position characteristic of the lg. (i.e. with what is called in Estonian its 'artikulatsioonibaas' and in Russian 'артикуляционная база').

In order to acquire a good pron. in a foreign lg., it is important to know whether the foreign sounds are usually produced in a more advanced or retracted position in comparison with those of the learner's mother tongue, whether they are relatively more open or closer, whether the speech organs tend to be tenser or more relaxed at the time of articulation, etc.

Probably the most difficult thing in learning a foreign

lg. is to acquire the correct articulative position. This is especially difficult when the learner is no longer a young child, i.e. when he has acquired certain pronunciational habits and his speech organs are no longer so elastic or pliant as in early youth. Many people retain the articulative position characteristic of their own lg. when speaking a foreign lg. It is also very common to substitute similar native sounds for foreign ones. The retention of a native articulative position and the use of native sounds when speaking in a foreign lg. is known as speaking with an accent.

The following are some features of E. pron. as compared with these of Estonian, Russian, German and French.

(1) In some lgs. there is a tendency to keep the tongue arch fairly low in articulating sounds, e.g. in Estonian, whereas in German and Russian the body of the tongue is usually raised high within the oral cavity. English sounds are generally produced with the tongue in a relatively low position. This lesser degree of tongue raising in the case of English and Estonian is easily noticeable if one reads the following sentences one after the other:

Mulle meeldib lugeda venekeelseid raamatuid.

I like to read Russian books.

Ich will gern russische Bücher lesen.

Мне нравится читать русские книги.

(2) Comparison shows that although Estonian and E. are both characterized by a fairly low articulative position, E. articulation is relatively more retracted. In pronouncing E. sounds and words, the tongue does not so often touch the teeth (as it frequently does in Estonian), but the alveoli. Russian articulation is also, on the whole, more retracted than that of Estonian, but (as was pointed out in the preceding section), it is closer (i.e. the body of the tongue is usually raised higher) than that of English. German and French have an advanced articulation.

(3) The articulation of E. vowels is characterized by the relative absence of lip-rounding and protrusion, in

other words, there is less labialization than in Estonian, Russian, German and French. The lips are more often in a neutral, inactive position, slightly open with the corners of the mouth somewhat retracted. In speaking E. the lips are never vigorously protruded or rounded except in rhetorical speech. This feature of E. pron. stands out clearly if one compares the pron. of such words as:

E. room	Est. ruum	Germ. Ruhm
pall	pool	Pol
dock	dokk	Dock
cook	kukk	Guck!
zone	tsoon	Zone

(4) Another general feature of E. pron. is the characteristic laxness or lack of tension of the muscles of the mouth and throat when producing sounds whose counterparts in Russian, German or French are articulated with considerable tension. As a rule English pronunciation is very lax, whereas that of Estonian is characterized by average tenseness. The absence of muscular tension in E. is a relative matter, since it must be borne in mind that there are very few sounds that can be produced without at least some tension.

E. consonants are, generally speaking, more tense than vowels.

One should also mention the constant tendency in E. to obscure the vowel sounds in all unstressed syllables. Unstressed E. vowels have a dull and slurred quality. Indeed the neutral vowel or schwa /ə/ is the most common vowel in the lg. (see below, p. 83).

To sum up - the principal features of E. articulation are its lowness, retracted position, general absence of labialization and relative laxness. It is due to all this that E. vowels usually sound somewhat sluggish and slurred, E. consonants dull and dark, in comparison with the generally clearer sounds in Estonian, Russian, German and French.

## 5. The Phonemic Composition of English

There is no agreement at present among specialists as to the number of phonemes in E. The figure usually given varies from 44-48. This is because estimates differ (1) according to the sense of the term "phoneme" adopted, and (2) because even within the RP form of E. pron. individual speakers vary somewhat.

A traditionalist inventory of E. phonemes covers vowels (monophthongs and diphthongs) and consonants only, i.e. what are called segmental phonemes by many representatives of the structural approach to lg. The latter regard various features of connected speech, e.g. the factors of stress, pitch, intonation, juncture, etc. as prosodic or suprasegmental phonemes.

In the revised edition of his "An Introduction to Descriptive Linguistics" (New York 1961, p. 50) H. A. Gleason gives the following inventory of E. phonemes: 24 consonants / p b t d k g ċ j f v θ ð s z š ž m n ŋ l r w y h /, 9 vowels / i e æ i ə a u o ɔ /, 3 semivowels / y w H /, 1 open transition (also known as the juncture phoneme) / + /, 4 stresses / / ^ \ ✓ /, 4 pitches / 1 2 3 4 /, 3 clause terminals (or terminal contours) / ↘ ↗ ↘ / . This makes a total of 46 phonemes (if one eliminates the duplications of / y w / which are listed both as consonants and vowels). A similar list containing 48 phonemes (including 14 vowels, 24 consonants and 10 phonemes of stress, intonation, pitch level and juncture) may be found in Ch. F. Hockett's "A Course in Modern Linguistics" (New York 1963, pp.59-60).

Lists of E. phonemes drawn up along traditionalist lines (i.e. excluding suprasegmental phonemes, which are dealt with separately as features of connected speech) usually contain from 44-46 items. The difference in number depends on whether the sounds [ʌ]<sup>1</sup>, [ɔə]<sup>2</sup>, etc., are granted phonemic status or not. Other discrepancies in analysis arise in the case of such sound combinations as affricates

<sup>1</sup> See below, p. 113

<sup>2</sup> See below, p. 81.

(e.g. [tš, dž]) and diphthongs (e.g. [ou, ei], etc.), which may be regarded as single phonemes or combinations of two. Such problems will be dealt with in the appropriate place below when discussing vowels and consonants.

It is interesting to note that lgs. differ considerably as regards the number of their phonemes. The smallest number of vowel and consonant phonemes reliably reported is 13, in Hawaiian; the largest, over 70, occurs in Abkhazian (in the northwest of the Georgian S.S.R.). E., Russian, German and French are in the middle range with 35-45. Opinions differ widely as to the number of phonemes in Estonian, a conservative estimate places it at about 30; this figure would be more than doubled if one includes the numerous diphthongs, the different degrees of length of vowels (välted), etc.

The following sections of this chapter contain a survey of the vowels (monophthongs and diphthongs) and consonants of RP, of their principal regional and social variants, as well as of the manner in which E. sounds differ from corresponding or similar Estonian sounds.

In the present handbook only vowels and consonants are regarded as independent phonemes. The phenomena of stress, intonation, juncture and other features of connected speech are dealt with in separate chapters.

## 6. The English Vowels. Their Classification and Description

### (1) Introductory

We have seen (pp. 37-40) that from the practical phonetic standpoint it is convenient to distinguish two traditional classes of speech-sounds: vowels and consonants.

The E. vowel phonemes may be divided into monophthongs and diphthongs.

A monophthong is a vowel in the pron. of which the organs of speech (principally the tongue and the lips) do not perceptibly change their position throughout the duration of the vowel. There are 12 monophthongs in RP, 7 of



which are short and 5 long:

(a) short -

hid, head, had, bud, dog, pull, farmer  
/i e æ ʌ ɔ u ə/

(b) long -

need, fool, hard, board, heard  
/i: u: a: ɔ: ə: /.

A diphthong is a vowel in the pron. of which the organs of speech start in the position of one vowel and glide gradually in the direction of another vowel, the full formation of which is generally not accomplished. Thus a diphthong is a combination of two vowel elements pronounced so as to form a single syllable. Most of the diphthongs in E. have a strong and distinct first element which is called the nucleus. The second element of an E. diphthong is rather short and weak and is called the glide.

Note 1. - Some linguists (especially in the U.S.A.) analyze the long monophthongs and diphthongs as complex syllabic units made up of combinations of the short vowels with a following /ə/ (or /h/), /j/ and /w/, e.g. /i:/ = /ij/, /ɑ:/ = /ə/ or /h/; /ei/ = /ej/, /ou/ = /ow/, etc. Such a treatment does not recognize any true diphthongs as /ei/, /ɔi/, etc. would be combinations consisting of two phonemes. The usual interpretation of such cases, however, is to regard them as single phonemes, i.e. /ei/ in [bei, wei], etc. is a compound mark for a unitary element (cf. the chemist's "He" for "helium" in contrast to "H" for "hydrogen").

On the other hand, it is true that in the articulation of E. /i:/ and /u:/ the organs of speech may change their position very slightly (and produce a glide in the direction of /ə/). Because of this possible diphthongal pron. these words are sometimes called diphthongized vowels or diphthongoids.

Note 2. - One may occasionally find references to so-called triphthongs in E. Combinations such as [aiə] in [faɪə] 'fire', [auə] in [paʊə] 'power', [eiə] in [leɪə] 'layer', etc., are generally disyllabic and consist of a diphthong followed by a monophthong. There are no true triphthongs in E.

## (2) Classification of the English Monophthongs

If we compare the tongue-raising of E. monophthongs in terms of the region of the mouth in which it takes place (front, centre, or back) and the degree of raising (close, i.e. high in the mouth, or open, i.e. low in the mouth), we can establish a table of rough articulatory relationships:

	Front	Centre	Back
Close	i: i		u: u
Mid-open	e	ə: ə ^	ɔ: ɔ
Open	æ		ɔ ɑ:

Note. - It has been the custom to explain the relationship of monophthongal vowels to each other by means of a diagram widely popularized by D. Jones and by his pupils, colleagues and critics in the form of the cardinal vowel diagram (Fig.14). The diagram was developed on the basis of a series of eight X-ray photographs showing the position of the tongue for each of the vowels /i, e, ɛ, a, ɔ, ɔ, o, u/. These eight photographs, superimposed upon each other, gave a composite effect. The highest points of

the arch of the tongue when producing individual sounds were marked on the picture and gave a pattern of the relative distribution of the vowels. The original composite diagram was conventionalized (by straightening its boundaries, etc.) into the form of a trapezium. Here the vowels /i, a, ɔ, u/ are marked at the corners of the diagram (they are pronounced with the highest point of the tongue arch as far as possible from the central neutral position). The vowels /e, ε/ divide the distance between /i, a/ while /o, ɒ/ are intermediate between /ɔ, u/:

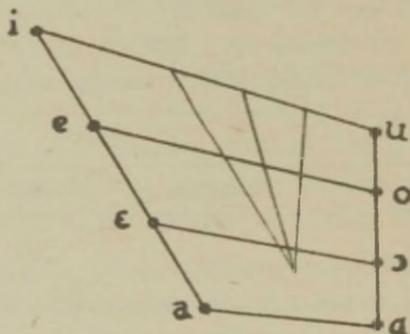


Fig. 14.- Diagram of the cardinal vowels

The total diagram may be taken as a conventionalized representation of the human mouth, with the lips to the left and the pharynx to the right. Such a set or scale of cardinal vowels (the word 'cardinal' as used here is taken from the nomenclature of the mariner's compass, on which the principal directions are called the cardinal points of the compass) with known acoustic qualities and invariable tongue and lip positions is convenient as a basis for describing the vowels of any lg. amongst themselves or the vowel sounds of different lgs. It must be borne in mind that cardinal vowels are theoretical vowels, arbitrarily fixed, and not necessarily the standard sounds of any lg. or dialect. Thus, although the whole concept of cardinal

vowels is artificial, it is nevertheless, useful for the purpose of comparison.

In order to be able to classify and describe the E. monophthongs properly, however, one should also know the position of the lips and the degree of tenseness of the organs of speech when the sounds are produced. Monophthongs are described accordingly as rounded or unrounded, tense or lax. It is also important to distinguish the duration of the sounds, i.e. to know whether they are long or short (e.g. [si:t] 'seat', [sit] 'sit'; [ʃɔ:t] 'short', [ʃɒt] 'shot').

Thus E. monophthongs may be classified according to the following data:

1. The position of the tongue.
2. The position of the lips.
3. Duration (or length).
4. Degree of tenseness.

### (3) Description of the English Monophthongs

In the following more detailed descriptions the E. vowel phonemes will be treated and numbered in a sequence based upon their quality relationship.

The monophthongs will be dealt with in three groups: front vowels, back vowels and central (mixed) vowels.

Figures giving the relative tongue-positions of E. and Est. vowels are provided in those cases where the pertinent vowels of the two languages differ considerably:

#### A. Front Vowels

There are four front vowels in MoE, viz. /i:, i, e, æ/.

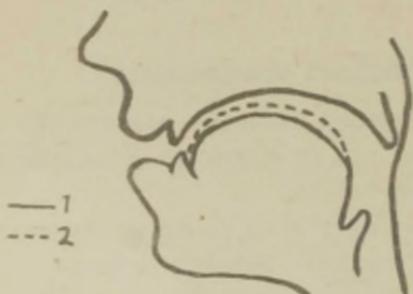
Vowel No.1: /i:/

Spelling. - ee - tree, cheese, meet; e - complete, be, these; ea - leaf, sea, reason; ie - piece, field, yield; ei, ey - seize, receive, key; i - machine, police, chemise.

Description. - In the pronunciation of /i:/ the bulk of the tongue moves to the front part of the mouth and the middle of the tongue is raised high in the direction of the hard palate, but not so high as to cause the stream of air to produce audible friction. The lips are spread or neutral: the tongue is tense, with the side rims making a firm contact with the upper molars. The vowel is often slightly diphthongized (especially in final positions) with a glide from a more open and retracted position to a closer and more advanced one (sometimes transcribed as [ij]).

Thus the vowel /i:/ may be defined as front, close, unrounded, diphthongized, long and tense.

Comparison. - The sound is similar to the Est. long i. The latter, however, is tenser and closer, i.e. the back of the tongue does not rise so high towards the hard palate in the E. sound (see Fig. 15).



Cf. the vowel in the E. 'neat, peak, seal, scene, keen' with the tenser vowel in the Est. 'niit, piik, siil, siin, kiin'.

Fig.15. - Relative tongue positions for E. /i:/ - 1 and Est. long i - 2.

Vowel No.2: /i/

Spelling. - i - sit, with, fifth; y - city, symbol, rhythm; e - pretty, needed, English, except; ie - ladies, cities; a - private, village.

Description. - The short /i/ is pronounced with the bulk of the tongue in the front part of the mouth cavity, but slightly retracted. The middle of the tongue is raised in the direction of the hard palate, but not so high as for /i:/. The lips are spread or neutral; the tongue is lax (compared with the tension for /i:/, with the side rims making a light contact with the upper molars).

The vowel /i/ may be defined as front-retracted, close, unrounded, short and lax.

Variants. - The short /i/ may occur in all positions in the word. The degree of closeness and centralization varies according to the strength of the stress falling upon the vowel and its position in the word, e.g. in the word visibility. The realizations of /i/ in syllables 1 and 3 are near to the sound described above, those of syllables 2 and 4 being somewhat more centralized, and that of the last syllable often having a tongue-position lower than half-close. Generally speaking /i/ is somewhat more open and resembles /e/ in a final position and when unstressed, cf. the two vowels in 'pity', 'very'. In the unstressed syllables of certain words there is in RP free variation between /i/ and /ə/, e.g. in 'possible', 'interesting', 'problem'.

Comparison. The E. /i/ resembles the Est. short i, but is produced with lesser tension and with the back of the tongue in a slightly lower and more retracted position

(see Fig.16), hence its quality that may seem intermediate between /i/ and /e/ to the Est. ear. Cf. E. 'tip, lip, pick' and Est. 'tipp, lipp, pikk'.

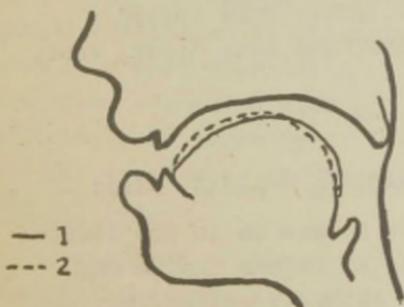


Fig.16. - Relative tongue-positions for E. /i/ - 1 and Est. i - 2.

It is of the utmost importance to maintain a proper quantitative relationship between E. /i:/ and /i/. Note the difference in meaning between [ʃip] ship - [ʃi:p] sheep, [bit] bit - [bi:t] beat; [sit] sit - [si:t] seat, [mil] mill - [mi:l] meal, [lik] lick - [li:k] leak.

### Vowel No.3: /e/

Spelling. - e - set, bed, went; ea - head, dead, breath; a - many, Thames. Note the following words with /e/: says, said, bury, Leicester.

Description. - In the pronunciation of /e/ the bulk of the tongue is in the front part of the oral cavity. The middle of the tongue is raised in the direction of the hard palate, but a little less than for /i/. The lips are spread and are slightly wider apart than for /i/. The vowel /e/ is short and lax.

The vowel /e/ may be defined as front, mid-open, unrounded, short and lax.

Variants. An advanced RP form of /e/ is diphthongized in the direction of /ə/, e.g. 'men, said, get' [me<sup>ə</sup>n, se<sup>ə</sup>d, ge<sup>ə</sup>t]. Such diphthongization is often characterized as 'affected'.

Comparison. - E. /e/ is of approximately the same quality as the Estonian e. The following are the principal differences in the articulation of the E. sound: (1) the back of the tongue is somewhat lower and more retracted, (2) the corners of the mouth are slightly more spread.

Cf. E. 'test, bend, set, tennis' and Est. 'test, vend, sett, tennis'.

### Vowel No.4: /æ/

Spelling. - a - sat, hand, lamp; ai - plait, plaid.

Description. - The bulk of the tongue is in the front part of the oral cavity. The tongue is rather low in the mouth. The middle of the tongue is slightly raised, but not so high as for /e/. The side rims of the tongue make a very

slight contact with the back upper molars. The lips are neutrally open.

The vowel /æ/ may be defined as front, almost fully open, unrounded.

Variants. - This short vowel tends to be somewhat lengthened in RP, especially before /b, d, g, ʃ, m, n/ (cab, bad, bag, badge, jam, man). In advanced RP one can also notice a diphthongization of /æ/ towards /ə/, e.g. 'bad, cat' [bæ<sup>ə</sup>d, kæ<sup>ə</sup>t].

Comparison. - The E. /æ/ is tenser than the Estonian ä (actually, it is the only E. vowel that is normally produced with more tension than in the case of a corresponding Est. sound). The E. /æ/ is also somewhat more open, it is produced with greater lip-spreading and with a characteristic slight downward jerk of the lower jaw.

Cf. E. 'man, cat, pack' and Est. 'mänd, kätt, päkk'.

## B. Back Vowels

There are six back vowels in English, viz. /ɑ:, ɔ, ɔ:, u, u:, ʌ/.

Vowel No.5: /ɑ:/

Spelling. - a - pass, after, bath; ar - part, car, march; ear - heart, hearth; er - clerk, Derby, sergeant; al - calm, half, palm; au - aunt, laugh.

Description. - The bulk of the tongue is retracted and held in the lowest position possible in the mouth. The back of the tongue is slightly raised. The lips are neutral. There is a wide separation of the jaws. The vowel is long. (The sound resembles that produced when the doctor is examining your throat.)

The vowel /ɑ:/ may be defined as back, open, unrounded, long and tense.

Comparison. - The articulation of E. /ɑ:/ is more retracted and open than that of the Estonian long ä. The Est. vowel is produced with some protrusion and rounding



of the lips, whereas the E. /ɑ:/ has no labialization.

Cf. E. 'part, mast, car'  
and Est. 'paat, maast, kaar'.

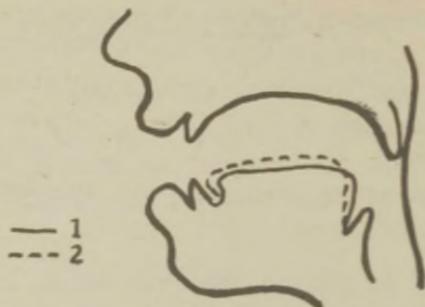


Fig.17. - Relative tongue-positions for E. /ɑ:/ - 1 and Est. ā - 2.

Vowel No.6: /ɔ/ (often represented by the symbol /ɒ/).

Spelling. - o - dog, dock, holiday, sorry; a - was, want, swan, quality; ou, ow - cough, knowledge; au - because, Australia, sausage.

Description. - This short vowel is articulated with wide open jaws and with the tongue in a position which is more retracted than that of /ɑ:/ or any other E. vowel. The back of the tongue is raised a little more than for /ɑ:/. There is slight lip-rounding.

The vowel /ɔ/ may be defined as back, open, slightly rounded, short and lax.

Variants. - In AE and some BE dialects (notably those of SW England) this vowel is produced with no lip-rounding and a tongue-raising often somewhat advanced from a true back position. There is, therefore, considerable qualitative similarity between this kind of /ɔ/ and RP /ɑ:/. The phonemes are kept distinct either through a complex of length and quality (e.g. 'cough, calf'), or through the pronunciation of post-vocalic r (e.g. in 'dock, dark' or 'lodge, large').

Many words containing /ɔ/ + /f, θ, s/ have an alternative pron. with /ɔ:/, e.g. 'off, cloth, cross'. Such a variant is typical of conservative RP and has a social prestige value in southern England, but is generally being

replaced in the speech of the younger generation by the short /ɔ/ (cf. above, p.42).

Comparison. - The E. /ɔ/ is articulated in a more retracted and open position than Est. o. There is only the slightest lip-rounding and no protrusion. A characteristic articulatory feature of the E. vowel is a sudden downward movement of the lower jaw.

Cf. E. 'mock, dock, lock, sock, ox, nonsense' and Est. 'mökk, dokk, lokk, sokk, oks, nonsenss'.

Vowel No.7: /ɔ:/

Spelling. - or - cord, born, horse; aw - saw, jaw, yawn; ou, au - bought, daughter, cause; a - all, talk, water, quart; ore, oor, oar, our - before, door, oar, court.

Description. - This relatively long RP vowel is articulated with the bulk of the tongue in the back part of the oral cavity. The back of the tongue is raised in the direction of the soft palate, a little higher than for /ɔ/, no contact being made between the tongue and the upper molars. The lips are tense and rounded to form an opening considerably smaller than in the case of /ɔ/. The opening between the jaws is medium.

The vowel /ɔ:/ may be defined as back, open, rounded, long and tense.

It should be emphasized that /ɔ:/ is not a long variant of /ɔ/, but a qualitatively different vowel altogether.

Variants. - For the increasingly frequent substitution of /ɔ:/ for [ɔə], see below, p.81.

Comparison. - E. /ɔ:/ differs from the Est. long ō in (1) being a more open and retracted vowel, and in (2) its lesser rounding and only slight protrusion of the lips.

Cf. E. 'tall, pall, mourn' and Est. 'tool, pool, moon'.

Vowel No.8: /u/

Spelling. - u - put, full, sugar; o - wolf, woman;

oo - good, foot, book, wood; ou - could, should, courier.

Description. - The E. short /u/ is pronounced with the bulk of the tongue in the back part of the oral cavity, but somewhat advanced (it has, therefore, a symmetrical back relationship with the front vowel /i/). The back of the tongue is raised in the direction of the soft palate, higher than for /ɔ:/. The tongue is laxly held (compared with the tensor /u:/. The lips are closely, but loosely rounded. The distance between the jaws is not so wide as for /ɔ:/>.

The vowel may be defined as back-advanced, close, fairly rounded, short and lax.

Comparison. - This E. vowel is very similar to the Est. short u. The essential differences are the somewhat more open articulation as well as lesser lip-rounding and protrusion of the E. /u/.

Cf. E. 'book, cook, took' with Est. 'pukk, kukk, tukk'.

Vowel No.9: /u:/

Spelling. - oo - food, soon; o - do, who, lose; ou, ough - soup, wound (n.), through; u - rude, June; ew, ue, ui, oe - chew, blue, juice, shoe. (Note: in many cases of the spelling u, eu, ew, ue, ui /u:/ is preceded by /j/, e.g. 'music, duke, neuter, new, argue, nuisance'; in some words both /u:/ and /ju:/ are heard, e.g. 'suit, enthusiasm').

Description. - In pronouncing the long /u:/ the bulk of the tongue is retracted more than for /u/, but is still somewhat advanced from true back. The back of the tongue is raised very high in the direction of the soft palate, even higher than for /u/. The articulation of /u:/ is tense compared with that of /u/, though no firm contact is made between the tongue and the upper molars. The lips tend to be closely rounded. The opening between the jaws is narrower than for /u/.

During the pronunciation of /u:/ the tongue usually moves from a more advanced and open position to a closer and more retracted position, as a result of which the vowel

is diphthongized to [uw], especially in final positions ('do, shoe, who').

The vowel /u:/ may be defined as back, close, rounded and diphthongized, long and tense.

Comparison. - The E. long /u:/ differs from Est. long u in (1) being produced with the back of the tongue in a somewhat lower position, and (2) its lesser lip-rounding and protrusion.

Cf. E. 'fool, tool, room (when pronounced with a long vowel), tomb' and Est. 'huul, tuul, ruum, tuum'.

Vowel No.10: /ʌ/

Spelling. - u - sun, cut, dull; o - son, come, mother; ou - country, southern, young; oo - blood, flood; oe - does. (Note: many earlier u spellings have been changed to o, especially in the vicinity of u, m, n, w, v, e.g. in love, some, won', etc.).

Description. - The short RP /ʌ/ is articulated with the bulk of the tongue in the back part of the oral cavity, but somewhat advanced. The back of the tongue is raised in the direction of the soft palate, no contact being made between the tongue and the upper molars. The lips are spread. There is considerable separation of the jaws, but the opening between them is not so wide as for /ɑ:/.

This E. vowel may be defined as back-advanced, mid-open, unrounded, short and lax.

Comparison. - The short /ʌ/ is more retracted and open than Est. a or o. If one pronounces Est. o, simultaneously spreading the lips by retracting the sides of the mouth, the result is the E. /ʌ/.

Cf. E. 'cup, some, come' and Est. 'kapp (kopp), samm, kamm (komm)'.

Since the sound /ʌ/ occurs in few other lgs., foreign students incline to substitute /ɑ/, /ɑ:/, /æ/, /ɔ/, or /u/ for it. It is recommended that the foreign learner should

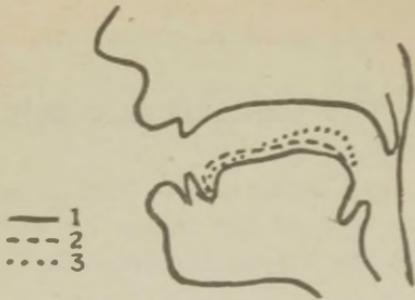


Fig.18. - Relative tongue-positions for E. /ʌ/ - 1, Est. o - 2 and u - 3.

practise the pronunciation of pairs of words in which /ʌ/ is contrasted with these other sounds, e.g. 'cup-cap, cuff-cough, cull-cool, match-much-march,

ban-bun-barn, hat-hut-heart'.

### C. Mixed Vowels

There are two mixed (or central) vowels in English, viz. /ə:,ə/.

#### Vowel No.11:/ə:/

Spelling. - ir, yr - bird, girl, myrtle; er, err, ear - her, err, earth; ur, urr - turn, nurse, purr; (w +) or - word, work; our - journey, courtesy. (Note: /ə:/ in 'colonel' [ 'kə:nl ] ).

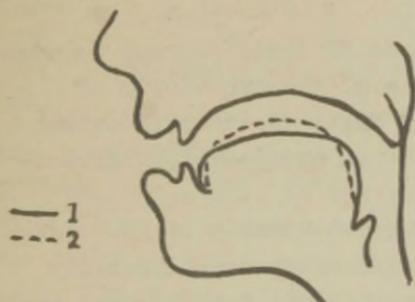
Description. - In producing the long /ə:/ the tongue is more or less flat in the oral cavity. Both the middle and the back of the tongue are simultaneously and evenly raised almost as high as for /e/, no firm contact being made between the tongue and the upper molars. The tip of the tongue generally touches the base of the lower teeth. The lips are neutrally spread. The opening between the jaws is narrow.

The vowel /ə:/ may be defined as mixed, mid-open, unrounded, long and tense.

This vowel occurs only in an accented position.

Comparison. - It is comparatively rare to find a long central vowel such as E. /ə:/ in other lgs. Estonians tend to replace E. /ə:/ by their own central õ or front rounded ö. Est. õ is more retracted and closer than the E. /ə:/. The Est. ö is quite unacceptable in E. because of its lip-rounding.

E. /ə:/ is intermediate in quality between the Est. vowels õ and ö. To obtain /ə:/ keep the tongue somewhat lower than for õ, avoid letting the lower jaw drop with a jerk, and, above all avoid rounding the lips (rounding would produce ö). Put in another way, E. /ə:/ can be obtained by pronouncing Est. ö with slightly spread lips.



Cf. E. 'kirk, lurk, girl, earned, sir, purr' and Est. 'kõök, lõök, görl - kõõl, vöönd - õõnt, söö - sõõr, pöör - põõn.

Fig.19. - Relative tongue-positions for E. /ə:/ - 1 and Est. õ - 2.

#### Vowel No.12: /ə/

Spelling. - /ə/ may be spelt with most vowel letters and their combinations, e.g. a (woman), e (seamen), i (possible), o (oblige), u (suppose), ar (particular), er (mother), or (doctor), ou (famous), our (colour), ure (figure), etc. In addition /ə/ is normal in common unaccented (weak) forms of such words as 'a, an, the, to, for, but, and', etc.

Description. - The short /ə/ is pronounced with the tongue flat. The tongue is raised a little, but less than for /ə:/. The lips are only slightly spread or neutral. The opening between the jaws is narrow.

The vowel /ə/ may be defined as mixed, mid-open, unrounded, short and lax. This vowel occurs only in unaccented positions and has a very high frequency of occurrence. It is also known as the neutral, obscure vowel or 'schwa'.

Variants. - As neither /ə/ or /ə:/. have any quantitative opposition within the central area of vowel articulation, considerable variation is possible within this region. The degree of tongue raising may differ somewhat and the resulting sounds vary from mid-close or slightly above to

mid-open or slightly below.

The neutral vowel /ə/ easily acquires different shades depending on its position in the word and on the neighbouring sounds. There are several more or less distinct allophones of the phoneme /ə/.

Thus /ə/ is more open in a final position where it resembles /ʌ/, e.g. in 'letter' ['letə], 'mother' ['mʌðə], 'centre' ['sentə].

In conservative and advanced RP final /ə/ may be even more open and similar to /ɜ:/, e.g. the two vowels of father ['fɑ:ðə]. The opening of final /ə/ to this extent is, however, commonly felt to be an exaggeration characteristic of affected speech.

A closer and slightly retracted variety of /ə/ occurs at the beginning and in the middle of words, especially immediately before, after or between the back-lingual consonants /k/ and /g/, e.g. 'ago' [ə'gou], 'canal' [kə'næl]; cf. 'sat around' ['sæt ə'raund], 'and back again' ['bæk ə'geɪn].

It should be pointed out that in those kinds of E. where postvocalic /r/ is pronounced, the cases of RP /ə/ represented in the spelling by vowel + r are realized as retracted /ɪ/ or /ʌ/ + /r/, e.g. in Scottish E, or as [ə] + [ɹ] in some kinds of AE and southwestern BE. In these types of E., words such as 'finer' and 'China' (which rhyme in RP) are phonetically different in their final syllable.

Comparison. - The vowel /ə/ does not occur in Standard Est. The sound is intermediate in quality between Est. ö and ö̇. In producing /ə/ one may proceed from the short Est. ö̇, the tongue should be kept slightly lower than for /ɜ:/ (see above, p. 71) and lip-rounding should be avoided (pronounce a very short Est. ö̇ with neutral lips and a low, retracted tongue-position).

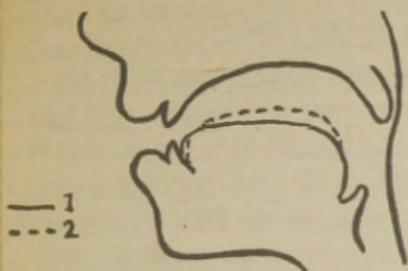


Fig.20. - Relative tongue-position for E. /a/ - 1 and /ə:/ - 2.

#### (4) Description of the English Diphthongs

A definition of diphthongs and references to several problems connected with the diphthongs in E. have been given above (see p.58). It was pointed out that most E. diphthongs have a strong and distinct first element (nucleus), whereas their second elements (glides) are relatively short and weak. Diphthongs of this type are said to be 'falling'. All the E. diphthongs with the occasional exception of /iə, uə/ are falling.

There are the following nine diphthongs in RP: /ei, ou, ai, au, ɔi, iə, ɛə, ɔə, uə/.

Note 1: - Of these /ɔə/ is optional, i.e. many RP speakers do not use it, replacing it by the long vowel /ɔ:/ (see below, p.81). Hence the number of E. diphthongs is sometimes given as eight (instead of nine) and this accounts in part for the discrepancy in the number of E. phonemes as listed by different authors.

Note 2: - Cf. the 8 - 9 diphthongs in E. with the 30-odd diphthongs in Est. The latter may be either falling or rising (i.e. their second element is relatively clearer and stronger than the first) depending on their phonological degree of length (i.e. 'vältusaste'); see "Eesti keele grammatika I, Häälikuõpetus ja ortograafia." 1. vihik, koostanud P. Ariste jt., Tartu 1963, pp. 63-65.

Vowel No. 13: /ei/

Spelling. - a - late, make, waste; ai, ay - aim, rain, day; ei, ey - eight, veil, they; ea - great, break. (Note:



halfpenny ['heɪpni], gaol [ˈjɛɪl], gauge [geɪʃ]).

Description. - The nucleus of the diphthong /ei/ is practically the same as (slightly closer than) the vowel /e/. After completing the nucleus the middle of the tongue glides still higher, moving in the direction of /i/, although the actual formation of /i/ is not accomplished. During the pron. of both the nucleus and the glide the lips are spread. The opening between the jaws is rather narrow, but a little wider for the nucleus, i.e. there is a slight closing movement of the lower jaw for the glide. Thus if the diphthong /ei/ is repeated a number of times in rapid succession [ei - ei - ei], it will be observed that the lower jaw keeps moving up and down.

Variants. - In some regional speech the nucleus of this diphthong may be considerably more open. In popular London speech (Cockney) the 1st element is actually as open as /a/ and hence the Cockney pron. of 'paper, later, make' is very similar to the RP pron. of 'piper, lighter, mike'.

In advanced RP this phoneme may be realized in the form of a fully long allophone, e.g. 'day, game, made' sound almost as if they were pronounced [de:], [ge:m], [me:d]. This monophthongized form may also be heard in cases where, for rhythmic reasons, the quantity is somewhat reduced, e.g. 'lady, nature, relation', with an [ɛ].

Comparison. - The E. /ei/ differs from the corresponding Estonian diphthong in the following points: (1) the nucleus is more open than the Est. e, (2) the glide is weaker than in the Est. diphthong.

Cf. E. 'rain, sane, mail' and Est. 'Rein, sein, meil'.

#### Vowel No.14: /ou/

Spelling. - o - so, old, home; oa - road, oak, soap; oe - toe, foe, hoe; ou, ow - though, shoulder, know.

Note: [ou] in 'mauve, brooch, beau, sew, don't, won't'.

Description. - The nucleus of this diphthong is a back-advanced, mid-open vowel produced with the back of the tongue

raised in the direction of the soft palate. The sound is closer and slightly more advanced than /ɔ/. During the glide the back of the tongue rises still higher, moving in the direction of /u/.

There is a slight closing movement of the lower jaw towards the end of the diphthong. The lips are neutral or slightly rounded at the beginning of the diphthong and have a tendency to become more rounded on the glide.

Variants. - There are a number of variants of this diphthong differing mainly in the nature of their 1st element. The variant described above is of a more conservative type. There is a widespread RP form consisting of a glide following a central vowel /ə/. Advanced RP speech lengthens the central element ([ə:u]) and merely touches very lightly on the [u] element, or, it may even start the glide from a relatively front position without lip-rounding ([eu]). In Cockney, on the other hand, the diphthong has a more extensive glide and the nucleus is either a fronted [ʌ] or [æ].

Comparison. - The Estonian learner is apt to replace the E. diphthong /ou/ with a combination of Est. o (or õ) and u. It should be borne in mind that the nucleus of the E. diphthong is a somewhat closer and more advanced sound than the Est. o. The E. [ə] is more similar to Est. ö than to Est. o or õ. Attention should also be paid to the short and weak glide produced with less lip-rounding than is characteristic of the Est. u.

Cf. E. 'no, sowed, own, cone, fold' and Est. 'nõu, soust - sõudma, õun, koukima, foul (sport)'.

#### Vowel No.15: /ai/

Spelling. - i, y - time, bite, cry, by; igh, eigh - high, light, height; ie, ye - die, lie, dye; ei, ai - either, aisle.

(Note. /ai/ in 'eye, buy'.)

Description. - Both elements of the diphthong /ai/ are

produced with the bulk of the tongue in the front part of the oral cavity. In pronouncing the nucleus the middle of the tongue is rather low in the mouth, lower and somewhat more retracted than for /æ/, but higher and more advanced than for the long open /ɑ:/. The tip of the tongue is slightly pressed against the base of the lower teeth. During the glide the middle of the tongue advances higher, in the direction of /i/, but without reaching it. The glide of /ai/ usually sounds like a weak /e/.

The opening between the jaws is fairly wide for the nucleus and much narrower for the glide. The lips change from a neutral to a loosely spread position.

Variants. - Variants commonly used in the realization of this diphthong differ mainly in the nucleus. In some regional speech a considerably centralized 1st element may be heard, i.e. [ɛ:i]. In those types of pron., e.g. London Cockney, where /ei/ is realized as [æi] or /ai/, vowel No.14 must have a much more retracted 1st element, i.e. /ɑ/ or /ɔ/, hence the pron. of 'I, nice, fine' as [ɔɪ], [nɔis], [fɔin].

Comparison. - The E. /ai/ is similar to the Est. diphthong in 'lai, sai', but differs in the following respects: (1) the nucleus of the E. /ai/ is longer than that of the Est. diphthong; (2) the E. glide is shorter and weaker than the Est. glide; (3) the nucleus of the E. diphthong is a closer and more advanced sound than the Est. short a, (4) taken as a whole, the E. diphthong is somewhat shorter than the corresponding Est. diphthong.

Estonian learners are apt to replace the nucleus of the E. diphthong by an Est. a. Special care should be taken to produce a closer and more advanced nucleus (intermediate between /æ/ and /ɑ/ and to use a short and weak glide.

Cf. E. 'time, lie, pie, my, sigh' with the Est. 'taim, lai, pai, mai, sai'.

Vowel No. 16: /au/

Spelling. - ou, ow - house, sound, cow, town.

(Note: Macleod [mə'klaud].)

Description. - The nucleus of /au/ is very similar to, but somewhat more retracted than that of /ai/. In pronouncing the glide the tongue moves higher and backward, i.e. in the direction of /u/, without actually reaching its position. As a result, the glide of /au/ sounds like a weak and indistinct [o].

During the pron. of the diphthong the opening between the jaws is rather wide for the nucleus and becomes narrow for the glide. The lips change from a neutrally open to a weakly rounded position.

Variants. - In some kinds of RP, usually of an advanced type, the nucleus is a more retracted vowel, sometimes reaching [ɑ]. This pron. seems to be a reaction amongst careful speakers to the [æ] or [ɛ] used as the 1st elements of this diphthong in Cockney and several other popular regional forms of speech.

Comparison. - As in the case of /ai/ Estonian learners tend to substitute an Est. a for the closer and more advanced E. a. The latter is nearer to Est. ä than to Est. a. Care must also be taken to produce a weak and indistinct glide. There should be no protrusion and only very slight rounding of the lips.

Cf. E. 'loud, round, sow (n.), town, owl, cowboy' and Est. 'laud, raund, sau, taunima, aul, kauboi'.

Vowel No. 17: /ɔi/

Spelling. - oi, oy - voice, boil, boy, toy.

(Note: buoy [bɔi].)

Description. - The nucleus of this diphthong is a slightly closer variant of No.6 /ɔ/ being intermediate between it and No.7 /ɔ:/. In pronouncing the glide the tongue moves forward and upward, i.e. in the direction of /i/,

without actually reaching the position for this vowel. The glide sounds like a weak /e/.

The opening between the jaws is wide for the nucleus, becoming narrow for the glide. The lips are slightly rounded in the case of the nucleus and change to neutral for the glide.

Variants. - The variants of this diphthong are less striking than those of the diphthongs so far treated. In some conservative forms of RP, especially in the traditional pron. of the clergy, a considerably centralized and unrounded nucleus is used: [əi]. Among some RP speakers the glide takes the form of a front midopen [ɛ] (see below, p.79).

Comparison. - It is common for Estonians to use an Est. o as the nucleus when they want to produce the E. /ɔi/. Actually, the nucleus of this E. diphthong is intermediate between Est. a and o (for a description and comparison of the E. /ɔ/, see above, p.66). There should be only slight rounding and no protrusion of the lips for the nucleus. Care should likewise be taken to avoid pronouncing a distinct [i] in the glide.

Cf. E. 'boy, coy, toy, Lloyd, annoyed' with Est. 'boi - poi, koi, toim, loid, noid'.

#### Vowel No.18: /iə/

Spelling. - eer, ear, ere - deer, dear, here; eir, ier, ir - weird, fierce, fakir; ea, ia, eu, eo - idea, Isan, museum, theological.

Description. - The nucleus of /iə/ is produced with approximately the same tongue position as for vowel No.2 /i/, i.e. a front-retracted, close, unrounded, short and lax vowel. In pronouncing the glide the tongue moves back and down in the direction of /ə/, the articulation of which may be fully accomplished.

The opening between the jaws is rather narrow for both the nucleus and the glide. The lips are neutral throughout, with a slight movement from spread to open.

The sequence [i] - [ə] may not always constitute the falling diphthong described, i.e. with a prominence on the 1st element. In unaccented syllables the [i] element may be the weaker of the two, being equivalent to [j], cf. the two [i] + [ə] sequences in both syllables of 'period, serious' ['piəriəd] or ['piəriəd] and ['siəriəs] or ['siəriəs]. The glide of the rising type [iə] is often used when the [ə] represents a termination with morpheme status, e.g. 'easier, carrier', in which case [i] and [ə] may be regarded as vowels occurring in two syllables, with a variant monosyllabic pron. [jə].

The choice between a falling or a rising diphthong may depend upon the accentual pattern of the word, cf., e.g. reindeer ['rein,diə] and windier ['windiə].

Although the r, which occurs frequently in the spelling of this diphthong, should not be pronounced finally or before a consonant in RP, it should be remembered that an [r]-link is generally made before a following vowel, either initial in the next word of the group, e.g. 'here and there' ['hiər ən 'ðɛə], or occurring in the following syllable of the same word, cf. hear [hiə] and hearing ['hiəriŋ].

Variants. - In some kinds of advanced and conservative RP, and especially when the diphthong is final, the glide may sound like /ə:/ or /ʌ/ or even /ɑ:/. Thus, 'here, dear', may be realized as [hjə:, djə:] or [hja:, dja:]. The form with /ɑ:/ is usually characterized as an affectation.

Comparison. - The usual mistake of foreigners is to substitute a tense and very close [i] for the short and more open nucleus of the E. /iə/. Estonians should also avoid using a 1st element which is too close or long, i.e. Est. i or ii. Even if the nucleus of the E. diphthong is somewhat tenser and more distinct than an E. /i/ that is used separately, it is nevertheless more lax than the Est. i.

It should be remembered that the substitution of the monophthongs /i/ or /i:/ for the diphthong /iə/ is a phonemic mistake, cf. 'beard-bid-bead, real-rill-reel'.

Cf. E. 'tear (n.), veer, here' and Est. 'tiir, viir, hiir'.

Vowel No.19: /ɛə/

Spelling. - are - care, rare, share; air - air, pair, chair; ear - bear, wear, tear (v.).

(Note: 'heir, there, their, Mary, Sarah, scarce.)

Description. - In pronouncing the nucleus of this diphthong the bulk of the tongue is in the front part of the mouth. The middle part of the tongue is mid-way between the positions for /e/ and /æ/, the nucleus of /ɛə/ being more open and retracted than vowel No.3. The opening between the jaws is fairly wide. The lips are neutral or slightly spread. Thus the nucleus of /ɛə/ may be defined as front, mid-open, unrounded.

In pronouncing the glide the bulk of the tongue moves back to the position for /ə/ (see above, p.71).

The post-vocalic r of the spelling forms is not to be pronounced in RP, except as a linking form when a following word begins with a vowel, e.g. pair of shoes ['pɛər əv ʃu:z], or when a vowel occurs in the following syllable of the same word, e.g. 'care' [kɛə], but 'caring' ['kɛəriŋ].

Variants. - RP /ɛə/ has variants mainly in respect of the degree of openness of its 1st element. The nucleus of the diphthong may vary from a sound practically identical with mid-open short /e/ to an almost fully open /e/. The forms [eə] and, especially, [æə] are recognized as acceptable variants by English phoneticians.

Comparison. - Neither the diphthong /ɛə/ nor its elements occur in Est. and the learner is apt to use an entirely unacceptable ää or äo instead. In producing the E. [ɛə] (1) let the tip of the tongue touch the lower teeth, (2) raise the front part of the blade of the tongue higher in the direction of the hard palate than for /æ/, but lower than for /e/, (3) keep the lips neutral or slightly spread, (4) produce a short and indistinct 2nd element.

A more or less acceptable variant of the E. /ɛə/ may be obtained by pronouncing Est. ää with a weak and indistinct 2nd element.

Cf. E. 'air, care, Mary, tear (v.)' with Est. 'äär, käär, määri, täärama'.

Vowel No.20: /ɔə/

Spelling. - ore, oor, oar, our - sore, floor, more, oar, pour.

Description. - In producing the nucleus of the diphthong /ɔə/ the bulk of the tongue is in the back part of the mouth and almost as low as for the vowel /ɔ:/. The opening between the jaws during the pronunciation of the nucleus is rather wide. The lips are slightly rounded.

In pronouncing the glide the tongue moves forward and upward, in the direction of vowel No.12 /ə/.

The diphthong /ɔə/ is used only in words spelt with ore, oor, oar, our, and is being increasingly replaced by long /ɔ:/, e.g. 'more' [mɔə] and [mɔ:]. This diphthong is retained, however, in conservative RP and in many regional dialects (Scotland, New Zealand, etc.). Because of its absence in some types of present-day E., the diphthong /ɔə/ is sometimes called a non-obligatory or optional diphthong and often omitted from lists of E. phonemes.

Vowel No.21:/uə/

Spelling. - oor - poor, moor; ure - sure, cure, endure; ur - curious, during, security; ewer - sewer; our - tour, gourd.

Description. - The nucleus of this diphthong is the back-advanced, close, slightly rounded, short and lax vowel No.8 /u/. In pronouncing the glide, the tongue moves downward and forward to the position of the vowel No.12 /ə/.

The opening of the jaws which is narrow for the nucleus becomes a little wider for the glide. The lips are weakly rounded at the beginning of the glide, becoming neutrally



spread as the glide progresses.

In the same way as the sequence [i] + [ə] may constitute a rising diphthong, the sequence [u] + [ə] may also, in unstressed syllables, have the prominence on the 2nd element, e.g. 'influence, valuable, vacuum', etc., the 1st element often weakening to [w].

Variants. - Several words with /uə/, which have a pron. [uə] for some RP speakers, are frequently said by others with [ɔə] or even [ɔ:]. Thus, 'Shaw, sure, share' still pronounced by some [ʃɔ:, ʃʊə, ʃɛə], are levelled by many others to [ʃɔ:] for all these words. Cf. also 'you're' (most frequently with [uə], which may also be realized as [jɔ:] , i.e. identical with 'your'), 'pure' as [pjʊə, pjɔə, pjɔ:], etc. It is to be noted, however, that such lowering or monophthongization of /uə/ is rarer in the case of less commonly used monosyllabic words, such as 'moor, tour, dour'.

Comparison. - The Estonian learner should avoid using tense u or long uu instead of the nucleus of the E. /uə/. The glide should be a weak /ə/. Excessive lip rounding should be avoided.

.....

There are numerous combinations in E. of diphthongs with a following [ə] within the word, either as an inseparable part of the word, e.g. 'fire, iron, society, our, tower' ['faɪə, 'aɪən, sə'saiəti, 'aʊə, 'taʊə] or as a suffix (morpheme) appended to the root, e.g. 'greyer, player, slower, higher, employer' ['greɪə, 'pleɪə, 'sləʊə, 'haɪə, ɪm'plɔɪə] or, sometimes, as a separable element internal in a composite form, e.g. 'nowadays' ['naʊədəɪz]. Such combinations of diphthongs + [ə] are sometimes erroneously referred to as triphthongs (see above, p. 59 fn.2).

It should be noted that in rapid colloquial RP there is a marked tendency to omit the 2nd ([i] or [u]) element in such combinations, especially when [ə] is not felt as a separable morpheme. E.g. [aɪə] is levelled to [a:ə] or [a:]

as in 'fire, society'; [auə] > [a:ə] or even [a:], e.g. in 'our, shower, flower'; [eiə] > [e:ə], e.g. in 'player, greyer'; [ɔiə] [ɔ:ə], as in 'employer, enjoyable', etc.

Foreign learners should be aware of this tendency to reduction of vowel sequences, in order that they may understand colloquial E. It should be borne in mind, however, that like most changes in pron., these reductions are still often condemned as vulgarisms. Foreign learners should, therefore, avoid the extreme forms of reduction, e.g. the use of [a:] and [ɑ:] for [aiə] and [auə]. On the other hand, present-day books on E. phonetics (e.g. A. C. Gimson, *An Introduction to the Pronunciation of English*, London 1962, p.135) actually recommend some forms of reduction, e.g. the levelling of [aiə] to [a:ə], [ɔiə] to [ɔ:ə], etc., pointing out that such pronunciations are definitely preferable to sequences containing an exaggerated [i] or [u] element, i.e. [j] or [w], giving [ajə], [əwə], [ɔjə], etc.

#### (5) The Frequency of Occurrence of RP Vowels

Special studies [e.g. D. B. Fry, *The Frequency of Occurrence of Speech Sounds in Southern English*, "Archives Néerlandaises de Phonétique Expérimentale", (1947, pp.103-6) show that /ə/ (10.74%)<sup>1</sup> and /i/ (8.33%) are the most frequent vowels in Colloquial RP. This is to be expected, since /ə/ is the most common vowel in the unaccented syllables which are so numerous in E., and /i/ has a high frequency of occurrence in both accented and unaccented syllables. The following is the order of the remaining RP vowels: - /e/ - 2.97%, /ai/ - 1.83%, /ʌ/ - 1.75%, /ei/ - 1.71%, /i:/ - 1.65%, /ou/ - 1.51%, /æ/ - 1.45%, /ɔ/ - 1.37%, /ɔ:/ - 1.24%, /u:/ - 1.13%, /u/ - 0.86%, /ɑ:/ - 0.79%, /aw/ - 0.61%, /ə:/ - 0.52%, /ɛə/ - 0.34%, /iə/ - 0.21%, /ɔi/ - 0.14%, /uə/ - 0.06%.

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<sup>1</sup> Percentages are given in relation to all vowels and consonants.

## 7. The English Consonants. Their Classification and Description

### (1) Introduction and Classification

An analysis of the phonemic oppositions of RP reveals a total of twenty-four units (see above pp.37-42 and pp.56-7) which are consonantal both in terms of their function (i.e. they tend to be non-central or marginal in the syllable) and also, in the majority of cases, in terms of their phonetic nature (i.e. they have, at least in some of their realizations, articulations involving the obstructions or narrowings which produce acoustically a noise component).

The twenty-four consonantal phonemes of RP are the following: /p, b, t, d, k, g, m, n, ŋ, tʃ, dʒ, f, v, θ, ð, s, z, ʃ, ʒ, l, r, w, j, h/.

These twenty-four consonants are usually classified according to their general articulatory characteristics on the basis of the following principles:

#### I. The manner of the production of noise and the type of obstruction

According to this principle consonants are divided into two general groups: 1. Stops (also called Stop Consonants) in which the air-passage through the mouth is completely blocked, i.e. a complete obstruction is formed - /p, b, t, d, k, g, m, n, ŋ / and 2. Spirants (also known as Spirant Consonants or Constrictive Consonants) in which the air-stream can escape with different degrees of freedom. The spirant consonants are subdivided into fricatives (where the air-passage is greatly narrowed): /f, v, θ, ð, s, z, ʃ, ʒ, h/ and sonants (where there is a very slight friction attended by sound): /w, r, j, l/.

Note. - It is a debatable point whether the so-called affricates (consisting of a plosive stop merged with a fol-

lowing homorganic spirant) should be regarded as single consonants or clusters (i.e. sequences) of two consonants. In the present handbook the E. affricates are regarded as single consonants and are represented in transcription by the symbols /č/ (instead of the traditional /tʃ/ or /tʃ̣/) and /ǰ/ (for the more common /dʒ/ or /dʒ̣/). The affricates are dealt with separately at the end of the chapter on the E. stop consonants (see below, pp. 98-9).

## II. The active organ of speech and the place of obstruction

This basis for classification enables us to distinguish the following groups of consonants:

1. Labial: (1) bilabial consonants articulated by the two lips - /p, b, m, w/; (2) labio-dental - articulated by the lower lip and upper teeth - /f, v/.

2. Lingual: (1) forelingual consonants articulated by the tip and blade of the tongue or only by the blade of the tongue; according to the place of obstruction forelingual consonants are divided into: (a) dental consonants articulated with the tip of the tongue against the upper teeth - /θ, ð /; (b) alveolar consonants produced by the tip of the tongue against the teeth-ridge - /t, d, n, l, s, z/; (c) post-alveolar consonants articulated by the tip and blade of the tongue against the back part of the teeth ridge - /r/;

(2) mediolingual consonants articulated with the middle part of the tongue against the hard palate - /j/; according to the place of obstruction mediolingual consonants are called palatal;

(3) backlingual consonants - articulated by the back of the tongue against the soft palate - /k, g, ŋ /; according to the place of obstruction backlingual consonants are called velar.

3. Glottal (or pharyngeal): glottal consonants are articulated largely in the glottis when the back wall of the pharynx is slightly contracted while the root of the tongue

moves a little towards the back wall of the pharynx; there is only one glottal consonant in RP - /h/.

Note. For a discussion of the glottal stop /ʔ/ and its status, see below, p.110.

### III. The Work of the Vocal Cords

According to this principle consonants are divided into two groups: 1. voiceless consonants and 2. voiced consonants.

1. Voiceless consonants are sounds in the production of which the vocal cords are kept apart and do not vibrate, such as /p, t, k, f, θ, s, š, h, č/.

2. Voiced consonants are sounds in the production of which the vocal cords are brought close together and vibrate, as in the case of /b, d, g, v, z, đ, ž, ě, m, n, ŋ, w, l, r, j/.

### IV. The Position of the Soft Palate

According to this principle consonants are divided into two groups: 1. oral and 2. nasal.

1. Oral consonants are sounds in the production of which the soft palate is raised, and the air passes only through the mouth cavity, as in the case of /p, b, t, d, k, g, f, v, θ, đ, s, z, š, ž, h, č, ě, w, l, r, j/.

2. Nasal consonants are sounds in the production of which the soft palate is lowered, and the air passes out through the nasal cavity, as in the case of /m, n, ŋ/.

The following table classifies the consonants of RP, the voiceless articulation, in the case of pairs, being placed on the left:

Manner of Production \ Articulating Organ		Labial		Forelingual		Medio-lingual	Back-lingual	Glottal
		bilabial	labio-dental	dental	alveolar	post-alveolar		
S T O P	Plosive	p, b			t, d		k, g	
	Nasal	m			n		ŋ	
	Affricate				tʃ, dʒ			
S P I R A N T S	Fricatives				s, z			
		rounded narrow passage						
		flat passage	f, v	θ, ð	ʃ, ʒ			h
S P I R A N T S	Sonants	medial	w			r	j	
		lateral			l			

Fig.21. - Phonetic table of the RP consonants

(2) Detailed Description of the English Consonants

I. The Stop Consonants

The RP stop (or occlusive) consonants are consonants in which the air-passage through the mouth is completely blocked. There are eleven stops in RP (/p, b, t, d, k, g, m, n, ŋ, tʃ, dʒ/) and they may be divided into 1. plosives, 2. nasals, and 3. affricates.

## A. Plosive Stops

In the articulation of the six plosive stops /p, b, t, d, k, g/ a total obstruction or closure of the air-passage is made within the mouth.

It is possible to distinguish three stages in the complete articulation of the plosive stops: (1) the closing stage, during which the articulatory organs move together in order to form an obstruction; (2) the compression stage, during which lung action compresses the air behind the closure (this stage may or may not be accompanied by voice, i.e. vibration of the vocal cords); (3) the release or explosion stage, during which the organs forming the obstruction part rapidly, allowing the compressed air to escape abruptly with a kind of (ex)pllosion known as aspiration.

The plosive consonants may be subdivided into (a) bilabial plosives, (b) alveolar plosives and (c) backlingual (or velar) plosives.

(a) The Bilabial Plosives /p, b/.

Examples. - pin, pain, play; spin, cheap; big, begin, blow, labour, rib.

Description.- In the production of the B. consonants /p/ and /b/ the soft palate is raised. The lips are slightly spread and pressed together, thus forming a closure. Lung air is compressed behind this closure, during which stage the vocal cords are held wide apart for /p/, but may vibrate for all or part of the compression stage for /b/ depending on its situation in the utterance. The air escapes with force when the lip closure is released, i.e. there is aspiration. The amount of aspiration varies according to the position of the consonant in the utterance (see below, p. 92 f.).

The phonemes /p, b/ may be defined as bilabial plosive stop consonants.

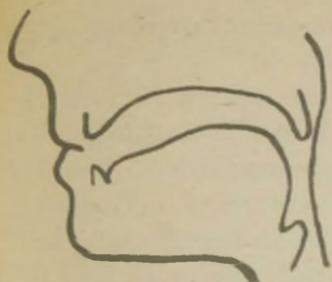


Fig.22 - Articulation of  
/p, b/.

leader, road.

Description. - In the production of the E. consonants /t/ and /d/ the soft palate is raised. The primary obstacle to the air-stream is produced by a closure made between the tip of the tongue and the teeth-ridge. The air from the lungs is compressed behind this closure, and when the tip of the tongue is quickly removed from the teeth-ridge, the air escapes with a kind of explosion.

The vocal cords are wide apart for /t/, but are drawn close together and vibrate for all or part of the compression stage for /d/ according to its situation in the utterance.

The force of exhalation is stronger in the production of the voiceless consonant /t/ than in /d/. The amount of aspiration in /t/ depends on the position of the consonant in the utterance (see below, p. 92).

The lip position for /t/ and /d/ is conditioned by that of the adjacent sounds, especially that of a following vowel or semivowel, e.g. spread lips for /t/ in 'teeth', anticipatory lip rounding for /t/ in 'tooth, twice'.

The position of the stop closure depends on the influence of the place of articulation of a following consonant. Thus, followed by /r/ as in 'try, dry', the contact will be post-alveolar; when followed by /θ, ð/ as in 'eighth',

Comparison. - In the pron. of the corresponding Est. consonant /p/ there is no aspiration. As the Est. /b/ is actually an unvoiced weak consonant, the Est. learners must take special care to voice the E. /b/ (see below, p. 93f).

(b) The Alveolar Plosives /t,d/

Examples. - take, tall, stone, butter, boat; do, dog,



not that, it is dental [t, d].

The plosives /t, d/ may be defined as forelingual apical alveolar plosive stop consonants.

In RP there are many cases where an earlier /t/ or /d/ is omitted, e.g. in 'castle, thistle, hasten, Wednesday, handsome', etc. There are numerous other instances where /t/ or /d/ is dropped in rapid colloquial, though usually retained in careful pronunciation, e.g. 'next Christmas, postman, mustn't, kindness, grandmother'. Note the pron. of 'and' when unstressed as in 'bread and butter' ['brednbatə].

Comparison. - It should be borne in mind that the E. /t, d/ have, generally speaking, a more retracted articulation than that of the corresponding Est. consonants (see Figs.23-24 ). In Estonian the short /d/, e.g. in 'koda, vend', has a post-alveolar articulation very similar to that of the E. /d/; the Est. t, however, e.g. in 'kota, tema', is post-dental, and the Est. overlong tt, e.g. in 'kotta, vett', is post-dental or even interdental (cf. Eesti keele grammatika I, Häälikuõpetus ja ortograafia 1. vihik, Tartu 1963, pp. 46-47).

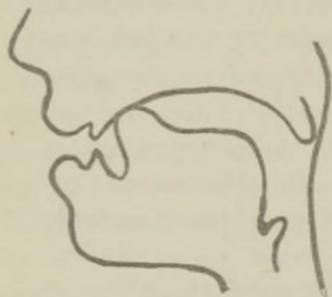


Fig.23. - Apical tongue-position and post-alveolar closure of the E. /t, d/.

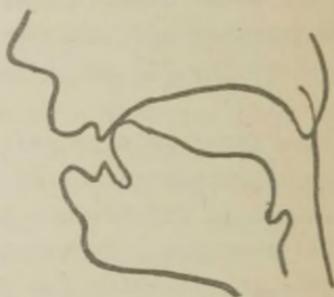


Fig.24. - Predorsal-apical tongue-position and post-dental (or alveolar) closure of the Est. t, d.

Thus, it can be said that the longer the Estonian t or d, the more advanced is its articulation.

The E. /t/ is produced in a position practically identical with (or slightly more retracted than) that for the Est. d, cf. e.g., the initial sound in the Est. word '(vedu-ri) tender' with the corresponding more retracted sound in the E. 'tender'.

Care should be taken to voice the E. /d/ (see below, pp. 93-94).

(c) The Backlingual (or Velar) Plosives /k, g/

Examples. - come, kin, skin; go, girl, cage, big.

Description. - In the production of the E. consonants /k/ and /g/ the soft palate is raised. The primary obstacle to the air-stream is formed by a closure made between the back of the tongue and the soft palate (see Fig. 24). Lung air is compressed behind this closure and when the back part of the tongue is quickly removed from the soft palate, the air escapes with a kind of explosion.

The vocal cords are kept apart for /k/, but are drawn close together and vibrate for all or part of the compression stage for /g/ according to its situation in the utterance.

The force of exhalation is stronger in the production of the voiceless consonant /k/ than in /g/.

The lip position for /k/ and /g/ is conditioned by that of the adjacent sounds, especially following vowels or semi-vowels, e.g. spread lips for the plosives in 'keen, geese', and somewhat rounded lips for the plosives in 'cool, goose, quick'.

The phonemes /k, g/ may be defined as backlingual (or velar) plosive stop consonants.

The velar stop contact is particularly sensitive to the nature of an adjacent vowel (especially a following vowel). Thus, when a front vowel follows, e.g. /i:/ in 'key, geese', the contact will be made on the most forward part

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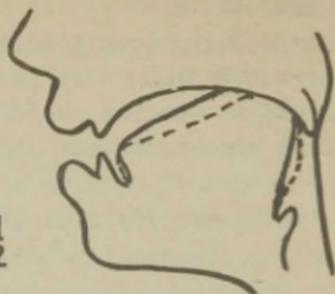


Fig.25. - Relative tongue-positions of the English /k, g/ - 1 and Est. k, g - 2.

of the soft palate and may even overlap on to the hard palate; when a back vowel follows, e.g. /ɔ/ in 'cot, gone', the contact on the soft palate will be correspondingly retracted; a contact in the central region of the soft palate is made when a vowel of a central type follows, e.g. /ʌ/ or /ə:/ as in 'come, gun, curl, girl'.

Comparison. - The Estonian learner should note that the back of the tongue is raised considerably higher against the velum for the E./k, g/ than for the corresponding Est. consonants. The result is the greater tenseness and characteristic aspiration of the E. consonants, cf. E. 'cat, cake' and Est. 'kätt, keeks'.

Particular care should be taken to voice the E. /g/ (see below, pp. 93-94).

Aspiration of Voiceless Plosive Consonants in English

The E. voiceless plosive consonants /p, t, k/ are pronounced with aspiration before a stressed vowel.

In Estonian the voiceless plosives p, t, k are pronounced less energetically and without any aspiration.

It should be borne in mind that aspiration does not exist in Russian either, whereas the corresponding German consonants are strongly aspirated.

Cf. English	Estonian	Russian	German
park	park	парк	Park
tank	tank	танк	Tank

In E. the degree of aspiration may vary perceptibly.

1. Aspiration is the strongest when /p, t, k/ are followed either by a long vowel or by a diphthong, e.g. 'peat, tool; pear, tear, care'.
2. Aspiration is weaker when /p, t, k/ are followed by a short vowel, e.g. 'pit, tin, kit'.
3. There is hardly any aspiration when /p, t, k/ stand after /s/ or before an unstressed vowel, e.g. 'spin, star, skate; happy, chapter, broken'.

It is thus possible to distinguish three degrees of aspiration in the pronunciation of the E. consonants /p, t, k/ as in the following groups of words:

Strong aspiration	Weak aspiration	Very weak or no aspiration
peat, pear	pit	carpet, speak
teeth, tear	tin	marten, stem
keel, care	kit	blanket, skill

Foreign learners should pay particular attention to the aspiration of /p, t, k/ when these phonemes occur initially in a stressed syllable. If a word such as 'pin' is pronounced [pin] instead of [p<sup>h</sup>in], there is the danger that the E. listener may understand 'bin'. On the other hand the foreign learner is apt to make the (admittedly less serious) mistake of aspirating these consonants equally strongly in all other positions. In order to avoid this superfluous aspiration it is necessary to pronounce the E. voiceless plosives in the same way in which the corresponding Est. sounds are pronounced.

#### Sonority of the English Voiced Plosive Stops

The E. phonemes /b, d, g/ are voiced, sonorous consonants, whereas the corresponding Est. consonants are as a rule semi-voiced or actually voiceless. The lack of sonority of the semi-voiced Est. b, d, g is well illustrated by the Standard Est. pron. of such foreign words as 'briga-

dir, draama, garaaž' (in Est. phonetic transcription: priGaDir, trāma, karāž).

The Est. learner has special trouble with E. voiced plosives occurring in a word-final position and before voiceless consonants. This is because voiced plosives do not occur in such positions in Estonian, e.g. the words 'toob' and 'toop' are both pronounced with a voiceless final consonant (strong or fortis in 'toop', weak or lenis in 'toob'), cf. also 'absurdne' (=apsurdne), 'ta toob piima' (= ta tōp pīma). In E., however, the distinction between voiced and voiceless plosive stops has a phonemic value and must be carefully observed, e.g. 'cab - cap, robe - rope; sad - sat, wide - white, bend - bent; peg - peck, bag - back, dug - duck'. Note also the lack of assimilation before a voiceless consonant in such cases as 'absurd' [əbʊsə:d], 'anecdote' [ænikdout], 'medicine' [medsin], 'black ball' [blæk' bɔ:l] (cf. below, p. 134).

It should be pointed out that sonorous variants of the usually semi-voiced or voiceless standard Est. b, d, g may result from assimilation in certain voiced environments. Thus, e.g. the b, d, g in the Est. words 'õmblema, kuldne, arglik' are very similar to the corresponding E. sounds as regards their sonority.

### B. N a s a l S t o p s

The three nasal consonants /m, n, ŋ/ resemble the plosive stops in that a total closure is made within the mouth. They differ from the plosives in that the soft palate is in its lowered position, allowing an escape of air into the nasal cavity and thus giving the sound the special resonance provided by the naso-pharyngeal cavity. Owing to this resonance and the fact that they are usually voiced, /m, n, ŋ/ are sometimes called sonant stops or nasal sonorants. The nasal stops resemble vowel-type sounds in that they may perform a syllabic function. This is true especially of /n/, e.g. 'button' [bʌtŋ], 'sudden' [sʌdn], 'open'

[ʊəp̄n̄]; less commonly /m/, e.g. 'rhythm' [rið̄m̄].

(a) The Bilabial Nasal /m/

Examples. - (regularly spelt with m, mm; sometimes mb, mn) meat, move; smock, smear; among, empty, gloomy, summer; seem, warm, lamb, climb, comb, solemn, column.

Description. - In the production of the E. consonant /m/ the soft palate is lowered. The lips are slightly spread, tense and pressed together, forming a complete obstruction to the air-stream through the oral cavity. The air passes through the nose. The vocal cords are drawn near together and vibrate.

The phoneme /m/ may be defined as a bilabial nasal sonant consonant.

Comparison. - The E. phoneme /m/ presents no difficulty to the Estonian learner. In the pronunciation of the corresponding Est. sound the lips are somewhat less spread and less tense.

As there are no double or geminate consonant sounds in E., care should be taken to avoid the use of geminates in the pronunciation of words spelt with a double m, e.g. 'summer' [ˈsʌmə], 'glimmer' [ˈɡlɪmə]; cf. below, p. 128.

(b) The Alveolar Nasal /n/

Examples. - (regularly spelt with n, nn; or kn, gn, pn) now, know, net, gnat, pneumonia; sneeze, snow; many, dinner, answer; mean, gone, down, sign.

Description. - The soft palate is lowered and the tip of the tongue touches the alveoli (apical articulation), forming a complete obstruction to the flow of air through the oral cavity. The air passes out through the nose. The vocal cords are drawn near together and vibrate.

Thus the phoneme /n/ may be defined as a forelingual-apical alveolar nasal sonant consonant.

Comparison. - The E. /n/ has a somewhat more retracted (alveolar) articulation than the corresponding Est. consonant,

which tends (especially in its longer degrees of length) to be post-dental. It should also be borne in mind that the E. /n/ has an apical articulation, whereas that of the Est. n is predorsal-apical, i.e. slightly more of the blade of the tongue is pressed against the post-dental-alveolar region in forming the obstruction for the Est. consonant.

Cf. E. 'name, nor' with Est. 'nimi, noor'.

Special care should be taken to avoid the gemination (i.e. doubling in pronunciation) and the palatalization of /n/, cf. e.g., E. 'penny, honey' and Est. 'penn, penni; peni, hani'. See also below, p. 128.

(c) The Velar Nasal /ŋ/

Examples. - (regularly spelt ng or n followed by a letter indicating a velar consonant; occurs usually after the short vowels /i, æ, ɔ, ʌ/; rarely after /e/ ) singer, long-ing; finger, anger; uncle, anxious; sing, among, strength.

Description. - A closure is formed in the mouth between the back of the tongue and the velum as for /k, g/. The soft palate is lowered. The vocal cords are drawn together and vibrate.

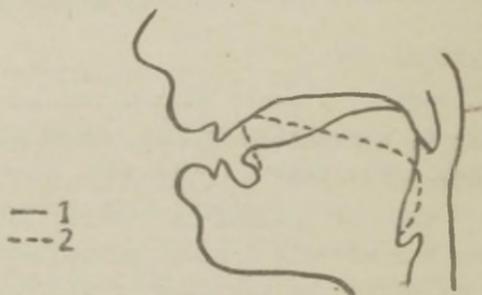


Fig. 26. - Tongue-positions of the E.  
/ŋ/ - 1 and /n/ - 2.

The phoneme /ŋ/ may be defined as a backlingual velar nasal sonant consonant.

Comparison. - The velar nasal /ŋ/ has a counterpart in the Est. ɲ. The latter, however, occurs only before a following g or k (e.g. 'vang, rong, rōngas, vanker'), whereas the E. /ŋ/ may also occur without a following plosive stop (e.g. 'finger' [ˈfɪŋgə], 'thinking' [ˈθɪŋkɪŋ], but 'wrong' [rɒŋ], 'bang' [bæŋ], 'ring' [rɪŋ], 'ringing' [rɪŋɪŋ], 'twang' [twæŋ]). Consequently, care should be taken to avoid using /ŋ/ + /g/ (or more rarely /k/) in those cases where RP has only /ŋ/, e.g. in 'singing, reading out, a long essay'.

Note. - In many regional types of speech, e.g. in the Midlands and north of England, earlier /ŋg/ forms are retained instead of RP /ŋ/, e.g. 'singing' [ˈsɪŋŋɪŋ] for RP [ˈsɪŋɪŋ].

In practising, the nasal /ŋ/ should be given exaggerated length and combinations such as /ŋiː, ŋaː/ should be repeated in order to obtain a succession of nasal + vowel without a plosive.

Cf. /ŋ/ - /n/ - sing - sin; rang - ran; gong - gone.

/ŋ/ - /ŋk/ - thing - think; rang - rank, sung - sunk; singing - sinking.

A good dictionary should be consulted whenever there is any doubt as to whether a word is pronounced with /ŋ/, /ŋg/ or /ŋk/. The following elementary rules may be of some help in deciding which pronunciation is to be expected.

(a) In words formed from verbs by means of the ending -er or -ing, the -ng is pronounced /ŋ/, e.g. 'hanger' [ˈhæŋgə], 'hanging' [ˈhæŋɪŋ], 'singer' [ˈsɪŋgə], 'singing' [ˈsɪŋɪŋ], 'clinging' [ˈklɪŋɪŋ], 'longing' [ˈlɒŋɪŋ].

(b) In adjectives and other words ending in -er not derived from verbs, -ng has the value of [-ŋg], e.g. 'stronger' [ˈstrɒŋgə], 'longer' [ˈlɒŋgə], 'finger' [ˈfɪŋgə], English [ˈɪŋɡlɪʃ].



(c) The letter n in the prefix 'con-' is generally pronounced [ŋ] if the prefix is stressed (i.e. carries either the main or secondary stress) and is followed by k or g : 'congress' ['kɒŋɡres], 'conquer' ['kɒŋkə]; cf., however, 'conclude' [kən'klu:d] (the stress falls on the second syllable!), 'concrete' (with two pronunciations ['kɒŋkri:t, 'kɒŋ-]).

### C. A f f r i c a t e s

The two so-called affricates /č, ʃ/ consist of a plosive stop /t, d/ merged with a following homorganic spirant /š, ž/. In the present handbook the symbol /č/ is used for the traditional /tš/ and /ʃ/ for /dž/.

It should be borne in mind that the nature of the so-called affricates is debatable. They may be regarded either as single phonemic entities or as sequences of two phonemes. In the discussion below /č/ and /ʃ/ are considered as complex phonetic, but single phonemic entities (cf. above, p.84, Note).

In books on E. phonetics one may find that [tr, dr] and even [ts, dz, tθ, tʃ] are sometimes dealt with as units on account of the close phonetic relationship of the elements (see e.g., A. C. Gimson, *An Introduction to the Pronunciation of English*, London 1962, pp. 166-172). In view of a number of considerations (less restricted possibility of commutation within the same syllable, etc.), it would appear more reasonable to regard [tr, dr], etc., as consisting of separable elements.

#### The Affricates /č, ʃ/ (see Note on p. 84)

Examples. - /č/ - (spelt ch, tch, t + ure, eous, and t + ion when t is preceded by s): chain, watch, nature, righteous, question.

/ʃ/ - (spelt j, g, dg, sometimes gg, dj, de, di, ch): jam, gem, midget, suggest, adjacent, grandeur, soldier, Greenwich.

Compare: /č/, /ǰ/: chin-gin; chest-jest; choke-joke; nature-major; riches-ridges; larch-large.

Description. - The soft palate is raised, thus shutting off the nasal cavity. The tip, blade and sides of the tongue are raised to touch the upper alveolar ridge and side teeth. When contact is made, the air-passage through the oral cavity is completely blocked for a short time. The air is compressed by pressure from the lungs. The moment the middle part of the tongue is raised in the direction of the hard palate, the top of the tongue is slowly removed from the upper alveolar ridge, forming a flat narrowing through which the air passes with friction.

/č/ and /ǰ/ may be defined as forelingual apical palato-alveolar affricates.

In the production of /č/ the vocal cords are kept apart and do not vibrate, whereas in the case of /ǰ/ they are drawn near together and vibrate. Hence /č/ is voiceless, /ǰ/ - voiced.

Comparison. - Although /č/ and /ǰ/ are not native sounds in Estonian, they occur in numerous loan-words and generally familiar names (e.g. 'tšello, tšehhid, Tšapajev, Kotšubei, džungel, pidžaama, bridž'). Hence they do not present any special difficulty to the Estonian learner of E. Care should be taken, however, to avoid producing too advanced a sound (see above, p. 90, for a discussion of the articulative position of E. /t, d/).

## II. The Spirant Consonants

The RP spirant (or constrictive) consonants are consonants in the articulation of which the air-passage is not blocked completely, but is narrowed or constricted, i.e. the air-stream can escape with different degrees of freedom. There are thirteen spirants in RP ( /f, v, θ, ð, s, z, š, ž, h, w, r, j, l/) and they can be divided into 1. fricatives, (i.e. spirants articulated with a greatly narrowed

air-passage and resulting strong friction) and 2. sonants (i.e. spirants produced with very slight friction attended by sound).

#### A. The Fricative Spirants

The fricative spirants are articulated with a greatly narrowed air-passage and with resulting strong friction. The nine RP fricatives comprise 4 pairs of voiced and voiceless consonants (/f, v; θ, ð; s, z; ʃ, ʒ/) and a voiceless glottal fricative /h/.

The phonemes /v, ð, z, ʒ/ tend to be fully voiced only when they occur between voiced sounds, e.g. in 'cover, other, easy, leisure'; 'a van, all that, by the zoo'. In initial and especially in final positions these consonants may be only partially voiced or even voiceless, e.g. in 'van, that, zoo; leave, breathe, peas, rouge'. In such cases /v, ð, z, ʒ/ differ from /f, θ, s, ʃ/ in that they are pronounced with less muscular energy and stronger breath force, i.e. /v, ð, z, ʒ/ are lenis consonants in comparison with the fortis consonants /f, θ, s, ʃ/.

According to their place of articulation these RP fricatives are labio-dental - /f, v/; dental - /θ, ð/; alveolar - /s, z/; palato-alveolar /ʃ, ʒ/; glottal - /h/.

##### (a) The Labio-dental Fricatives /f, v/

Examples. - /f/ (spelt f, ff, ph, gh): feet, father, physics; defend, affair, tougher; leaf, stuff, strife, cough.

/v/ (spelt v, f, ph): veal, voice; ever, nephew ([nevju:] also [nefju:], esp. in AE); canvas; leave, of, move.

Compare /f/, /v/: fine - vine; few - view; surface - service; proof - proove; leaf - leave; safe - saves.

Description. - In the articulation of the phonemes /f, v/ the soft palate is raised and the nasal resonator is shut off. The lower lip makes a light contact with the inner edge of the upper teeth, forming a flat narrowing. The escaping air passes through this narrowing with friction. The

actual point of contact will vary somewhat according to the adjacent sound, e.g. in the case of a back strongly rounded vowel or of a bilabial plosive ('fool, roof, obvious'), the contact on the lower lip tends to be more retracted than in the case of a front spread vowel ('leaf, feel').

For /f/, the friction is voiceless, whereas there may be some vocal cord vibration accompanying /v/, according to its position (see above, p.100).

The phonemes /f, v/ may be defined as labio-dental fricative spirant consonants.

Variants. - No important articulatory variants for /f, v/ occur among RP speakers. Word final /v/, however, assimilates easily to /f/ before a fortis consonant initial in the following word, e.g. 'have to, love to, move forward'. In familiar RP speech /v/ may be elided in the case of the unaccented form of 'of, have', e.g. in 'a lot of money; I would have bought it' [ə 'lɒt ə 'mʌni; ai wəd ə 'bɔ:t it].

It should be noted that in the dialects of south-western England the fortis /f/ is often replaced by a weaker articulation approaching that of /v/ (e.g. 'vat, vixen' go back to western dialect forms which retain the OE initial and intervocalic voiced sounds; cf. OE 'fæst, fyxen' where the initial sound is assumed by most scholars to have been voiced; cf., however, the voiceless initial sound in German 'Faß, Füchsin').

Comparison. - The consonants /f, v/ do not present any special difficulty for the Estonian learner as the corresponding Est. consonants are articulated in very much the same manner. It should be noted, however, that the E. /f, v/ are more energetic, especially before /e/ and /i/, than are the Est. f and v. Cf. E. 'coffee, film, effect; very, vain, village' with the Est. 'kohvi, film, efekt; veri, vein, vilis'. Care should be taken to avoid replacing E. /v/ by /w/ and to distinguish such pairs as 'vain - wane, verse - worse, vest - west', etc. by using strong friction between the lower lip and upper teeth for /v/.

(b) The Dental Fricatives /θ, ð/

Examples. - /θ/ (spelt always th): thick, think; method, author; smith, earth.

/ð/ (spelt always th): this, the; breathing, father; with, clothe.

Compare /θ/, /ð/ - thigh - thy; earthy - worthy; bath - bathe, mouth (n) - mouth (v).

/θ/, /s/ - thick - sick; thumb - sum; mouth - mouse; worth - worse.

/θ/, /t/ - thought - taught; three - tree; both - boat; fourth - fort.

/ð/, /z/ - breathe - breeze; clothe - close; lathe - laze.

/ð/, /d/ - there - dare; then - den; other - udder; worthy - wordy.

Description. - In producing the E. phonemes /θ, ð/ the soft palate is raised and the nasal resonator shut off. The tip of the tongue (the apex) makes a light contact with the edge and inner surface of the upper front teeth and the rims make a firmer contact with the upper side teeth, so that the air escaping through the flat opening between the forward surface of the tongue and the front teeth causes friction (Fig.27). With some speakers the tongue-tip may protrude through the teeth (Fig. 28).

In either case the main part of the tongue is fairly flat and relaxed.

The phonemes /θ, ð/ may consequently be defined as forelingual apical (inter-) dental fricative consonants:

The phoneme /θ/ is voiceless, the phoneme /ð/ voiced.

Variants. - Leaving aside the slight difference in the articulatory positions of the apical and interdental /θ, ð/ there are no important RP variants of these consonants. Since /θ, ð/ offer difficulties of articulation when followed by /s, z/, they are sometimes elided, e.g. 'clothes' [klouz], 'months' [mʌns], or [mʌnts]. In sequences where

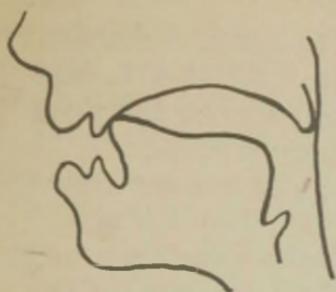


Fig.27. - Tongue-position  
of post-dental /θ, ð/.

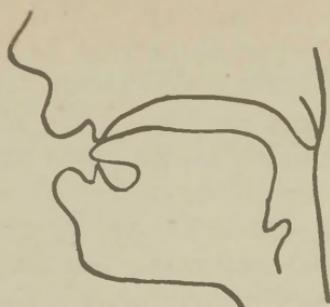


Fig.28. - Tongue-position  
of inter-dental /θ, ð/.

/s, z/ are followed by unaccented /d/ as in 'Is there any?', 'What's the time?', the preceding alveolar articulation may influence the dental fricative in rapid speech - ['iz zər 'eni, 'wɒts ze 'taɪn]. In Cockney (and often in the speech of young children learning to speak E.) the difficulties of the dental articulation may lead to the replacement of /θ, ð/ by labio-dental fricatives, e.g. 'mother, breathe in' [ˈmʌvə, 'brɪ:v 'ɪn], 'throw it, Smith' [ˈfraʊ ɪt, smɪθ].

Comparison and Advice. - In Estonian there are no phonemes similar to the E. /θ, ð/. On the whole, these consonants are rare outside the E. lg. The voiceless /θ/ does occur, however, in e.g. Greek (θ = theta), Spanish (spelt c or z, e.g. ¡Gracias, Ibañez!), Lapp, Mari, etc. In some Finnish dialects both /θ/ and /ð/ may be met with, e.g. 'meθθä' - 'forest, Est. mets', 'käðet' - 'hands, Est. käed' cf. P. Ariste, *Eesti keele foneetika*, Tallinn 1953, p. 42).

The consonants /θ, ð/ are reputed to be the most difficult consonants in E. Actually the difficulty of /θ, ð/ lies not so much in their articulation, which most learners can perform correctly in isolation (the interdental variant, see Fig. 28, is usually recommended for teaching purposes), as in their combination with other consonants, especially /s/ and /z/. There is also a danger that in connected speech

the learner will substitute /s/ and /z/, or even /f/ and /v/ for /θ/ and /ð/.

In order to prevent or correct the substitution of /s/ for /θ/ and of /z/ for /ð/ care must be taken to keep the edge of the tip of the tongue right between the teeth and not to allow the blade of the tongue to rise.

To avoid replacing /θ/ and /ð/ by /f/ and /v/ care should be taken not to let the lower lip touch the upper teeth. Schoolchildren may be told to bare their teeth as if they were going to brush them. It is even recommended to keep the lower lip down with the help of a finger or pencil. Learners should, therefore, practice with drills containing tongue-twisting combinations such as /s + θ/, /θ + s/, /θ + s + ð/, /z + θ/, /s + ð/, /z + ð/, /ð + z + ð/, etc.:

this thing; the sixth street; his thumb; pass the salt; is this it? Smith's there; soothes them; the hyacinths and chrysanthemums; fifty-six sick thistles were sifted by seven thirsty thistle-sifters.

Cf. also the word-pairs given above at the end of the section "Examples" on p.102.

Note 1. - As the consonants /θ, ð/ are always spelt th, it is difficult for the learner to know whether the combination of letters denotes a voiced or voiceless consonant. Generally speaking, th usually represents the voiceless /θ/ in nouns, adjectives, numerals and verbs (e.g. 'thing, mouth, thick, three, throw') and the voiced /ð/ in the definite article, in pronouns, adverbs, conjunctions and prepositions (e.g. 'the, this, then, though'). As there are numerous exceptions from this general rule it is always advisable to look up the pronunciation of a doubtful case in the dictionary.

Note 2. - The pronunciation of the plurals of words ending in -th often presents difficulties for the learner. Such plurals have the pronunciation /θs/ in the following cases: (1) If preceded by a short vowel, e.g. smiths [smiθs], breaths [breθs], moths [mɔθs]; (2) if a consonant precedes

e.g. lengths [leŋθs], healths [helθs], months [mʌnθs]; (3) if the letter r precedes in the spelling, e.g. births [bɜ:θs], hearths [hɑ:θs] (cf. baths [bɑ:ðz]); (4) in the exceptional cases 'heaths [hi:θs], faiths [feiθs], growths [grəuθs], laths [lɑ:θs], sloths [slouθs]'. In most other cases [-ðz] is used, e.g. paths [pɑ:ðz], mouths [mauðz], youths [ju:ðz], (cf. the singular [pɑ:θ, mauθ, ju:θ]).

In the words 'wreaths, sheaths, broths' the pron. varies. D. Jones prefers the forms with [-ðz].

There appears to be a growing tendency to use the [-θs]-plurals in some words formerly pronounced with [-ðz], e.g. 'truths, baths, youths, oaths', etc.

### (c) The Alveolar Fricatives /s, z/

Examples. - /s/ (spelt s, ss, c, sc, x = /ks/): sat, scon, sign, cease, pieces, losses, escape, famous, ice, scarce, box.

/z/ (spelt z, ss, z, zz, x (= /gz/)): zoo, zero, easy, possess, lazy, thousand, dizzy, says, gaze, exact.

Description. - In the pronunciation of /s, z/ the soft palate is raised and the nasal resonator is shut off. The tip and blade of the tongue make a light contact with the upper teeth-ridge. The side rims of the tongue are in close contact with the upper side teeth, forming a short and narrow groove-like channel in the centre of the tongue. The air-stream escapes by means of this channel and causes friction between the tongue and the teeth-ridge. There is very little opening between the teeth.

The phoneme /s/ is voiceless, the phoneme /z/ voiced.

The phonemes /s, z/ may be defined as forelingual apical alveolar fricative consonants.

Variants. - With some speakers the tongue-tip is in contact with the lower teeth, so that the friction is produced between the blade of the tongue and the teeth-ridge. The lip position depends upon the adjacent vowel, e.g. spread for 'see, zeal, piece, bees', etc., and somewhat rounded for



'soon, zoo, loose, lose'. In the western English dialects initial /s/(before a vowel) is often replaced by a weaker articulation approaching that of /z/.

Comparison. - In Est. s, z are articulated nearer to the teeth than are the corresponding E. consonants. Such a dentalized articulation is to be avoided in E. because of the danger of confusion with /θ, ð/. The more retracted alveolar articulation for E. /s, z/ should be practised in opposition with /θ, ð/ in such pairs as: sing - thing; sort - thought; close (v.) - clothe; mouse - mouth; use (n.) - youth.

In order to make the E. /s, z/ really alveolar it is necessary to practice pronouncing such words in which /s/ or /z/ come immediately after another alveolar consonant or between two other alveolar consonants whose articulation has already been mastered, e.g. [tens] tense, [tenz] tens; [els] else, [telz] tells; [lesn] lesoon, [snou] snow; [test] test, [pli:zd] pleased.

In pronouncing the consonants /s,z/ before or after /θ, ð/, learners must take care not to substitute the latter for the former, e.g. in such cases as [klɔθs] cloths, [wið 'smiθ] with Smith, ['ðis 'θin 'buk] this thin book, ['ðouz 'θik 'wɔ:lz] those thick walls, [its ðə 'seɪm] it's the same, ['hu:z ðɛə] who's there?

The E. /s/ is slightly more energetic and sharper than the Est. s. The E. /z/ is a voiced consonant that differs from the semi-voiced and less energetically articulated Est. z. A fully voiced z occurs in Estonian only in some loan-words and names of foreign origin, e.g. 'zooloogia, zlott, Zoja', etc. Care should be taken to keep /s/ and /z/ distinct: seal - zeal; sink - zinc; fussy - fuzzy; racer - razor; loose - lose; use (n.) - use (v.); place - plays; ice - eyes; pence - pens; false - falls.

Note. - The pronunciation of the letter 's' in the body of E. words is very inconsistent and a source of difficulty for the learner. No reliable rule can be given and one is

advised to consult a dictionary in all doubtful cases. Attention should be drawn to the pronunciation of dis- as [dis-] in the majority of cases, e.g. [disə'pɔɪnt] disappoint, [disə'piə] disappear, [disɪn'herɪt] disinherit, etc.; cf., however, [dɪzə'stə] disaster, [dɪzə:n, dɪsə:n] discern, [dɪzi:z] disease, [dɪzɔlv] dissolve, [dɪzml] dismal, but [dɪsəlu:ʃn] dissolution. Cf. also 'to resent' [rɪzənt], but 'the letter was re-sent' [rɪ:sent] the following day'; 'to resign' [rɪzain] from office', but 'to re-sign' [rɪ:sain] a letter'.

(d) The Palato-alveolar Fricatives /ʃ, ʒ/

Examples. - /ʃ/ (spelt sh, ch, sch, s or ss before u, -ti-, -si-, -sci-, -ci-, ce-; note: x = /kʃ/ in 'luxury'): shoe, charade, schedule, sugar; Asia, ashore, mission, luscious, machine; dish, douche, finish.

/ʒ/ (spelt -si-, s, z, before u and, in French loan-words, final -ge): vision, pleasure, leisure, seizure, prestige, rouge.

Compare /ʃ/, /ʒ/: sheep - cheap, shore - chore, shoes - choose, dish - ditch, wash - watch.

/ʒ/, /ʃ/: leisure - ledger; vision - pigeon.

Description: - In the articulation of /ʃ, ʒ/ the soft palate is raised and the nasal resonator shut off. The tip and blade of the tongue make a slight contact with the upper teeth-ridge, the front of the tongue being raised at the same time in the direction of the hard palate and the side rims of the tongue being in contact with the upper side teeth. A flat narrowing is formed between an extensive area of the tongue and the roof of the mouth. The air passes through the narrowing with friction. As the middle part of the tongue is raised there is slight palatalization. The lips are usually somewhat rounded and slightly protruded. The articulation is laxer than that of /s, z/.

The phoneme /ʃ/ is voiceless, the phoneme /ʒ/ is voiced.

The phonemes /ʃ, ʒ/ may be defined as forelingual apical palato-alveolar fricative spirant consonants.

Variants. - Apart from the slight differences in the degree of palatalization and lip-rounding, no important articulatory variants of /š, ž/ occur. Medially in certain words some RP speakers use /s+j/ or /z+j/ instead of /š, ž/, e.g. in 'issue, seizure, casual, ratio, appreciate, associate', etc. Note also the possible alternation between /š/ and /ʒ/, e.g. in 'Asia, transition, version'. In word final position, where /ž/ occurs only in comparatively recent French loan-words, e.g. 'rouge, prestige, beige, garage', etc., a variant with /ʒ/ is always possible and is felt to be the fully anglicized form.

Comparison. - In present-day literary Estonian the consonants š and ž occur in international and loan-words, such as 'šanss, šikk, dušš; žargoon, žürii, süžee, staaž'. The articulation of the Estonian palato-alveolar fricatives is practically the same as that of their E. counterparts. Attention should be drawn to a widespread (though incorrect) tendency among speakers of literary Estonian to substitute š for voiced ž in words such as 'žargoon, žest, žürii', etc. It should also be pointed out that the voiced Est. ž tends to be less energetic than the corresponding E. /ʒ/. The Est. learner should also take care to produce a slightly palatalized E. /š, ž/, i.e. the front of the tongue should be raised in the direction of the hard palate. In conclusion it should be noted that the semi-palatalized E. /š, ž/ differ from the Russian ш and ж which are non-palatalized (cf. E. [šip] ship, [ši:] she, [reiži:m] regime and Russ. [шип] шип, [шил] шил, [ре<sup>е</sup>жим] режим).

(e) The Glottal Fricative /h/

Examples. - /h/ (spelt h, wh): heat, hat, horse, who, whom, high, hair; ahead, behave, anyhow, manhood.

Note. - h is not pronounced initially in 'hour, honest, honour, heir, heiress'; medially in such words as 'exhaust, exhilarate, exhibit, vehicle, vehement'; and in some final suffixes, e.g. 'shepherd, Chatham, Birmingham', etc.

Description. - In the articulation of the phoneme /h/ the soft palate is raised, the back wall of the pharynx is slightly contracted and the root of the tongue moves backward. The bulk of the tongue and the lips are held in the position necessary for the production of a following vowel. The air is expelled from the lungs with considerable pressure, passing through the open glottis and causing slight friction throughout the vocal tract.

Thus /h/ may be defined as a voiceless glottal fricative consonant.

Occurrence and Variants. - The E. /h/ occurs only in word initial and medial, pre-vocalic positions, thus functioning essentially as a voiceless syllable-initial margin (cf. Est. h which may stand also in a word final position, e.g. 'jah, toh-oh').

A few speakers use a voiced (or slightly voiced) allophone medially between voiced sounds, e.g. in such words as 'anyhow, perhaps, behind'.

In many types of popular regional speech (e.g. London Cockney), /h/ is lost, so that no distinction is made between such minimal pairs as 'hill-ill; high-eye; hair-air'. Usually in such speech, the /h/ words will behave as if they had an initial vowel, e.g. a hill [ən'íl], the house [ðí 'aus]. On the other hand, the usual linking forms between article and word with initial vowel may be replaced by a weak /h/, e.g. an egg [ə<sup>h</sup>eg], the end [ðə<sup>h</sup>end], ham and eggs [ 'æmən<sup>h</sup>egz].

Such loss of /h/ (dropping one's h's) is usually regarded as characteristic of uneducated speech, but certain form words (esp. 'have, has, had', pronouns and pronominal adjectives) regularly lose /h/ in RP in unaccented, non-initial, positions in connected speech, e.g. 'he pushed him on his back' [hi: 'puʃt ðm ɔn ðz 'bæk], 'I could have hit her' [aɪ kəd əv 'hit ə].

Some RP speakers treat words with an initial unaccented h-syllable, e.g. 'historical, horizon', as if they be-

longed to the special group 'hour, honest', etc. i.e. pronouncing them without an initial /h/, e.g. 'an historical novel' [an i'storikal 'nɔvl], 'on the horizon' [ɔn ói j'raizn]. Such pronunciations, and also that of 'humour' as [ju:mə] are nowadays rare. In the case of 'hotel', however, an /h/-less form is fairly widely spread.

Comparison. - The Estonian pharyngeal or glottal h is practically identical in its articulation with the E. /h/. The latter is, however, generally weaker than the Est. h. In view of the fairly common tendency in Estonian to drop initial h the Estonian learner must take care to pronounce the E. /h/ wherever necessary. It is useful to practise oppositions between /h/ + vowel and initial vowels: 'heat-eat, hill-ill; hedge-edge, harbour-arbour, hate-eight, hold-old, hear-ear'.

Note 1. - Attention should be drawn to the existence in English of a glottal plosive stop [ʔ]. In forming this sound the obstruction to the air-stream is formed by the closure of the vocal cords, thereby interrupting the passage of air into the supra-glottal organs. The air pressure below the glottis is released by the sudden separation of the vocal cords. The compression stage of its articulation consists of silence, its presence being perceived auditorily by the sudden cessation of the preceding sound or by the sudden onset (often with an accompanying strong breath effort) of the following sound.

The glottal stop is also known as the "hard attack", the reinforcing stop, the glottal reinforcement. The sound is widely used in German where it is known as the "Knacklaut". It is also common in the southern Estonian dialects (e.g. the Võru dialect; a<sup>h</sup>anna<sup>h</sup> 'anna', ä<sup>h</sup>ra<sup>h</sup> 'ära') and as a means of emphatic reinforcement in Standard Estonian (e.g. ma ütlen - <sup>h</sup>ei, <sup>h</sup>ei 'ma ütlen: ei, ei').

The glottal stop, though frequently used by RP speakers, is not a phoneme in the RP system. The sound is used by many RP speakers (a) for emphasis on an initial accented

vowel (e.g. 'I shall go there anyhow' [ʔenihaʊ], 'it's uneatable' [ʌnʔi:təbl]); (b) as a syllable boundary marker (e.g. 'co-operate, geometry, reaction' [kou ʔɔpəreit, ʃi ʔɔmətri, ri ʔækʃən]); (c) as a reinforcement of final /p, t, k, ʃ/, either before the consonant, or at the same time as it (e.g. in 'sharp, bit, luck, much' [ʃa:ʔp, lʌʔk, mʌʔʃ]).

The glottal stop is used by some RP speakers (and in several kinds of regional speech) to replace word or morpheme final /t/ and even /p, k/ when followed by a homorganic consonant (e.g. 'that table' [ðætʔteibl], 'get down' [geʔdæʊn], 'great joke' [ɡreɪʔjɔk]); cf. also 'soap-powder' [ˈsouʔpaʊdə], 'back-garden' [ˈbækʔɡɑ:dən], 'book-case' [ˈbuʔkeɪs]. The glottal stop occurs regularly in various other positions in the regional dialects of E., e.g. London Cockney (e.g. 'Mind your feet' [ˈmaɪ ʒə ˈfeɪʔ], 'Have a look' [ævəˈluʔ], 'daughter' [ˈdɔ:ʔə], 'potato' [pəˈtæɪʔə], 'half a minute' [ˈɑ:ʔə ˈmɪnɪʔ], 'but what he ought to do' [bətʔwɔʔ i: ɔ:ʔ əˈdu:]).

Note 2. - In connection with the phoneme /h/ one should mention the medio-lingual palatal fricative spirant [ç] and the medio-lingual velar fricative spirant [x]. These consonants are also known, respectively, as the Ich-Laut (= the final sound in Modern German 'ich, dich') and the Ach-Laut (= final in 'Buch, Loch', medial in 'lachen'). [ç] and [x] occurred in Old English as allophones of /h/. Today they can still be met with in some varieties of Scottish English, e.g. in such words as 'night, light, enough' [niçt, liçt, əˈnjux]. Cf. also the word 'loch' [lɔx] (=lake; of Gaelic origin) as in 'Loch Lomond, Loch Ness', etc.

## B. The Sonant Spirants

The sonant (or sonorant) spirant consonants are articulated with very slight friction attended by sound. There are four such sonant spirants in RP: /w, j, r, l/. Depending on whether the air escapes through a passage somewhere

along the centre of the tongue or its sides, the sonant spirants are subdivided into (1) medial sonant spirants /w, j, r/, and (2) a lateral sonant spirant (/l/).

Note. - It was seen in a previous section (see above, p. 39) that difficulties are encountered as regards the proper definition of the status of the phonemes /w, j, r, l/ in English. The practically frictionless E. sounds /j, w, r/, for instance, which according to most phonetic descriptions are of a vowel-like type, function in the lg. as consonants, i.e. they are marginal in the syllable. The E. voiced lateral /l/ is commonly classed as of the consonantal type, because of the partial mouth closure with which it is articulated. From a functional viewpoint it also behaves as a consonant, since it is usually marginal in the syllable. Nevertheless, it sometimes seems to fulfil a syllabic function without the presence of a vowel, e.g.: in 'little, middle' ['litl̩, 'midl̩] (cf. syllabic n in 'button, sudden'; see above, p. 94). Because of their conspicuously mixed consonantal and vocalic quality, the phonemes /w, j/ are sometimes referred to as semi-vowels.

(1) The Medial Sonant Spirant /w, j, r/

(a) The Bilabial Velar Sonant /w/

Examples. - /w/ (spelt w, wh, u after q, g; note 'one, once, choir, suite' with /w/): wet, wag, wood, ward, which; twig, twice, quick, acquaint, square, equal, swim, away, always, language, dwarf.

Description. - In the articulation of RP /w/ the soft palate is raised. The lips are rounded and slightly protruded, forming a small narrowing while the back of the tongue is raised towards the soft palate as for /u/ or even higher.

The sides of the tongue are raised and the air-passage is open along the central part of the tongue. The air passes through the round narrowing between the lips without any audible friction. As the air-passage is rather

wide, in the articulation of the phoneme /w/ sound prevails over noise.

The vocal cords are drawn near together and vibrate.

The phoneme is very short and weak. The tongue and lips immediately move away to the position of the following vowel.

The phoneme /w/ may be defined as a bilabial velar medial sonant spirant.

Note. - Despite the fact that /w/ is, in phonetic terms, vocalic (no audible friction, the vocal cords vibrate, sound prevails over noise), it is treated within the consonant class, mainly because its function is consonantal rather than vowel-like, i.e. it has a marginal rather than a central situation in the syllable, occurring initially or in an initial cluster preceding a syllabic sound. Its consonantal function is emphasized by the fact the articles have their preconsonantal form when followed by /w/, i.e. 'the west, a wasp', with [ðe] or [ə] but not [ði] or [əw].

It should be borne in mind that /w/ (as well as /j/) is occasionally called a semi-vowel.

Variants. - The amount of lip-rounding in the articulation of /w/ depends upon the degree of openness of the following vowel, i.e. the lips are rounded more closely when followed by /u:, u/ or /ɔ:/ than when preceding a more open or front vowel, cf. 'woo, wood, war', with 'what, west, we'.

The main variant, both in RP and in other types of BE, concerns the pronunciation of the spelling form wh. Some careful RP speakers (especially females) and regularly in several regional types of speech, e.g. in Scottish English and Irish, words such as 'when' are pronounced with [hw] or, more usually, the voiceless labio-velar fricative [ɸ]. The latter sound is a strong (fortis), energetically articulated consonant with bilabial friction. In very careful speech the opposition of /w/ and [ɸ] has phonemic status, e.g. 'witch-which, weather-whether, were-where, wine-whine'. The use of [ɸ] as a phoneme has declined rapidly (especially among males) though it is often taught as the correct form in verse-speaking. There is no need for the foreign learner of RP to adopt



this sound for wh-words.

Comparison. - In Est. the sound w (practically identical with the E. /w/) occurs in the pronunciation of words in which a long u or diphthongal glide u is followed in spelling by a vowel. In such cases a w-sound may be heard between the u and the following vowel, e.g. 'kaua, liua, õue, juua' [kaũwà, liũwà, ɕũwè, júwa]. This Est. w is relatively rare and, moreover, it does not occur in an initial position. Consequently the Estonian learner may have trouble with the E. /w/ which he tends to replace by a /v/ or /u:/.

To avoid the first mistake the learner should protrude and round his lips, ensuring that the upper teeth play no part in the articulation (i.e. there should be no contact between the upper teeth and the lower lip). The opposition of /w/ and /v/ should be practised: 'west-vest, wine-vine, wheel-veal, worse-verse, wail-veil, weir-veer'.

To avoid the second mistake of using a long /u:/ instead of /w/, the lips should be made to move more quickly and energetically and the opening for the passage of air should be kept smaller than for /u:/. The distinction between /w/ and /u:/ is brought out by drilling such pairs as 'ooze-woos, soup-swoop, soon-swoon'.

For the purposes of practical teaching /w/ may be considered to be a variety of short /u/ produced with the lip-rounding somewhat closer and more energetic than for RP long /u:/. One may begin by practising such words as 'win, wine, well' with an initial long /u:/ [u:in, u:ain, u:el], gradually shortening the /u:/ and rounding the lips more strongly, trying to produce a sound that is both shorter and weaker than /u:/. Schoolchildren may be told to round their lips as if they were going to blow out a candle.

(b) The Medio-lingual Palatal Medial Sonant /j/

Examples. - /j/ (spelt y, i), cf. also [ju(:)], (spelt u, ew, eu, eau, ui): yes, yard, yield, year, union, tune, accuse, new, feud, beauty, suit; Europe, pure.

Description. - In the articulation of /j/ the soft palate is raised, the middle of the tongue is held against the hard palate at approximately the same height as in pronouncing the vowel /i/. The sides of the tongue are raised leaving the air-passage open along the central part of the tongue. The air passes without any audible friction through the narrowing formed by the central part of the tongue against the hard palate. The tip of the tongue is lowered. The lips are neutral or spread, but may anticipate the lip-rounding of the following vowel in such cases as 'you, years', etc. The vocal cords are drawn together and vibrate.

The phoneme /j/ is very short and weak. The tongue immediately moves away from the position for /j/ to that of the following vowel.

The phoneme /j/ may be defined as a medio-lingual palatal medial sonant spirant.

Because of its mixed consonantal and vocalic quality /j/ is referred to in some text-books as a semi-vowel (see above, p.112, Note).

Variants. - In many cases of RP /j+u:/, an alternative pronunciation without /j/ exists. In AE likewise both /u:/ and /ju:/ may be heard, e.g. in 'absolutely, salute, revolution, enthusiasm, suit, consume', etc. The form with /ju:/ seems to be becoming commoner in general and advanced RP. In AE words such as 'duty, tune, neutral, new' are also generally pronounced [ˈdu:ti, tu:n, ˈnu:trəl, nu:], but there is some educational pressure and a strong radio and TV pressure toward /ju:/.

In words like 'huge, humour, hew' (usually pronounced with initial [hju:-]) many RP speakers use a voiceless medio-lingual fricative spirant [ç] (see above, p.111, Note 2): [çu:ɹ̥, çu:mə, çu:].

Unaccented sequences of [tj, dj, sj, zj] coalesced in 17th-18th century E. into /č, ĵ, š, ž/. In some cases, e.g. 'issue, statue, immediate, educate, usual, gratitude', both forms may now be heard, the pronunciation with [tj, dj, sj,

zj] being characteristic of careful speech.

Comparison. - The articulation of the E. phoneme /j/ differs from the corresponding Estonian j (e.g. in 'jah, jäär, padjad, kalju, müüja') in the middle part of the tongue being slightly more retracted, i.e. the E. /j/ is palatal, the Est. j - prepalatal (see Fig.29). Estonian learners are also apt to make the E. /j/ too 'noisy', i.e. too fricative. This mistake is due to raising the middle of the tongue too high in the direction of the hard palate and to producing voice with too much force.

The starting point of the E. /j/ should be higher than that of short /i/ only in those cases when the sonant /j/ occurs immediately before the vowels /i:/ and /i/, e.g. in 'yeast, year' [ji:st, jia]. But even in such rare cases the starting point should not be higher than that of the Est. j.

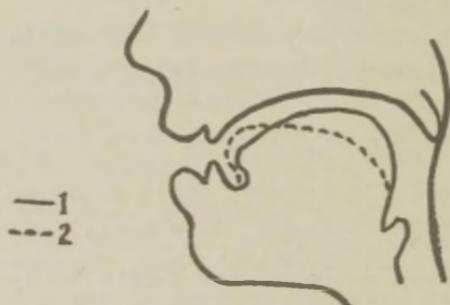


Fig.29. - Relative tongue-positions  
for E. /j/ - 1 and Est. j - 2.

Cf. E. 'yacht, yawn, yak, Yorkshire, Yankee' and Est.:  
'jott, joon, jakk, jorkšir, jänki'.

(c) The Forelingual Postalveolar Medial Sonant /r/

Examples. - /r/ (regularly spelt r, rr; also wr, rh)  
road, red, rude, very, diary, mirror, carry, write, rhythm.

Description. - In the articulation of the most common  
allophone of RP /r/ the soft palate is raised. The tip of

the tongue is held in a position near to, but not touching, the rear part of the upper teeth-ridge, the sides of the tongue are raised. The central part of the tongue is lowered, with a general contraction of the tongue, so that the effect of the tongue-position is one of hollowing and slight retroflexion of the tongue (Fig. 30). As the air-passage over the centre of the tongue is rather wide, the air passes through the narrowing without any audible friction. The lip position is determined largely by that of the following vowel, e.g. 'reach' with neutral to spread lips, 'root' with rounded lips.

This kind of /r/ may be defined as a forelingual post-alveolar medial sonant spirant.

The RP /r/ described above is phonetically vowel-like, but, having a non-central situation in the syllable, it functions as a consonant.

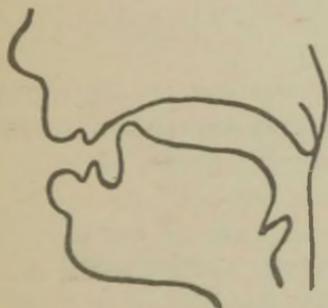


Fig.30. - Tongue-position of the RP /r/.

Occurrence and Variants. -

RP /r/ occurs only before a vowel, e.g. red [red], round [raund], write [rait], arrange [ə'reinʃ], story ['stɔ:ri]. No /r/ is used finally or before a consonant, e.g. far [f:], err [ə:], four [fɔ:], farm [fɑ:m], first [fɜ:st], scarce [skɛəs], nerarly ['niəli].

In all such cases an [r] sound existed in earlier forms of RP, as the spelling indicates.

But when a word ending with the letter 'r' is immediately followed by a word beginning with a vowel, then a [r]-sound is generally inserted in the pronunciation. This so-called linking r may be heard, e.g. in 'a pair of boots' [ə 'pɛər əv 'bu:ts], cf. the pronunciation of pair by itself - [pɛə]; 'there and back' [ðɛər ənd 'bæk], 'the other end' [ðɪ 'ʌðər 'end]. Not all RP speakers use the linking r, and indeed, there appears to be an increasing tendency,

esp. among younger people, not to use linking r at all, particularly when the vowel following the word ending in r is unstressed. Sometimes even compound words such as 'fire-engine, hair-oil' may now be heard without the [r]: ['faɪənjɪn, hɛəɔɪl] instead of ['faɪərɛnjɪn, 'hɛərɔɪl].

By analogy, this /r/ linking usage is extended by many speakers to all /ə, ɑ:, ɔ:/ endings, even when there is no historical (i.e. spelling) justification. Such intrusive (or interpolated) /r/s can be heard particularly in the case of /ə/ endings, e.g. 'drama and music' ['drɑ:mər ən 'mju:zɪk], 'no idea of it' ['nəʊ aɪdɪərəv ɪt], 'put a comma after it' ['pʊt ə 'kɒmər ɑ:ftər ɪt]. Less frequently analogous links, unjustified by the spelling, are made with final /ɑ:, ɔ:/, e.g. 'law and order' ['lɔ:r ən 'ɔ:də], 'the Shah of Persia' [ðə 'ʃɑ:r əv 'pɛ:ʃə]. Although a very large number of English people, educated as well as uneducated, use intrusive /r/ nowadays, foreign learners are not recommended to use it.

There are more phonetic variants of the /r/ phoneme than of any other E. consonant.

Within RP, the frictionless sonant variety [r] described above is frequently replaced by an alveolar tap [ɾ] in intervocalic positions, e.g. 'sorry, very, marry, Mary', and when following /θ, ð/, e.g. 'three, with respect'. In the case of intervocalic [ɾ], a single tap is made by the tip of the tongue on the upper teeth-ridge. The articulation of this [ɾ] differs from that of /d/ in that the contact for [ɾ] is of shorter duration and less complete than that of /d/; the central hollowing of the tongue typical of [ɾ] being retained.

A lingual rolled (or trilled) [ʀ] occurs in some Scottish types of E. This variant of /r/ is produced by a rapid succession of taps (3-7 in number) by the tip of the tongue on the upper teeth-ridge.

In the extreme north-east of England (Northumbria) and also among some Scottish speakers a uvular [R] may be heard. In this variant of /r/ the uvula vibrates against the back of the tongue.

In most forms of AE and in the south-west of England a retroflex (or inverted) [ɹ] is used. As indicated by the term this sound is produced by retroflexion of the tongue, i.e. the tip of the tongue is curled upwards toward the hard palate thus producing a characteristic hollow quality (Fig. 31). The retroflexion of the tongue may anticipate the consonant and colour the vowel articulation. Such 'r-coloured' vowels may occur in this type of speech in such words as 'bird, farm, murmur, verse', etc.

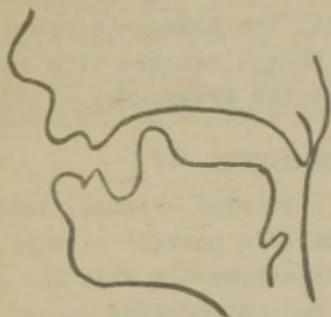


Fig.31 - Tongue-position of the retroflex [ɹ].

/r/ differs in various types of E. not only in its phonetic realization but also in its distribution. Thus most regional forms of BE speech and AE retain the earlier post-vocalic usage of /r/, distinguishing between such homophones as 'pour-paw; court-caught'. Such forms of speech are sometimes referred to as r-full, and contrasted in the literature with r-less

RP, etc.

Comparison. - The Estonian phoneme r is a rolled or trilled consonant, i.e. the tip of the tongue vibrates, interrupting the air-stream repeatedly and forming momentary obstructions against the teeth-ridge. The tip of the tongue taps against the teeth-ridge two or three times (cf. 3-7 taps in Scottish English). As has been shown above, the RP phoneme /r/ is not a rolled consonant. Moreover it should be remembered that the E. /r/ is post-alveolar, i.e. more retracted than the alveolar Est. r.

The substitution of any strongly rolled [r] for RP /r/ is not acceptable, although it is not a question of loss of intelligibility through phonemic confusion. A weak lingual roll is the least objectionable substitution for RP, whereas

a uvular sound is generally taken as a characteristic of a marked foreign accent (despite the fact that a uvular sound is not unknown in E. regional speech).

To acquire a correct pronunciation of the RP phoneme /r/ the learner should start from the long /ɑ:/ and, while pronouncing this phoneme, move the tip of the tongue upwards in the direction of (but not quite touching) the rear part of the upper teeth-ridge. It is also possible to proceed from a very long /z/ [zzz] and then move the tip of the tongue slowly away backwards from the teeth-ridge, without ceasing to pronounce the sound, until the passage between the teeth-ridge and the tip of the tongue becomes wide enough for the fricative /z/ to change into the sonant /r/.

(d) The Forelingual Alveolar Lateral Sonant /l/

A lateral consonant (cf. Lat. *lateralis* < *latus*, *lateris* 'side') is articulated by means of a partial closure, on one or both sides of which the air-stream is able to escape through the mouth. Only one lateral phoneme occurs in E., viz. the sonant /l/.

Examples. - /l/ (spelt l, ll): leave, lock, blow, glad; silly, island, ugly, specially; help, silver, illness; feel, doll, pile, owl.

Note. - In post-vocalic positions the letter 'l' is frequently silent, e.g. 'talk, should, half, folk, calm, salmon'.

Description. - There are two main variants of the phoneme /l/ in English. The so-called "clear" [l] is used before vowels and /j/, e.g. 'live, late, value'. The "dark" [ɫ] occurs before consonants and in a word-final position, e.g. 'help, almost; call, pool, oil', unless followed by a vowel or the sonant /j/ in the same sensegroup. In the latter case the clear variant is used: cf. call [kɔ:l] - call us [kɔ:l əs]; will [wɪɫ] - will you [wɪl ju:].

In pronouncing both variants of the phoneme /l/ the soft palate is raised. The tip of the tongue is in light

contact with the upper teeth-ridge while the sides of the tongue are lowered forming rather wide passages. The air passes along these channels without any audible friction. As a result, sound prevails over noise in the articulation of the phoneme /l/.

For clear [l] the front of the tongue is raised in the direction of the hard palate at the same time as the tip contact is made (see Fig. 32), thus giving a front vowel (or slightly palatalized) resonance to the consonant.

For dark [ɫ], the tip contact is again made on the teeth-ridge, the front of the tongue being somewhat depressed and the back raised in the direction of the soft palate (Fig. 33), giving a back vowel or velarized resonance, i.e. dark colouring to the consonant.

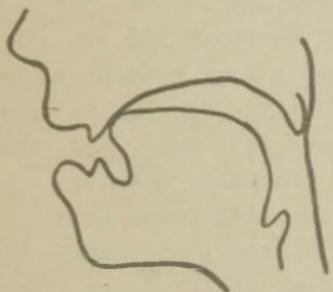


Fig.32. - Tongue-position of the E. 'clear' [l].

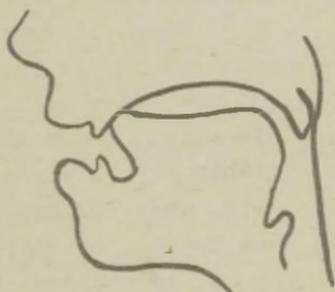


Fig.33. - Tongue-position of the E. 'dark' [ɫ].

The lips' position for both variants is influenced by the nature of the adjacent vowel, cf. 'leap, feel' (with spread lips), 'loop, pool' (with somewhat rounded lips).

The phoneme /l/ may be defined as a forelingual apical alveolar lateral sonant spirant.

The actual point of contact of the tongue is conditioned by the place of articulation of the following consonant. Thus, in 'health, will they, with love', the /l/ has a den-



tal contact; in 'ultra, all, dry', the contact for /l/ is likely to be post-alveolar.

Variants. - In addition to the clear and dark variants of /l/ described above, it is possible to distinguish a third allophone of the lateral consonant.

This is the voiceless [l̥] that follows stressed aspirated /p, k/ or weakly stressed /p, t, k/ (less considerable devoicing occurs after /s, f, θ, ð/) in, e.g. 'play, clean, apple, buckle, simple, mantle, uncle, slow, fly, satchel'.

The dark /ɫ/ may be regarded as having a syllabic function in such words as middle [ˈmɪdɫ], apple [ˈæpɫ], little [ˈlɪtɫ], angle [ˈæŋɡɫ], etc., where it may be equated with /ə+l/, i.e. [ˈmɪdəl], for instance, is a possible pronunciation of 'middle'; cf. below, p. 138.

In other varieties of English the distribution of [l] and [ɫ] may differ from that in RP (for the latter, see above, p. 120). Thus, in some kinds of Scottish and AE, /l/ before vowels and /j/ is realized with a dark resonance. In Irish E., on the other hand, a relatively clear /l/ is used in those situations where RP would have (ɫ). Note, too, that AE has syllabic (ɫ) in words, such as 'fertile, missile, reptile', etc. where RP now uses a preceding vowel ([-aɪɫ]).

In some speech, notably that of Cockney, the tongue-tip contact for [ɫ] is omitted, this variant of /l/ being often realized as a vowel resembling Est. ö with weak lip-rounding, thus sell [seö], fall [fɔö], table [ˈtaibö]. In such speech the lowering of /l:/ and /u:/ before [ö] is so marked that 'meal, mill' and 'pool, pull', may become homophonous or distinguished merely by the length of the central syllabic vowel element, e.g. [mi·ö] - [miö], [pu·ö] - [puö].

Comparison. - In Estonian the palatalized lateral consonant l' and non-palatalized l are capable of distinguishing words otherwise alike, i.e. they are distinct phonemes. Cf., e.g. tal' (hobusetall), 'stable' and tal (lambatall) 'lamb'; palk' (ehituspalk) 'log' and palk (tööpalk) 'wages, salary'. In English the difference between clear [l] and dark [ɫ] is

not phonemic.

The Est. phoneme l differs from the E. /l/ in its pre-dorsal-apical articulation. This means that in producing the Est. consonant it is the tip as well as part of the front of the tongue that touches the upper teeth or alveoli. The articulation of E. /l/ is apical, i.e. there is less contact between the tongue and the alveoli.

Although the Est. l is a fairly retracted consonant and can also be post-alveolar, it often has a more advanced dental articulation that is rare in English.

It should be borne in mind that the E. dark [ɫ] is velarized, i.e. the back of the tongue is raised in the direction of the soft palate (not the hard palate as in the case of the palatalized Est. l).

Note. - The difference between the E. clear and dark variants of /l/ and the Russian palatalized phoneme /л' / and non-palatalized /л / lies mainly in the different tongue position of the E. consonants. In the articulation of the Russian /л' / the middle of the tongue is raised still higher in the direction of the hard palate. The Russian non-palatalized phoneme /л /, on the other hand, is darker than the E. dark [ɫ] because for the Russian /л / the back of the tongue is raised still higher while the middle is lower. One should also note that the Russian lateral phonemes are predorsal and dental whereas the E. /l/ is apical and alveolar.

It is impossible to see and very hard to feel the difference in the position of the tongue during the pronunciation of the dark and clear varieties of /l/. Therefore, the learner should rely more on comparing the acoustic impression produced by these different sounds. The essential feature of dark [ɫ] is probably the accompanying dark resonance due to the rounded [o] or [ɔ] quality of the sound. Learners should begin by pronouncing a vowel of the [o] type for the syllabic [ɫ] in words such as 'bubble, people, awful', i.e. where a labial consonant precedes [ɫ], e.g. ['bʌbo, 'pi:po,

'o:fo]. The same sound sequence should then be attempted with the tongue-tip touching the upper teeth-ridge, thus producing a lateral sound with the correct velarized quality. The relationship of [ɹ] and [o] can further be established by practising the alternation of [o]-[l]-[o]-[ɹ], only the tongue-tip moving and the [o] resonance continuing.

Words for practice:

Est.		E.		Russ.	
non-palatal	palatal	clear	dark	non-palatalized	palatalized
<u>l</u>	<u>l'</u>	l	ɹ	л	л'
lukk	-	look	-	ЛУК	ЛУК
mul	mull, moll	-	Moll	МОЛ	МОЛЬ
lipp	-	lip	-	ЛИП	ЛИПКИЙ
lesk	-	less	-	ЛЕС	ЛЕЗЬ
pilduma	pill	pillow	pill	ПИЛ	ПИЛИТЬ

### (3) Consonant Clusters

Consonants very often occur in sequences or clusters of two or more. Such consonant clusters occur as onsets, in a word initial position before a vowel (e.g. storm, glad, scratch), as codas finally after a vowel (e.g. calls, cracked, ramps) or, as interludes, in an intervocalic, medial position (e.g. partner, almost, entrance, Knightsbridge).

Different languages have different phonemic arrangements or clustering patterns. Thus, in Czech we have combinations such as 'Brno, Plzeň, Vlk, Trnka'. In Bella Coola (a Red Indian lg. spoken in British Columbia) numerous whole words contain only consonants, e.g. [sk'lxlxc]<sup>1</sup> 'I'm getting cold', [tmk'mɪp] 'jack pine tree'. E. has [fl-] but not [vl-], Serbo-Croatian has [vl-] but not [fl-]. German has [št-], e.g. 'Sturm, Strand, Schlips', Est. avoids such combinations, e.g. 'torm, rand, lips'. As a rule no reasons can be given for the

<sup>1</sup>[c] = voiceless palatal plosive.

preference of a lg. for certain clustering patterns. The latter are just accidental features of the phonological structure of different lgs.

It is relatively simple to make a complete list of the consonant clusters found initially, finally or medially in a given lg. Thus Çh. F. Hockett shows (A Course in Modern Linguistics, N.Y. 1963, p. 86) that, -theoretically, if all possible sequences of 1, 2, or 3 consonants (out of the 24 in E.) occurred in initial clusters (=onsets), there would be a total of 14,425 different combinations: 1 zero onset, 24 of a single consonant (C),  $24^2 = 576$  of 2 C's and  $24^3 = 13,824$  of 3 C's, 1 zero onset. Actually, however, the total number of onsets of any frequency at all is well under one hundred. Excluding those in proper names there are 34 of the type CC, and 8 of the type CCC in RP. An analysis of initial consonant clusters in RP shows that, e.g. (1) /ʒ, ŋ / never occur in word initial position ('Jeanne, Giselle or Ngalo', etc. are exceptions); (2) /ŋ, ʃ, ʒ, č, ĵ / never combine with any other consonants in a word initial position.

Of the 8 possible onset clusters consisting of 3 consonants in RP all begin with /s/ and end in /r/, /l/, /w/ or /j/: /spr-, str-, skr-, spl-, skl-, skw-, spj-, skj-/ as in 'spread, stretch, scratch, splash, sclerosis, squelch, spume, skew'. Certain initial sequences such as /ʃr, zw, fs, mh, nd, rw, tl, stl/ are definitely un-English. Others such as, e.g. /fθ/ or /zl/ occur only in rare learned or foreign words.

The restriction of sequential possibilities (i.e. clustering patterns) means that the succession of phonemes in a word is to some extent predetermined by what precedes, e.g. word initial /ʃ/ must be followed by a vowel; a consonant must follow /e, æ, ʌ, ɔ, u/; word initial /st-/ must be followed by a vowel or by /r, j/, etc.

Lastly it should be noted that consonant sequences may change in the course of history, e.g. initial /hl-, hr-, hw-, wl-, wr-/ , etc. occurred in OE as in hlāford 'lord', hlūd 'loud', hrōf 'roof', wlanc 'proud', wriġan 'write'.

The study of the clustering patterns characteristic of a lg. is of considerable practical importance, e.g. in mechanical translation, printing, typing, etc.

#### (4) The Frequency of Occurrence of RP Consonants

According to an investigation by D. B. Fry (see above, p. 83) the alveolar consonants /n, t, d, s, l/ are those which occur most frequently in E. (cf. Est. where the same consonants are dental, i.e. more advanced).

The following is the order of frequency of occurrence established by Prof. D. B. Fry (in relation to all vowels and consonants): - /n/ - 7.58%, /t/ - 6.09%, /d/ - 4.89%, /s/ - 4.81%; /l/ - 3.66%, /ð/ - 3.56%, /m/ - 3.22%; /k/ - 3.09%, /r/ - 2.91%, /w/ - 2.81%; /z/ - 2.46%, /v/ - 2.00%, /b/ - 1.97%, /f/ - 1.79%, /p/ - 1.78%, /h/ - 1.46%, /ŋ/ - 1.15%, /g/ - 1.05%, /ʒ/ - 0.96%, /j/ - 0.88%, /ʃ/ - 0.60%, /ç/ - 0.41%, /θ/ - 0.37%, /ʒ/ - 0.10%.

As is to be expected from its historical origin and its restricted contextual distribution, /ʒ/ occupies the lowest position. Any general frequency count such as the one presented above reflects the occurrence of such common everyday words as the, that, which, etc., thus giving preponderance to /ð, w/, for example, as against /θ, j/.

#### (5) Brief Summary of the Main Difficulties Confronting the Estonian Learner in the Field of English Consonants and Their Combinations

It is safe to say that there are no completely identical vowels or consonants in English and Estonian. Anyone who wishes to avoid a foreign accent when speaking E. has to be aware of the differences that distinguish E. sounds from their counterparts in Est. There are, of course, some cases where the substitution of an Est. sound for the corresponding E. one is possible, i.e. the acoustic effect is practically identical with that of the use of a genuinely E. sound.

This is the case, e.g. with the consonants /m, h, š, ž, č, j/. The specifically E. phonemes /θ, ó, w/ do not present any particular difficulty because, although they are lacking in Est., their articulation can easily be acquired by the Estonian learner. Special care has to be taken, however, with such sounds as are superficially similar in the two lgs.

Attention has already been drawn in the appropriate sections above to the major pitfalls confronting the Est. learner of E. in the field of E. consonants and their combinations. The principal mistakes of the Estonian learner in this connection are (in the order in which they have been dealt with in the foregoing sections of the present handbook):

1. A lack of necessary aspiration in the case of the plosive stops /p, t, k/, especially when followed by a long vowel or by a diphthong (see pp.92-93).

2. The use of semi-voiced Est. b, d, g instead of the voiced, sonorous E. /b, d, g/ (see pp.93-94).

3. Substitution of a predorsal-apical and post-dental Est. t or d for the apical and alveolar E. /t, d/ (see p.90).

4. The use of a post-dental Est. n instead of a somewhat more retracted alveolar E. /n/ (see pp.93-94).

5. The use of /ŋ/ + /g/ (or /k/) in those cases where RP has only /ŋ/ (see p.97).

6. Substitution of a weak Est. f, v for the more energetic E. /f, v/ (see pp.100-101).

7. The use of dentalized Est. s, z instead of the more retracted alveolar E. /s, z/ (see p.106).

8. The substitution of a prepalatal and too fricative Est. j for the palatal and weaker E. /j/ (see p.116).

9. The substitution of a strongly rolled r for the forelingual sonant RP /r/ which is produced with one tap of the tongue or none (see p.119).

10. The use of a predorsal-apical and usually dental Est. l instead of the E. apical alveolar /l/ and the substi-

tution of an Est. unpalatalized l for the E. dark [ɪ] (see p.122).

The following points concerning E. consonants and their combinations should also be borne in mind:

1. In E. it is extremely important to distinguish between voiced and voiceless word-final consonants, because there are many pairs of words in which one word is differentiated from the other mainly by the presence or absence of voice. This is true not only of the oppositions /p/, /b/; /t/, /d/; /k/, /g/, but also of /s/, /z/ and /f/, /v/, cf. cat-cad, sat-sad, white-wide, use (n.) - use (v.), safe-save, etc.

2. There is as a rule no palatalization of consonants in E. The only E. consonants that have a palatal articulation as /š, ž, j/ and, to a lesser degree, the dark [ɪ], /k/ and /g/, may undergo very slight palatalization when followed by a front vowel, e.g. /i:/ in 'key, geese'. In all other cases the palatalization of consonants on the Estonian model must be avoided, cf., e.g. the unpalatalized /l/ and /n/ in the E. words 'Polly, penny, valley, honey' with the corresponding palatalized sounds in the Est. 'Polli, peni, väli, hani'.

3. In contrast to Estonian there are no geminate (i.e. double) consonants in E. pron. except at the junction of two words, as in 'pen-knife' [ˈpennaɪf] or 'head-dress' [ˈhɛdrɛs] (although two consonant letters frequently occur side by side in E. spelling). Hence such words as 'happy, yellow, runner' are pronounced [ˈhæpi], [ˈjelou], [ˈrʌnɚ]; cf. E. 'summer' [ˈsʌmə], 'cunning' [ˈkʌniŋ], 'penny' [ˈpeni] with Est. 'summa, summeerima; kannike; 2 penni'.

For various minor coarticulatory and assimilative changes affecting E. consonants, see below, pp.129 ff.

## Chapter 4

### ASSIMILATION IN ENGLISH

When phonemes are joined together within single words or at the junction of words in phrases and sentences, they have a tendency to react upon each other in such a way that the articulation of one phoneme influences the articulation of a neighbouring phoneme making the latter similar to itself. This process of change in a given phoneme under the influence of another phoneme (or phonemes) near it is called assimilation. The term assimilation may also be extended to include cases when two adjacent phonemes so influence each other as to give place to a single new phoneme different from either of them.

Although assimilation occurs in all lgs. it does not act in the same way everywhere. In MoE it is mainly consonant phonemes that are affected by assimilation.

The number of cases of change in the articulation of consonant phonemes due to assimilation in MoE is too large to be exhaustively dealt with here. The following is a select list of the more important assimilatory changes observed in present-day colloquial E.

The phenomena of assimilation may be dealt with from various points of view such as 1. the aspect of articulation affected (e.g. place of obstruction, active organ of speech, voicing or devoicing), 2. degree of completeness, 3. direction, and 4. constancy.



1. Assimilation Affecting the Place of Obstruction,  
and/or the Active Organ of Speech, Voicing or  
Devoicing

(1) The principal (alveolar) variants of the phonemes /t, d, n, l, s, z/ are replaced by dental variants when they are adjacent to the dental consonant phonemes /θ, ð/, e.g. eighth, not that, I brought them; width, read this; tenth, in the room; wealth, all that; sixth, what's this?; his thoughts, has the.

(2) Word-final /t, d, n, s, z/ readily assimilate to the place of the following word initial consonant in rapid speech. Thus /t/ > /p/ before /p, b, m/, e.g. that pen, that boy, that man ([ 'ðæp 'pen ], etc.); /t/ > /k/ before /k, g/, e.g. that cup, that girl ([ ðæk 'kʌp ], etc.); /n/ > /m/ before /p, b, m/, e.g. ten players, ten boys, ten men ([ 'ten 'pleɪz ] etc.); /s/ > /ʃ/ before /ʃ, j/, e.g. this shop, this year ([ 'ðɪʃ 'ʃɔ:p ], etc.).

(3) Special mention should be made of the coalescence of /t, d, s, z/ with /j/. This process which has led to earlier /t, d, s, z/ + /j/ giving /č, ĵ, š, ž/ medially in a word, e.g. 'nature, grandeur, mission, union' (see also above, p.115) may operate in contemporary colloquial speech at word boundaries, especially in question tags, e.g. /t/ + /j/ - What you want... [ 'wɔ:ʃu 'wɔnt... ]; didn't you? [ 'dɪdn tʃu ]; /d/ + /j/ - would you? [ 'wʊdʒu ]; /s/ + /j/ - In case you need it [ in 'keɪʃu 'ni:dɪt ].

(4) The alveolar phonemes /d, v, z, ð/ are commonly nasalized before a following /n, m/ in rapid speech, e.g. /d/ > /n/ - He wouldn't do it [ hi 'wʌnn(t) 'du:ɪt ], good news [ 'gʊn 'nju:z ]; /d/ > /m/ - Good morning [ 'gʊm mɔ:niŋ ]; /v/ > /m/ - You can have mine [ ju kʌ 'hæm 'meɪn ]; /z/ > /n/ - He doesn't know [ hi 'dʌnn(t) 'nou ]; /ð/ > /n/ - to win the race [ tə 'wɪn nɔ 'reɪs ].

Note. - The last two examples are frequent but standard pronunciations not to be imitated by the foreign learner.

(5) Under the influence of adjacent vowels or /w/ the characteristic lip-position of a consonant may change, e.g.

<u>lip-spread</u>	<u>lip-rounded</u>
/p/ pea, heap	pool, hoop, upward
/t/ tea, beat	two, boot, outward
/k/ keep, speak	cool, school, backward
/m/ mean, seem	moon, loom, somewhat
/n/ knee, seen	noon, onward
/l/ leave, feel	loom, tool, always
/r/ read	rude
/f/ feel, leaf	fool, roof
/s/ seat, geese	soon, goose, sweep
/ʃ/ sheet, leash	shoot, douche, dishwasher
/h/ he	who
	etc.

(6) At word boundaries in rapid connected speech, e.g. /t, k, n, ŋ, l, s/ are somewhat labialized before /w/ in such cases as: that one, thick one, thin one, wrong one, shall we, this way.

Note. - Modification in the articulation of a consonant under the influence of an adjacent consonant is sometimes called adaptation or accommodation.

(7) In combinations such as /pr, kr, kl, pl, tw, kw, tr/ the voiced second element is partially devoiced under the influence of the preceding consonant, e.g. print, pretty, cry, critic, class, please, play; two, at once; quick; track, at rest.

(8) A voiceless consonant phoneme may be replaced by a corresponding voiced consonant under the influence of an adjacent voiced consonant and vice versa.

(a) Thus the voiceless phoneme /s/ in 'goose' [gu:s] has been replaced by the voiced /z/ in the compound 'gooseberry' ['guzbari] under the influence of the adjacent voiceless consonant.

In the verb 'used' [ju:zd], on the other hand, the consonant phonemes /z/ and /d/ are replaced by the voiceless consonants /s/ and /t/ when 'to' [tu:] is added to 'used', viz. in 'used to' meaning 'was in the habit of', which is habitually pronounced [ˈju:st tə].

The following are some instances of the devoicing of consonants at word boundaries in close-knit groups: (a) /z/ may be replaced by /s/, e.g. 'what's this?' [ˈwɒts ˈðɪs], 'these socks' [ˈði:s ˈsɒks], 'he was sent' [hi wəz ˈsent]; (b) /ð/ by /θ/, e.g. 'with thanks' [wiθ ˈθæŋks], 'breathe slowly' [ˈbri:θ ˈsləʊli]; (c) /v/ by /f/, e.g. 'of course, we've found it' [ɒf ˈkɔ:s wi:f ˈfaʊnd it].

## 2. Degree of Completeness

It is usual to distinguish three degrees of assimilation: (1) complete, (2) partial and (3) intermediate.

(1) Assimilation is said to be complete when the articulation of the assimilated phoneme fully coincides with that of the assimilating phoneme. Thus when the Latin 'con + mittere' gave E. 'commit', there was complete assimilation of /n/ to the /m/ following. There is likewise complete assimilation of /s/ to /ʃ/ in horse-shoe [ˈhɔ:ʃu:] (< horse [hɔ:s] + shoe [ʃu:], this shawl [ˈðɪʃ ˈɔ:l], of /p/ to /b/ in cupboard [ˈkʌbəd].

(2) Assimilation is partial when the assimilated phoneme retains its main phonemic features and becomes only partly similar to the assimilating phoneme. The substitution of dental variants for the principal alveolar variants of the phonemes /t, d/, etc. referred to above (p. 89) is an illustration of partial assimilation.

(3) The degree of assimilation is said to be intermediate when the assimilated phoneme changes into a different phoneme, but does not coincide with the assimilating phoneme. Thus in 'gooseberry' the voiceless phoneme /s/ in goose [gu:s] is replaced by the voiced /z/ under the influence of /b/ in 'berry'. In 'That's all right' the phoneme /s/ has

replaced the phoneme /z/ under the influence of the preceding phoneme /t/.

The present-day pronunciation of the word 'handkerchief' [ˈhæŋkətʃɪf] illustrates the operation of both complete and intermediate assimilation. The earlier change of /d/ > /n/ is an instance of complete assimilation, the subsequent change of /n/ > /ŋ/ under the influence of /k/ is an instance of intermediate assimilation.

### 3. Direction of Assimilation

According to the direction in which the assimilative influence moves, it is possible to speak of (1) progressive, (2) regressive and (3) reciprocal (progressive-regressive) assimilation.

(1) In progressive assimilation the assimilated phoneme is influenced by the preceding phoneme (A → B).

Thus, in 'What's this?' [ˈwɒts ˈðɪs] the consonant /z/ is replaced by the phoneme /s/ under the influence of the preceding /t/ (cf. 'what is?' [ˈwɒt ɪz]; 'Pat's married' [ˈpæts ˈmæriɪd]; 'sandwich' [ˈsænwɪʃ]) (where the phoneme /d/ influenced by the preceding /n/ changed into /n/ and then disappeared).

Instances of progressive assimilation are relatively rare in English.

(2) In regressive (or anticipatory) assimilation the preceding phoneme is influenced by the one following it (A ← B).

In the compound word 'newspaper' the voiced /z/ in 'news' [nju:z] is replaced by the voiceless /s/ under the influence of the following /p/. Cf. also 'horseshoe' [hɔ:ʃu:], 'gooseberry' [ˈgu:zbəri], 'does she' [ˈdʌʃʃi].

(3) In reciprocal (or progressive-regressive, also known as double) assimilation the adjacent phonemes influence each other more or less equally. Such a mutual modification can be seen in e.g. 'quick' [kwɪk], 'twenty' [ˈtwenti] where the sonant /w/ is assimilated to the voiceless plosive pho-

nemes /k/ and /t/ respectively by becoming partly devoiced. In their turn, the consonants /k/ and /t/ are assimilated to the phoneme /w/ and are represented by their labialized variants.

#### 4. Constancy

Assimilation may be permanent (within a word as in 'cupboard, sixth, horseshoe, wealth') or temporary (on a word boundary, e.g. 'Good morning' ['gummo:nɪŋ], 'he was sent' [hi wəz 'sent]).

Not all assimilations are established in the standard pronunciation of a lg. One speaks of established assimilation when it has become so usual that its omission would amount to mispronunciation.

Thus it is correct to pronounce 'nature' as ['neɪtʃə], 'question' as ['kwesʃən], but it would be wrong to say ['neɪtʃə] or ['kwestʃən]. Similarly 'used to' ['ju:st tə] is correct, but ['ju:zd tə] is wrong.

We speak of accidental assimilation when it is the result of careless speech and cannot be considered as acceptable in the standard lg. The following are some examples of accidental assimilation: let me ['lemmi] instead of [let mi], give me ['gimmi] instead of ['gɪv mi], he doesn't know [hi dɑn'hou] instead of [hi 'dɑznt 'nou].

#### Some Difficulties of Foreign Learners

The foreign learner should be aware of the E. assimilatory tendencies governing words in context, so as to avoid un-English assimilations. Some such cases are listed below.

Word	Correct Pron.	Wrong Pron.
absolute	æbsəlu:t	æpsəlu:t
abstract	æbstrækt	-p-
absurd	æbsə:d	-p-
anecdote	ænikdout	ænegdout

Word	Correct Pron.	Wrong Pron.
black death	'blæk 'deθ	'blæg 'deθ
medicine	'medsɪn	-ts-
observe	əbzə:v	-ps-
obstinate	'ɒbstɪnɪt	-ps-
plenty of time	-əv-	-əf-
like that	'laɪk 'ðæt	'laɪg 'ðæt
cut the finger	'kʌt ðə 'fɪŋgə	'kʌd ðə 'fɪŋgə
white door	'waɪt 'dɔ:	'waɪd 'dɔ:
shut the book	'ʃʌt ðə 'bʊk	'ʃʌd ðə 'bʊk

Special care should also be given to the proper pron. of words ending in -ture, -tion, -tial, -cial, -cion, -ure (see above, pp. 98-99, 107-108).

## Chapter 5

### THE SYLLABLE

The concept of a unit on a higher level than that of the phoneme or sound segment, yet distinct from that of the word or morpheme, has existed since ancient times. Such a unit has come to be called a syllable (Latin *syllaba*, Gr.  $\sigma\upsilon\lambda\lambda\alpha\beta\acute{\eta}$  - 'that which is held together, several letters taken together so as to form one sound'). Many attempts have been made to define the term 'syllable'. These attempts fall into two main categories: those which seek a universal definition in phonetic terms and those which look for a specific functional definition in terms of a particular lg. Some of these many approaches are outlined in the following paragraphs (for details, see A. C. Gimson, *op. cit.*, pp. 51-52).

(1) The Prominence Theory. - In any utterance some sounds are said to be more 'prominent' or 'sonorous' than others, i.e. they are felt to stand out from their neighbours. In the word 'sonority' [sɒnɔːrɪtɪ], there are four such 'peaks' of prominence: [ə, ɔ, ɪ, ɪ]. The number of syllables being determined by the number of peaks of prominence, there are in this case four syllables. Syllable boundaries occur at the points of relatively weak prominence ('valleys'), i.e. at [s, n, r, t]. This theory, which is based mainly on auditory judgments, does not determine to which the weak sound, constituting the boundary between two syllables, is to be attributed. Moreover, difficulties are encountered in the case of lgs. such as E. which contain consonant clusters. The word 'extra' ['ekstrə], for instance, shows three peaks

of prominence [e, s, ə], thus forming three syllables. This contradicts the native feeling for a division at a higher level than the phoneme, which tends to divide the word as [ek-strə] or [ˈeks-trə].

(2) The Pulse Theory. - This approach is concerned with the muscular activity controlling lung movement which takes place during speech and which is capable of being investigated by experimental methods. It is claimed that in any utterance there are a number of chest pulses, accompanied by increases in air pressure, which determine the number of syllables uttered. Such a theory suggests that the syllable rather than the sound is the basic unit of speech, consonantal sounds acting typically as the onset (releasing factor) and closure (arresting factor) of the syllable, while vowel sounds are nuclear to the syllable and render the chest pulse audible. Here too, such a unit on the speech level may prove to be irrelevant or misleading on the linguistic level. Especially in such cases where there is juxtaposition of two vowel sounds, the second being weakly stressed as in 'seeing' [ˈsi:iŋ], it is doubtful whether a double chest pulse is evident, although it is clear that the word is to be divided linguistically into two units.

It would seem that the syllable is more usefully defined in linguistic terms, i.e. with reference to the structure of one particular lg. rather than in general, phonetic terms with universal application. It may be found appropriate to divide a similar sound sequence differently in different lgs; e.g. such an utterance as [ŋga:] might be found to consist of three units in one lg. /ŋ-ga-a/, two in another /ŋ-ga:/, and even one in a third /ŋga:/. The divisions to be made might be indicated by the extent of the sequence covered by different tones or stress, in which case the syllable would correspond to a unit of tone or stress. On the other hand, a statement concerning the syllables of a lg. may refer to the particular way in which some phonemes (vowels) are shown to have a typically central



situation in the permissible groups, whereas others (consonants) are more typically marginal in their position.

More experimental research is needed before we can arrive at a satisfactory definition of the term 'syllable' in E. For the time being only a few preliminary considerations may be presented.

In E. a syllable is formed (1) by any vowel (monophthong or diphthong) alone or in combination with one or more consonants and (2) by a word-final sonant (lateral or nasal) immediately preceded by a consonant. E.g. [ɑ:] are; [it] it; [mæn] man; [ˈsiks-ti] sixty; [ˈɔ:-di-nə-ri-li] ordinarily; [ˈteɪbəl] table, [ˈpi:pəl] people, [ˈgɑ:dən] garden, [ˈfɔ:lən] fallen.

The E. lateral /l/ and nasal /n/ often seem to fulfil a syllabic function in E. words without the presence of a vowel (see above, p.122). There also are a few words in E. with a syllabic /m/, e.g. [ˈfɪlm] film; [ˈrɪðm] rhythm, [ˈblɒsm] blossom, [ˈbɒtm] bottom.

Many E. words with syllabic sonants at the end may also be pronounced with a neutral vowel before the final sonant. In such cases the latter becomes non-syllabic. Cf. bottom [ˈbɒtm] and [ˈbɒtəm], division [dɪvɪʒn] and [dɪvɪʒən], arrival [əˈraɪvɪ] and [əˈraɪvəl]. Such words are always spelt with a vowel letter before the final sonant. On the other hand, there are many words in E. which are spelt with a vowel letter before the final sonant and yet have only one pronunciation - that with a syllabic final sonant, e.g. garden [ˈgɑ:dən], pardon [ˈpɑ:dən], eaten [ˈi:tən], lesson [ˈlesən], season [ˈsi:zən], capital [ˈkæpɪtəl]. In order to avoid mistakes in the pron. of such words, the learner is recommended to make the final sonant always syllabic.

Note. - The sonants in the words listed above often lose their syllabic character when they occur in the middle of a word before a vowel belonging to a suffix. Cf. [ˈlɪsn] listen, but [ˈlɪs-nɪŋ] listening, [ˈlɪs-nə] listener.

The E. lg. has its peculiarities as regards the division of words into syllables. The learner should take care not to pronounce the final consonant of a word in such a way as if it were the first sound of the following stressed word, e.g. is over [iz 'ouvə] (not [i 'zouvə], stand up ['stænd 'ʌp] (not ['stæən 'dʌp])).

The division of E. words into syllables is governed by the following principal rules.<sup>1</sup>

The E. long monophthongs, diphthongs and unstressed short vowels always occur in a phonetically open syllable (i.e. a syllable which ends in a vowel sound). This means that the point of syllable division is immediately after them when they are separated from a following syllable by only one consonant, e.g. ['mi:-tiŋ] meeting, ['ɑ:-mi] army, ['fɔ:-ti] forty, ['mju:-zɪk] music, ['ɔ:-di-nə-ri-li] ordinarily, ['fei-sɪz] faces, ['gɑ:-dn] garden.

A short stressed vowel in the same position (i.e. when separated from a following syllable sound by only one consonant, always occurs in a closed syllable (i.e. a syllable which ends in a consonant sound), although it is difficult to say where the point of syllable division actually is: after the consonant or within it, e.g. ['sɪti] city, ['lɪli] lily, ['meni] many, ['bɒdi] body, ['fæm-i-li] family, ['lʊkɪŋ] looking, ['pet-i] petty, ['bætəl] battle (cf. the orthographical division here into 'cit-y, lil-y, man-y, bod-y, fam-i-ly, look-ing, pet-ty, stud-y, bat-tle). It should be remembered in this connection that in Est. and Russian words with only one consonant between two vowels the first syllable is always open, e.g. Est. su-li, ki-ri, fa-mi-liaar-ne, pe-tis; Russ. ли-ли (лили воду), Пе-ти (Пети нет дома), фа-ми-ли-я. In E., however, a stressed short vowel can occur only in a closed syllable.

<sup>1</sup> The syllables referred to here are phonetic syllables and not the syllables occurring in spelling. The rules governing orthographical division into syllables (or syllabication) are inconsistent and complicated in E. as they are partly derivational and partly traditional. Orthographical division into syllables cannot be discussed here.

## Chapter 6

### WORD STRESS

#### 1. Introductory

The word, composed of one or more phonemes, has a separate linguistic identity, in that it is a commutable entity, higher than the phoneme, which may either constitute a complete utterance or may be substituted in a larger utterance for other words of the same class. The word may be thought of as a shape or pattern made up of the qualitative and quantitative elements of its phonemes, the latter being also capable of distinctive commutation (e.g. the /t/, /d/, and vowel length commutation in 'write, ride' or 'writer, rider'). Furthermore, in polysyllabic words, the word shape has an identity determined by the relationship of its parts. Thus, 'writer, rider', may be said to have a pattern consisting of a 'strong' syllable followed by a weak syllable: ●●. This is also the pattern of written [ˈrɪtɪŋ]; but in the case of 'return' [rɪtə:n] or 'again' [əˈgeɪn], the pattern is ●●. It may be said, therefore, that the identity of 'return, again', depends not only on the different qualitative and quantitative elements which distinguish these words from, e.g. 'written', but also on the different patterns of the total word-forms which derive from the varying prominence of the parts. The syllable or syllables of a word which stand out from the remainder are said to be stressed.

Word stress may be defined as a greater degree of prominence given to one or more of the syllables of a word.

In E. (as well as in Est. and Russ.) this greater degree of prominence is effected mainly by a general increase in the force of articulation, i.e. by relatively greater breath effort and muscular energy, in voiced sounds also by a greater amplitude of vibration of the vocal cords, together with the reinforcing resonation of the supraglottal cavities. The listener usually perceives the greater intensity of a stressed sound or syllable as greater loudness associated with it.

Note. - Actually any or all of four factors - stress, pitch, quality and quantity may render a syllable more prominent than its neighbours. Their relative importance may vary in different lgs. The terms 'accent' and 'accentuation' are commonly used when referring to these four factors collectively. In view of the predominant position of stress (i.e. greater force of exhalation and muscular tension) in the accentuation of E. words, the present chapter deals almost exclusively with this aspect and the term 'stress' is employed below practically as a synonym of the broader term 'accent'.

Since word-stress in E. is effected mainly by greater force of articulation, it may be characterized as force stress or dynamic stress. At the same time it should be noted that phonemes in stressed syllables are louder (and usually longer), more distinct and definite in their quality than the same phonemes in unstressed syllables. Cf. e.g. the vowels /ɔ:/ and /i/ in the words [ɪmˈpɔ:t] import (v.) and [ˈɪmpɔ:t] import (n.).

Word-stress in E., as well as in Est. and Russ., may have a phonemic function. Thus in E. it distinguishes certain verbs from nouns identical in spelling, e.g. abstract, accent, attribute, combine, conduct, extract, increase, object, permit, produce, refuse, subject, etc. In Est. and Russ. stress may differentiate words and grammatical forms. Cf. Est. 'traktorist' 'of, out of the tractor' - 'traktoriist' 'tractor-driver'; Russ. мука́ 'flour, meal' - му́ка 'torment, torture'; Russ. ру́ки 'hands' - руки́ 'of the hand'.

In E. word-stress may also distinguish a free syntactical combination of words from a compound word. Cf. 'black-board' - 'black 'board, 'bluebird - 'blue 'bird, 'redhead - 'red head'. (See below, p. 144).

Word-stress should be considered from the point of view of the degree of the force with which the stressed syllable is pronounced and its position or place in a word.

In polysyllabic words it is possible to distinguish several degrees of stress. Thus, if we indicate the strongest stress by means of the superimposed figure <sup>1</sup>, the second strongest stress by <sup>2</sup>, etc., the different syllables of the word 'opportunity' would be marked as follows: <sup>2</sup>op- <sup>4</sup>pór - <sup>1</sup>tú-  
- <sup>5</sup>ní - <sup>3</sup>ty. For practical purposes it is generally sufficient to distinguish two degrees of stress: main (also called principal or primary) stress (indicated by the stress mark ['] in front of the relevant syllable) and secondary stress (indicated by the mark [,]). The other syllables are said to be unstressed, e.g. [ ,pə'tju:niti ] opportunity.

As to the place of the main stress in E. words, it is relatively free, in the sense that it may fall on any syllable in different words, but fixed, in the sense that it must always rest on a particular syllable of a given word, e.g. 'institute, uníversity, matriculation, exámínee. In Russian and German, too, the main stress is not tied to any particular situation in a word, e.g. зáвтра, сегóдня, вчерá; 'lernen, belehren, Partei. In some other lgs. the principal stress in a word falls regularly on a certain syllable, e.g. the penultimate (i.e. last but one) syllable in Polish, the first in Czech, and the ultimate (or last) in French. In Estonian the principal stress usually rests on the first syllable, but in some words (mainly of foreign origin) it may fall elsewhere, e.g. 'inimene, 'ühiskond, 'loodus, 'maja, 'kaunis, kirjutama, etc., but - revolutsioon, armee, miljöö, paraad, reáalsus, etc.

The variability and frequent unpredictability of E. word-stress obviously makes the learning of E. more difficult. It is possible to formulate some rules governing the

stressing of E. words, but these rules are generally subject to numerous exceptions. The foreign student practically has to learn the stress of every word individually.

## 2. Stress in Simple and Derivative Words

The place of the main stress in a great many E. words is determined by the strong tendency existing in the E. language since its earliest period to stress the initial syllable of a word, unless this syllable is a prefix which has lost its meaning.

### A. Disyllabic Words

Thus in most E. words of two syllables the stress falls on the first syllable, e.g. 'better, 'mother, 'colour, 'happy, 'window.

In disyllabic words with a prefix which has lost its meaning the stress falls on the second syllable, i.e. on the root syllable, e.g. be'gin, for'give, pro'ounce.

In words of French origin borrowed before the 16th cent., the stress has been anglicized, i.e. shifted to the first syllable, e.g. 'army, 'finish, 'beauty. In some French loan-words (but not all) borrowed after the 16th cent., however, the stress is placed in the French manner on the final syllable, e.g. ma'chine, po'lice, in'trigue.

### B. Words of Three Syllables and More

In most E. words of three syllables, the stress falls usually on the first syllable, although there are also words with the stress on the second syllable, e.g. 'communist, 'family, 'unity, but cf. re'member, Oc'tober, pro'ductive.

The main stress on the third syllable from the end is especially typical of most polysyllabic verbs with the suffixes -ize, -fy, -ate, e.g. ci'vilize, a'pologize; 'qualify, pe'rsonify; a'gitate, a'ppreciate. Cf., however, disyllabic verbs with the same endings: dictate, sur'prise, de'fy.

In most words of four or more syllables the stress falls on the third syllable from the end, e.g. 'communism, 'identify, bi'ography, ne'cessity. Some four-syllable words, however, have the main stress on the first syllable from the beginning, e.g. 'agriculture, 'literature, 'dictionary, 'adversary.

There are suffixes which attract the main stress onto the syllable immediately preceding them, e.g. -ion, -ical, -ian, -ious, -itive, -cient, -logy, -graphy, -cracy, etc. as in oc'casion, op'inion, 'comical, phys'ician, ma'licious, in'finitive, eff'icient, bi'ology, ge'ography, de'mocracy, etc.

Some suffixes attract the primary stress onto themselves, e.g. -ee, -eer, -ade, -itis, -(m)ental, -esque, etc. as in re'fugee, re'feree, mar'melade, appen'dicitis, expe'rimental, pictu'resque, etc.

In most words of four syllables and more there are two stresses - a main stress and a secondary stress: scientific, illustration, investigation. The presence and the position of the secondary stress in E. words are determined by two main factors: (1) the number of syllables in the word and (2) the place of the main stress. The rules governing the presence and the position of secondary stress are too complicated and numerous to be given here (for a discussion of these rules, see V. A. Vassilyev et al., op. cit., pp. 126-127).

### 3. Stress in Compound Words

Most E. compound nouns have a main stress on the first element, e.g. 'apple-tree, 'bookcase, 'cardboard, 'earthquake, 'footprint, 'lifeboat, 'railway, 'washbasin.

As was pointed out above, word-stress may help to distinguish a compound word from a free combination of words in E., cf. e.g. 'blackboard - 'black 'board; 'bluebottle - 'blue 'bottle; 'walking stick (= a stick for walking) - 'walking 'stick (= a stick that walks).

Although in the majority of E. compound nouns the first element is stressed, there are some compound nouns

which have two main stresses (see the following section) and a few which have a main stress on the second element (e.g. man'kind, short'coming, also 'shortcoming). The place of word-stress in E. compound nouns largely depends on semantic considerations and the stress in such words should be learned individually.

#### 4. Words with Level Stress

When a word of two or more syllables contains two syllables each of which is pronounced with approximately the same strong degree of force of articulation, it is said to have level (or even) stress, e.g. 'Chi'nese, 'mis'print, 'four-teen, 'il'legal, 'well-'known.

Note 1. - Investigations show that the two stresses of such so-called level-stress words are seldom exactly equal. The second stress is usually markedly stronger (especially in AE). Since, however, the first stress in 'thir'teen is perceptibly stronger than the secondary one in, e.g. 'horse'shoe, the term level or even stress is used for convenience.

Note 2. - The stress-patterns of such level-stress words are subject to modification in connected speech (see below, p.146, "Rhythmical Variations").

Most E. words which have two main stresses are formed with certain prefixes or suffixes or they are compound words. The principal cases of level stress in E. words and word-combinations are the following:

1. Numerals from 13 to 19: 'four'teen, 'nin'eteen.

2. Many words with certain separable prefixes such as dis-, non-, in- (used to form a negative, also the variants in-, il-, im-, ir-), ex- (meaning 'former'), re- (denoting repetition), anti-, into-, sub-, pre-, ultra-, vice; arch-; un-, mis-, over-, out-, under-, etc. E.g. 'dis'appear, 'non-'par-ty, 'in'artistic, 'ex-'minister, 're'write, 'anti'war, 'inter'change, 'sub-'editor, 'pre'paid, 'ultra'modern, 'vice-'president, 'arch'bishop, 'un'known, 'mis'trust, 'over'crowded, 'out'do, 'under'feed, etc. Note, however, e.g. un'u'sual, un'fortunate, im'possible, mis'take, 'mis'chief (in the last two cases the element mis- is no longer



felt to be a prefix).

3. Compound adjectives consisting of adjectival elements: 'old-fashioned, 'bad-tempered, 'hard-working, 'good-looking, etc. Cf. 'thunderstruck, 'seasick, etc. where the first component is a noun; also note 'homesick, 'homespun, but 'home-made, 'home-grown.

4. Composite verbs (i.e. verbs consisting of a verb and a postposition of adverbial origin), e.g. to 'get up, to 'leave out, to 'give up, to 'put off.

5. Names of localities and geographical names consisting of a proper noun and a common noun:

Trafalgar 'Square, 'Piccadilly 'Circus, 'Kensington 'Gardens, the 'Baltic 'Sea, the Atlantic 'Ocean, the 'Ural 'Mountains, 'Park Lane.

Exceptions: The word 'street' in names of streets is never stressed (except when emphatically contrasted), e.g. 'Oxford Street, 'Bond Street, 'Gorky Street; cf. 'I said 'Oxford 'Street not 'Oxford university'.

The ending -shire in the names of countries is not stressed, e.g. Yorkshire [ˈjɔːkʃə], Lincolnshire [ˈlɪŋkənʃə].

### 5. Rhythmical Variations

A well-known feature of E. accentuation (see above, p. 141, Note) is its rhythmic character. This means that in E. pron. strongly stressed syllables alternate with much weaker ones. Syllables pronounced with strong stress involve a considerable expenditure of breath and muscular effort. Weakly stressed syllables provide an opportunity to recover from this effort. Notice the typical alternation of stressed and unstressed syllables in such sentences as /Have you/ ever/been to/ Moscow?/ Said normally, this sentence sounds almost as if it consisted of trochees: /●./●./●./●./●./ Cf. the almost dactylic effect of /It/wasn't a /great deal of/ trouble./ or /They/couldn't have /chosen a /better /time for their / holiday./

In E. utterances the syllables uttered with the great-

est stress constitute hubs with which unstressed syllables are associated to form rhythmic groups. The utterance is delivered as a series of close-knit rhythmic groups based on the strongly stressed syllables. A rhythmic group consists of a stressed syllable together with one or more unstressed syllables. It is noticeable that the strong stresses or rhythmic beats of an utterance occur at fairly equal intervals of time. As a result of this, the speed at which the unstressed syllables are uttered (and the length of each) will depend upon the number occurring between the strong beats. When two or three stressed syllables come together, the speed of the utterance is slower; when they are separated by several unstressed syllables, the latter are pronounced more rapidly and during more-or-less the same period of time, irrespective of their number.

The stressing of words normally pronounced with level stress is very often modified in sentences as a result of the rhythmic character in E. pronunciation just mentioned. Thus, the first of the stressed syllables in a word or word group containing two main stresses is apt to lose its stress when closely preceded by another stressed syllable, e.g. 'old-fashioned, but an 'old-fashioned 'dress; 'unhappy, but an 'unhappy 'man, 'fourteen, but 'fourteen 'shillings. Likewise, the second main stress usually disappears when followed by a stressed syllable, e.g. She is 'very old-fashioned; he was 'quite unhappy; she was 'just sixteen. Cf. also the common pronunciations 'nineteen 'sixty-five, the 'Black 'Sea, - a 'Black Sea 'rest-home, 'Waterloo 'Station - the 'train for 'Waterloo; 'india 'rubber - an 'india-rubber 'ball.

#### 6. Relative Instability of Stress Patterns

The stress patterns of words are liable to change. Considerable changes of this kind have taken place in E. during the last three hundred years, in addition to the large-scale shifts affecting French borrowings in ME. Thus in the 17th century (and still in AE), a secondary stress with a distinct

vowel occurred in the penultimate syllable of such words as 'necessary, adversary, momentary'. About a century ago it was still possible to hear pronunciations like balcony, melancholy; a mere fifty years ago decadent, lamentable, interesting were still current. At the present time, too, there is some hesitancy and variation of pattern resulting from rhythmic and analogical pressures. On the one hand there is a noticeable tendency to move the main stress forward to the first syllable, e.g. magazine, television, research. In other words there appears to be a tendency to avoid a succession of weak syllables, especially if these have /ə/ or /i/, e.g. exquisite ['ekskwɪsɪt] or [ekskwɪzɪt], integral ['ɪntɪgrəl] or [ɪntɪgrəl]. Note also the present-day variation in the stressing of controversy ['kɒntroʊvəsi] or [kɒntroʊvəsi], hospitable ['hɒspɪtəbl] or [hɒspɪtəbl], capitalist ['kæpɪtəlɪst] or [kæpɪtəlɪst], contribute [kɒntrɪbju:t] or [kɒntrɪbju:t], applicable [æplɪkəbl] or [əplɪkəbl], formidable [fɔ:mɪdəbl] or [fə'mɪdəbl], etc.

In view of the inconsistent and slowly shifting character of stress in many E. words it is always advisable to look up the pronunciation of any doubtful cases in a reliable (preferably up-to-date) dictionary.

The Est. learner should pay special attention to such international words as are differently stressed in E., e.g. product, incident, electron, police, etc.

## Chapter 7

### SENTENCE STRESS

Connected speech, i.e. an utterance consisting of more than one word, shows features of accentuation that are in many ways comparable with those found in the polysyllabic word. Some parts of the connected utterance will be made to stand out from their environment, in the same way that certain syllables of a polysyllabic word are more prominent than their neighbours. Accentuation in connected speech differs, however, from the usual case of a polysyllabic word in that the situation of the stress in connected speech is determined largely by the meaning which the utterance is intended to convey.

Connected speech usually takes the form of sentences. For practical purposes it is therefore necessary to discuss stress within the sentence or sentence-stress.

Sentence-stress is the greater prominence with which one or more words in a sentence are pronounced as compared with the other words of the same sentence.

This greater prominence is achieved by the greater force of utterance, by changes in pitch, by the greater length of the sounds in stressed words than in unstressed ones, by preserving the full quality of sounds, i.e. by pronouncing them more distinctly.

Sentence-stress has two main functions: Its first function is to single out words in the sentence according to their relative semantic importance. The more important the

word is, the stronger is the stress, e.g. I want / to go to-morrow. In this sentence the words 'want, go, to-morrow' are stressed because semantically they are the most important.

The second function of sentence-stress is to serve as the basis for the rhythmical structure of the sentence. As was pointed out above (see p. 146), the rhythm of E. speech is constituted by the recurrence of stressed syllables at more or less regular intervals of time and by the alternation of stressed and unstressed syllables. Under the influence of the peculiar rhythm of E. speech semantically important words (i.e. words with full lexical meaning) which are usually stressed may be pronounced without sentence-stress. Cf. 'Very good. and Not very good. In the first sentence both words are stressed. In the second sentence the word 'very' loses its stress under the influence of rhythm, i.e. in order not to pronounce two stressed syllables in succession.

Sentence stress has its specific features in different lgs. A word belonging to one and the same part of speech may be disposed to receive stress in one lg. and be usually unstressed in another. E. g. personal pronouns are generally stressed in Russian (and often in Estonian) sentences, but not in E. sentences.

The words which are usually stressed in E. unemphatic speech belong to what are traditionally called the notional parts of speech or content words, viz. nouns, adjectives, numerals, notional verbs, adverbs, demonstrative, interrogative, emphasizing pronouns, and the absolute forms of possessive pronouns.

Personal, possessive, reflexive and relative pronouns, which also belong to the notional parts of speech, are usually not stressed. The other classes of words which are usually not stressed in E. unemphatic speech are form (or grammatical) words (i.e. words which express the grammatical relationship between words in the sentence). These are auxiliary and modal verbs, as well as the verb 'to be', prepositions, conjunctions, articles and particles.

Note the stressing in the following sentences:

'What do you/think of the/weather? - 'Who was that on the/phone?  
They couldn't have/chosen a/better/time for their/holiday.  
'Twenty minutes later/he came out of Number Seven,/pale,/  
with his lips tightly compressed/and an odd expression on  
his face/'

It should be pointed out, however, that any word (including form words) in a sentence may be logically stressed. This means that sentence stress depends on the meaning of the utterance which is largely conditioned by the situation and context in which it occurs. Cf. 'Where have you been? (= Kus oled sa ometi olnud?) 'Where have you been? (= Kus oled sina olnud?) - He is a student (= Ta on tðesti üliõpilane.) - 'He is a student (= Just tema on üliõpilane.).

Despite the rhythmic character of E. speech referred to above there may be cases where an utterance consists almost entirely of notional and stressed words. In this way it frequently happens that a number of strong syllables occur consecutively. Thus in the sentence 'John has just bought two large brown dogs' every word would be stressed except 'has', thus: ['jɔn əz 'jʌst 'bɔ:t 'tu: 'lɑ:z] 'braun 'dɔgz], cf. 'Mary came early yesterday morning'.

Unstressed words in a sentence are attached, in pronunciation, either to the following stressed word and are then called proclitics or to the preceding word and are then referred to as enclitics.

At the beginning of a sense-group (see p. 169) unstressed words are adjoined to the following stressed word, i.e. they are proclitics. At the end of a sense-group unstressed words are adjoined to the preceding stressed word, i.e. they are enclitics. In the middle of a sense-group unstressed words may be either enclitics or proclitics, e.g.

He rose without a word, searched for Tom Evans' card, handed it to her.

In this sentence the word 'he' is a proclitic, the words 'it to her' are enclitics, the word 'for' is an enclitic and

the words 'without a' are proclitics.

There is a strong tendency in E. to pronounce unstressed words in the middle of a sense-group as enclitics, e.g. the preposition 'for' in the above sentence. But if unstressed words in the middle of a sentence are semantically closer to the following word, they are pronounced as proclitics, e.g. the words 'without a' in the above sentence. Cf. also the enclitics in 'What are you doing? - I am looking at the garden. - The picture I am looking at. - We live in the country. - The country we live in.

It was stated above that form words may be stressed in certain special cases. The most important of these are the following.

1. Auxiliary and modal verbs as well as the link-verb 'to be', are stressed in the following positions:

(a) At the beginning of interrogative sentences, e.g. - 'Have you heard it? - 'Can you come again to-morrow? - 'Were you at the library yesterday?

(b) When followed immediately by the contracted negation n't, e.g. I haven't enjoyed it. - He couldn't have told it.

(c) When they stand for a notional verb as, e.g. in short answers to general questions, e.g.

Of course I shall. - 'Yes, he has. - 'No, you needn't.

(d) When they follow interrogative words (e.g. 'what, how, when, why', etc.) which lose their stress in emphatic questions expressing anger, surprise, excitement, etc.

What are you doing? - What shall we do?

(e) The auxiliary 'to do' is stressed in emphatic sentences expressing a request, entreaty, petition, etc., e.g.

'Do come again. - 'Do ring me up. - I do want to see him.

2. Monosyllabic and especially disyllabic prepositions are usually stressed when they are followed by an unstressed personal pronoun at the end of a sense-group, e.g.

'No wáter 'in it. - They'll 'see 'into it. - He 'cáme 'after us. - We 'hávè a 'jób 'fór you.

Cf. the final preposition in sentences like 'What are you 'looking at? - 'Who are you 'talking to? - 'What's all the 'fuss about? - 'This is 'worth 'going into.' - are not stressed though they have their full forms (see p. 157).

3. Conjunctions introducing dependent clauses are often stressed when they stand at the beginning of a sentence and are followed by an unstressed word, e.g.

'When he 'comes, I'll intróduce you. - 'As I was 'saying ... - 'After he had 'left, we 'shut the 'gate.

As was pointed out above (p. 151), the stress patterning of E. sentences is largely conditioned by the situation and context in which they occur. It is obviously impossible in a modest handbook like the present one to cover anything like the broad variety of cases possible. The following are some miscellaneous facts about sentence stress which it is necessary for the learner to know.

1. The pronoun 'each' in 'each other' is always unstressed, while the word 'other' is generally not stressed, e.g.

They 'like each other.

2. The prop-word 'one', as in 'good one, every one, black one, etc.', is unstressed:

'Show me the 'other one. - 'Take the 'green one.

3. When the word 'most' does not express comparison, but a high degree of a quality and is equivalent to 'very, extremely', it is not stressed, e.g.

It is a most 'interesting 'book. (Cf. It is the 'most 'interesting 'book I've 'ever 'read.)

4. The word 'good' is usually not stressed in the greetings 'good morning, good evening, good afternoon' when these greetings are said on meeting a person, e.g. Good 'morning, 'Tom! - Good 'evening to you 'all.



On taking leave, however, the word 'good' is usually stressed in the same phrases as well as in 'good night' and 'good-bye'. There is, moreover, in this case a slight rise within the word 'good' and a low rising tone at the end of the whole phrase. E.g. 'Good 'morning. - 'Good afte'rnoon. Cf. below, pp. 198-200.

5. The learner of English should note particularly cases of one word qualifying another. Both the words have as a rule strong stress, e.g. it is 'very 'important; the 'first 'prize, 'Wednesday 'evening, 'Hyde 'Park, my 'native 'town, 'summer 'courses, 'World 'War, the 'Baltic 'Sea.

Estonian learners tend to omit the stress on the second word in many combinations of this kind; they say, for instance, the 'Baltic Sea, 'summer courses, 'all right instead of the correct the 'Baltic 'Sea, 'summer 'courses, 'all 'right.

Where, however, the qualifying word is 'no, so', or 'too' the tendency on the part of non-English people is rather to omit the stress on the first word and to shorten unnecessarily its vowel, e.g. to say 'it was too much' as [ it 'wɔz tu 'mʌʃ ] instead of the correct [ it wɔz 'tu: 'mʌʃ ].

Note. - For some other changes in sentence stress due to rhythmic considerations, see above, pp. 149-150.

## Chapter 8

### STRONG AND WEAK FORMS

#### 1. Introductory

One of the most striking features of E. pron. is the phenomenon known as gradation or reduction, the loss of phonemes or obscuration of vowels in weakly stressed or unstressed syllables. As a result many words in common use have two or more pronunciations - a strong (full) form and one or more weak (reduced) forms. The weak or reduced forms occur only in unstressed positions, the strong or full are used when the words are stressed or uttered in isolation.

The words which have strong and weak forms include form-words and the following pronouns: personal, possessive, reflexive, relative and the indefinite pronoun 'some', denoting indefinite quantity (the emphasizing pronouns and the absolute forms of possessive pronouns have only full forms).

E.g. the weak forms of the auxiliary 'have' [hæv] are [həv], [əv] or [v]; the pronoun 'he' [hi:] has the following reduced forms: [hi·], [hi]; the weak forms of the auxiliary 'do' [du:] are [dʌ], [də], [d].

Words which have weak forms are used in their strong or full forms when they are stressed, e.g. 'He will 'do it (= and not anybody else).

The notional parts of speech (with the exception of the above-mentioned) are usually not reduced in unstressed positions, although there are some compound words in E. in which

the second element has been reduced. Such second elements include -berry, -land, -man, -penny, -pence, -shire, -yard, etc. in, e.g. gooseberry [ˈgʊzbəri], Scotland [ˈskɒtlənd], postman [ˈpəʊs(t)mən], halfpenny [ˈheɪpni], sixpence [ˈsɪks-pəns], Berkshire [ˈbɜːkʃɪə], vineyard [ˈvaɪnjəd] (cf. also the traditional pronunciation of nautical terms, such as fore-castle [ˈfɔːksl], boatswain [ˈbəʊsn], gunwale [ˈɡʌnl], row-lock [ˈrɒlək], leeward [ˈliːwəd], etc.).

Weak forms are generally distinguished from the corresponding strong ones by (1) a difference in the length of a vowel without a change in its quality (quantitative reduction); e.g. you [ju:] - [ju], for [fɔ:] - [fɒ]; (2) a difference in the quality of a vowel (qualitative reduction; consists usually in the substitution of /ə/ for some other vowel in the full form); e.g. at [æt] - [ət], was [wɒz] - [wəz], for [fɔ:] - [fɒ]; (3) the omission of a vowel or consonant or both (zero reduction), e.g. have [hæv] - [əv] - [v], had [hæd] - [d], shall [ʃæl] - [ʃl] - will [wɪl] - [l], must [mʌst] - [mst] - [məs], can [kæn] - [kn], is [ɪz] - [z] - [s].

The proper use of weak forms is essential for a correct pronunciation of E., and is one of the most difficult features of E. pron. for foreigners to acquire. The beginner is apt to read each word as an independent unit and to employ strong forms instead of weak ones where the latter are normal. Such a pron. gives the E. ear the effect that all the unimportant words and syllables are receiving undue prominence. The pronunciation of any of the words listed below (p.157ff.) in their strong forms makes them emphatic and would be abnormal except in formal speech on special occasions.

On the other hand the use of weak forms invariably where strong forms are normal has the effect of turning everything into colloquial E. and may be stylistically incongruous. It should also be remembered that weak forms are used in connected speech said at ordinary conversational speed. The degree of weakening is dependent upon the rate and style of speaking. The weakest forms occur in very rapid

speech. Weak forms do not occur in isolation and their right use depends to a large extent on the way words are grouped together.

E.g. I see him [aɪ 'si:ɪm] in ordinary speech where a distinct [hɪm] would sound emphatic, but if the slightest pause is made between 'see' and 'him', the form [ɪm] becomes offensive.

Cf. How many? [ˈhau 'meni] - How many times have you seen them? [ˈhau mæni ˈtaɪmz (h)əv ju 'si:n ðəm] - I should have thought so [aɪ ʃd v'θɔ:t 'sou] - Is there a letter for me? [ˈɪzðərə 'letə fə mi] - There's a book there [ðəzə 'buk ðeə].

The correct use of weak forms is best acquired by continual reading of texts in phonetic transcription.

## 2. The Use of Strong and Weak Forms of Some Words

There are about sixty words in E. which are mainly used in their weak forms. The following is a discussion of the most common of these words.

1. The definite article 'the' is used in its strong form [ði:] only when referred to in isolation or when used emphatically to single out a person or thing, e.g. The definite article in English is the [ði:]. - Lenin is the [ði:] man who will be gratefully remembered by working people for generations to come.

In all other cases 'the' is used in the weak forms [ði] (before vowels) and [ðə] (before consonants).

2. The indefinite article a (an) is seldom used in its strong forms [eɪ], [æn]. The weak forms are [ə] (before consonants) and [ən] (before vowels).

Note. - The weak forms [ði], [ən] are used before some words spelt with an initial 'h' (see above, p.109).

3. As a rule prepositions are used in their weak forms. The strong forms of prepositions are used (even when the prepositions are unstressed): (a) when the prepositions

stand in a final position or (b) when they are followed by an unstressed personal pronoun at the end of a sense-group or sentence, e.g. What did you go for [fɔ:]?; The man stood looking at him [æt (h)ɪm]: cf. also above, p. 153.

The following are the strong and weak forms of some of the more common prepositions:

Prepositions	Strong form	Weak form(s)
at	[æt]	[ət]
from	[frɒm]	[frəm], [fr̩m]
of	[ɒv]	[əv], [v]
into	[ɪntu:]	[ɪntu], [ɪntə]
for	[fɔ:(r)]	[fɔ·(r)], [fɔ(r)], [fə(r)]
to	[tu:]	[tu:], [tu], [tə]
upon	[əˈpɒn]	[əˈpən]

Note. - The prepositions on, in, with have no weak forms.

4. A number of auxiliary and modal verbs have strong and weak forms.

Verb	Strong form	Weak form(s)
can	[kæn]	[kən], [kn], [kŋ] (before k, g)
must	[mʌst]	[məst], [mst], [məs], [ms]
will	[wɪl]	[l]
shall	[ʃæl]	[ʃəl], [ʃl], [l]
do (aux.)	[du:]	[du·], [du], [də], [d]
does (aux.)	[dʌz]	[dəz]
could	[kʊd]	[kəd]
would	[wʊd]	[wəd], [d] (after personal pronouns)
should	[ʃʊd]	[ʃəd]
have (aux.)	[hæv]	[həv], [əv], [v]
has (aux.)	[hæz]	[həz], [əz], [z] (after vowels and voiced consonants [s] (after voiceless conso- nants)

Verb	Strong form	Weak form(s)
had (aux.)	[hæd]	[həd], [əd]
be	[bi:]	[bi]
been	[bi:n]	[bin]
am	[æm]	[əm], [m]
are	[ɑ:(r)]	[ɑ(r)], [ə(r)]
is	[ɪz]	[z] (after vowels and voiced consonants) [s] (after voiceless con- sonants)
was	[wɔz]	[wəz]
were	[wɛə(r)]	[wə(r)]

Auxiliary and modal verbs, as well as the link-verb 'to be', have their strong forms at the end of a sense-group or a sentence, e.g.

Who is on duty today? I am ([æm]). I don't know where he was ([wɔz]).

5. Many pronouns have both strong and weak forms:

Pronoun	Strong form	Weak form(s)
you	[ju:]	[ju]
he	[hi:]	[hi]
she	[ʃi:]	[ʃi]
we	[wi:]	[wi]
me	[mi:]	[mi]
her	[hə:(r)]	[hə(r)]
us	[ʌs]	[əs], [s]
them	[ðem]	[ðəm], [m]
your	[jɔ:(r)]	[jə(r)]
his	[hɪz]	[ɪz] (in the middle of a sense-group)
such	[sʌç]	[səç]
that	[ðæt]	[ðət] (relative pronoun)
who	[hu:]	[hu] (relative pronoun)

The indefinite pronoun 'some' in the meaning 'certain' has always its strong form [sʌm], even when it is unstressed. When denoting an unspecified quantity, however, 'some' is used in its weak form [səm] or [sm]. Cf. I agree with 'some [sʌm] of what you say. - For some [sʌm] reason he wouldn't answer. - Please give me some [səm] more milk.

Note. - When used as an adjective or adverb the word 'some' is regularly used in its strong and stressed form, e.g. 'Some children learn languages more easily than others. - I've read that story before in some book or other. - I shall be away for some time.

6. Several conjunctions in widespread use have weak forms:

Conjunction	Strong form	Weak form(s)
and	[ænd]	[ənd], [ən], [n]
but	[bʌt]	[bət]
than	[ðæn]	[ðən]
as	[æz]	[əz]
or	[ɔ:(r)]	[ɔ(r)]
that (conj. and rel.pron.)	[ðæt]	[dət]

'That' as a demonstrative pronoun is always stressed and only has a strong form. Notice the distinction between the different forms of 'that' in e.g. It is that [ðæt] that [dət] I require and I know that [ðæt] I shall get it. Here the first 'that' is a demonstrative pronoun (hence the strong form), the second a relative pronoun and the third a conjunction.

7. Some adverbs, particles and miscellaneous other words also have weak forms. The following are the more important of these cases:

Word	Strong form	Weak form(s)
than	[ðæn]	[ðən]
as	[æz]	[əz]

Word	Strong form	Weak form(s)
there	[ðeə(r)]	[ðə(r)]
many	[ˈmeni]	[ˈmni], [mni]
such	[sʌʃ]	[səʃ], [sʃ]
so	[sou]	[so], [sə]
sir	[sə:(r)]	[sə(r)]

Note 1. - The word 'not' has no weak form with the neutral vowel. It can only be reduced to [nt] (spelt n't) in contracted negative forms of auxiliary and semi-auxiliary verbs.

Note 2. - In addition to the prepositions 'on, in, with' mentioned above (p.158), there are some other form-words which have no weak forms, e.g.: 'which, what, where, then, when, how'.

Note 3. - AE has, on the whole, fewer weak forms than BE. Most Americans find RP pron. with its numerous weak forms and reduced vowels sluggish and indistinct.

### 3. Elision

Throughout the known history of E. unstressed vowels have tended to become the weak centralized vowel /ə/. This process is known as reduction. Some vowels and also consonants in unstressed syllables have disappeared altogether. In the latter case we speak of elision and syncope.

It is important to distinguish between cases of reduction and elision which have been established in the lg. for some time (although the spelling may still reflect an earlier, fuller form, e.g. 'time, name, loved, eaten, written, cousin', etc.) and those which have become current only recently. In these latter cases, the forms exhibiting elision and syncope are typical of rapid, colloquial speech, whereas more formal speech tends to retain the fuller form under the influence of the spelling.

In Present-day E. elision may occur 1. word internally and, especially, 2. at (or in the vicinity of) word boundaries.



## 1. Word internal elision.

Thus in the sequence /ə/ + /r/ + weak vowel, in e.g. 'preferable', the first /ə/ tends increasingly to be lost, [fəɹ] being reduced to [fr]: [ˈpɹeɹəbl̩]. Similar reductions affect [ər] following other consonants, e.g. in 'temperature, comparable, territory, temporary, anniversary, dictionary, ordinary, camera, natural'.

Note, too, frequent pronunciations like 'university' [juːnɪvəːsti], 'probably' [ˈprɒbbl̩i], 'difficult' [ˈdɪfɪklt̩], 'government' [ˈgʌvnm̩nt̩], 'parliament' [ˈpɑːlm̩nt̩]. In most varieties of AE such weak vowels and consonants are not elided, the syllables in question often carrying secondary stress, e.g. dictionary [ˈdɪkʃənəri], government [ˈgʌvnm̩nt̩], ordinary [ˈɔːdɪnəri], etc.

In Present-day E. simplification of consonant clusters continues to take place, especially involving the loss of the alveolars /t, d/ when medial in a cluster of three consonants. In the following examples retention of medial /t, d/ is characteristic of careful speech: 'exactly, mostly, handsome, windmill, wristwatch, kindness, restless, landscape, perfectly'.

Cf. also the loss of [θ, ð, l] in the usual pronunciation of asthma [ˈæsmə] and in the rapid pronunciation months [mʌns], clothes [klouz], always [ˈɔːwɪz], all right [ˈɔːraɪt].

Whole syllables may be elided in rapid speech, especially in the vicinity of /r/ or where there is a sequence of /r/-sounds, e.g. library [ˈlaɪbri], February [ˈfebri], literary [ˈlɪtri], meteorological [miːtrɪɔlədʒɪkl̩].

## 2. Elision at word boundaries.

Initial /ə/ is often elided when followed by a sonant or nasal and preceded by a word final consonant, e.g. not alone [ˈnɒt̩ loun], get another [ˈget̩ nʌðə], he was annoyed [hi wəz̩ ʌnɔɪd̩]; or again, when an appropriate vowel precedes, word initial /ə/ may coalesce with the preceding

vowel, e.g. go away [gə:'wei], try again [tra:'ægen] or, when final /ə/ occurs with following linking /r/ and word initial vowel, /ə/ may be elided, e.g. after a while ['d:ftɹə-waɪl], as a matter of fact [əz ə 'mætrɪv,fækt], father and son ['fɑ:ðrən,sʌn].

In addition to the loss of /h/ in pronominal weak forms and other consonantal elisions typical of weak forms, the alveolar plosives are apt to be elided. Such elision seems to occur most readily, in rapid speech, in the sequence spirant + /t/ or /d/ (e.g. /-st, -ft, -ɔ̃t, -nd, -ld, -zd, ɔ̃d, -vd/) followed by a word with an initial consonant, e.g. next day, last chance, just one, left turn, drift by, mashed potatoes, finished late, pushed them, bend back, send round, hold tight, cold lunch, refused both, moved back, etc.

Similarly word final clusters of plosive or affricate + /t/ or /d/ (e.g. /-pt, -kt, -ɔ̃t, -bd, -gd, -jɔ̃d/) may lose the final alveolar stop when the following word has an initial consonant, e.g. kept quiet, stopped speaking; liked jam, parched throat; grabbed them; dragged down; changed colour, urged them, etc.

The /t/ of the negative /-nt/ is often elided before a consonant, e.g. you mustn't lose it [ju 'mʌsn 'lu:z it], doesn't she know? ['dʌzn ʃi 'nou], wouldn't he come? ['wʊdn i ,kʌm].

Clusters of word final /t/ and word initial /t/ or /d/ are sometimes simplified, e.g. I've got to go [aɪv ,gɔtə 'gou], what do you want? ['wɔdə ju ,wʌnt].

The elision of one of a boundary cluster of two consonants sometimes occurs in very rapid speech, but is usually characterized as a vulgarism, e.g. he went away [hi 'wen əwei], I want to come [aɪ 'wʌnə ,kʌm], give me a cake ['gi mi ə ,keɪk], let me come in ['lemi ,kʌm in], get me some paper ['gemi sm peɪpə], as well as the most reduced forms of 'I'm going to take it [aɪm 'gɔnə 'teɪk it]. Note the traditional orthographical rendering of such careless and vulgar pronunciation as 'I wanna come, gimme a cake, I gonna do it', etc., especially in American texts.

#### 4. Liaison

It is usual in connected speech for the linking /r/ forms of words to be used before a vowel, e.g. thanks for everything [fər], my father and mother [ˈfɑ:ðər], the door opened [dɔ:r]. Cf. above, p.117. With some speakers, however, fear of using the intrusive /r/ (see above, p.118) may prevent such liaison, a vowel glide or glottal stop being used, e.g. the door opened [ðə ˈdɔ: ɹəʊpənd] or [ðə ˈdɔ: ʔəʊpənd].

In E. a word final consonant is hardly ever carried over as initial in a word beginning with a stressed vowel. Thus, 'run off, give in, less often, get up, look out' are pronounced [ˌrʌn ˈɔf, ˌgɪv ˈɪn, ˌles ˈɪf, ˌget ˈʌp, ˌlʊk ˈaʊt]. One or two phrases in common use are, however, pronounced with such transference, e.g. 'at home, not at all', being often pronounced [ə ˈtʰəʊm, nɒt ə ˈtʰɔ:l].

#### 5. Juncture

Any account of the word in connected speech must also mention the phenomenon known as juncture. The term refers to the significant boundary, a kind of break, that divides one word or utterance from another in such cases as 'pea stalks - peace talks, a name - an aim, that stuff - that's tough, it slips - its lips, how strained - house-trained, nitrate - night rate, a black tie - a blacked eye, the waiter cut it - the way to cut it', etc. These pairs of utterances consist of the same sounds in the same order, but still they are differentiated so that the hearer is usually able to distinguish them. Thus, the phonemic sequence /pi:stɔ:ks/ (with secondary stress on the syllable containing /ɔ:/) may mean 'pea stalks' or 'peace talks' according to the situation of the word boundaries, i.e. [i:-st] or [i:s-tɔ:]. In this case, if the boundary occurs between /s/ and /t/, the identity of the words 'peace' and 'talks' may be established by the reduced /i:/ (in a syllable closed by a strong consonant) and by the slight aspiration of the

initial /t/. On the other hand, if the boundary occurs between /i:/ and /s/, this may be signalled by the relatively longer /i:/ (in an open word-final syllable) and by the unaspirated /t/ following /s/ in the same syllable, as well as by the stronger /s/. Such phonetic differentiation may be said to be associated with the type of juncture (close or open) which occurs. Thus in 'pea stalks' open (i.e. as before a pause) juncture relates /i:/ to /s/ and close (i.e. as within a word) juncture relates /s/ to /t/, whereas in 'peace talks', close juncture relates /i:/ to /s/ and open juncture /s/ to /t/. Open juncture is attended by a perceptible effect on the duration and quality of the neighbouring vowels and consonants.

In some inventories of E. phonemes open juncture is regarded as a distinct phoneme and represented by the mark /+/ as in 'pea stalks' ['pi:+,stɔ:ks] and 'peace talks' [ˈpi:s+tɔ:ks].

Note. - Some authors (e.g. H. Gleason, Ch. F. Hockett) also use the terms 'open (or sharp) transition' for open juncture and "'muddy" transition' for close juncture.

Opinions differ as to the expediency of distinguishing an open juncture phoneme.

There are weighty arguments for doing so, however. If the two utterances 'pea stalks' and 'peace talks' discussed above were not distinguished on the basis of junctures, it would be necessary to postulate, for instance, a phonemic opposition between the full and reduced forms of /i:/ and between the aspirated and unaspirated types of /t/. This would be hardly advisable in view of the complications it would entail. At the same time it must be admitted that junctural oppositions are frequently neutralized or eliminated, especially in rapid connected speech, or may have such slight phonetic value as to be difficult for a listener to perceive. In other words, such utterances as 'a name - an aim, that stuff - that's tough', etc. are often distinguished mainly with the help of the context in which they

occur. Junctures may, therefore, be said to be considerably less relevant than the phonemic units distinguished by qualities and various stress patterns.

## Chapter 9

### I N T O N A T I O N

#### 1. Introductory

Intonation may be defined as such a complex unity of speech melody (or pitch), force (stress), timbre and rate of utterance which enables the speaker to express adequately the meaning of utterances, his attitude towards their contents and his emotions.

Until some 40 - 50 years ago intonation was more or less neglected by most linguistic scholars on the assumption that it did not vary significantly from lg. to lg., or that anything so "natural" hardly warranted serious consideration.

Recent research suggests that every lg. has a system of basic intonation patterns which is as unique to the lg. as is its set of vowel and consonant phonemes. No sentence is normally spoken without intonation. The intonation may be that of another lg. (in which case the speaker is said to have an accent), but it is always there. The important conclusion from this is that it is not sufficient to be able to pronounce isolated words correctly or to link them properly according to the rules of grammar, but they must also be said with correct intonation.

British phoneticians find that in the case of foreign learners it is far better to have a perfect intonation even if not all the individual sounds are correct than to have

perfect sounds and bad intonation. Faulty intonation is said to give one away immediately as intonation is something more general and settled than the sounds which can vary in the different dialects and variants of E.

E. intonation constitutes an extraordinarily complex system with a heavy communicative burden owing to the essentially analytical system of the lg. Intonation is often employed in E. to convey subtle shades of meaning. Intonation contributes considerably to the total meaning of an utterance, but this is not to say that intonation makes a greater contribution to the whole than do the words and their constructions. Indeed, the intonation without words would give a very vague impression of the total meaning. Nevertheless, it does provide important information which is not contained in any of the other features of utterances, and without this additional information there would be many more imprecisions and ambiguities in E. speech, than in fact there are.

The precise analysis of E. intonation is still a matter of some doubt. The essentials of the subject, however, have been fairly well elaborated and the results presented in a variety of easily accessible sources. The present chapter contains only a brief summary of the most important features of E. intonation. For the details the reader is recommended to turn to, e.g. "Intonation of Colloquial English. A Practical Handbook" (Tartu 1964; rotoprint edition of Tartu State University) or to one of the more complete treatments of the subject in the textbooks listed in the Selected Bibliography (pp. 201-203) under L. E. Armstrong, I. C. Ward, H. Palmer, R. Kingdon, J. D. O'Connor and G. F. Arnold.

Strictly speaking, intonation cannot be learnt from books and mere theory alone. It must be learnt by imitation in the process of listening to and imitating gramophone records and tape-recordings.

For practical purposes it is useful to divide intonation into so-called emphatic and unemphatic. By emphatic intonation is meant a type of intonation which is emotional and serves to intensify, i.e. to make more prominent the

meaning of the whole sentence or of one or more words in the sentence (see below, p. 181ff.).

In actual speech whole sentences as well as separate sense groups constitute units of intonation, i.e. they are said with one or another of the fundamental intonation tunes and their variations (see below, p. 172).

A sense group (also known as a syntagm or syntagma, Est. hääldamisühik, fraseerimisühik) is a number of words (or a single word) forming the shortest possible unit in a sentence from the point of view of meaning, grammatical structure and intonation. It is also possible for a sentence and a sense group to coincide, i.e. for a sentence to consist of only one sense group. In the following examples the sense groups are separated by vertical lines, e.g.:

/He hasn't time/ to do it,/ so he'll leave it/ till to-morrow./

/One autumn morning,/ I was with my mother/ in the front garden/ when Mr. Murdstone,/ I knew him by that name now,/ came by/ on horseback./

The length of sense groups may vary according to the situation and kind of speech being used. For example, in impromptu conversation the sense groups will tend to be larger than these in reading aloud a piece of descriptive prose. Also a slow rate of delivery will favour more and shorter sense groups as compared with a fast rate. Cf. the following:

In April, /June,/ September/ and November/ there are only thirty days./

In April, June, September and November,/ there are only thirty days./

The components of intonation mentioned above (pitch, force, timbre and tempo) are said to form a unity, because they always function together, and none of them can be separated from any of the others in actual speech. Especially close is the connection between speech melody (pitch) and sentence stress. These are the most important and the most thoroughly studied components of E. intonation.



## 2. Methods of Indicating Intonation

It is due to the close connection between speech melody and sentence-stress and to their relatively greatest importance that in the graphical representations of E. intonation now in common use only these components of intonation are actually reflected.

There are several methods of indicating intonation or systems of so-called tonetic transcription. According to one system that is widely used (that of L. E. Armstrong and I. C. Ward) the signs \ and / show respectively that the pitch falls or rises in the stressed syllable so marked. Stressed syllables are marked with a line, and unstressed syllables with a dot. A dash (-) represents a stressed syllable pronounced with level pitch.

These signs are written on staves, i.e. between two horizontal and parallel lines which represent the approximate upper and lower limits of the pitch of the voice in speech, i.e. the range of the voice. Such a graphic representation of the contour of intonation is called a tonogram.

E.g.

The Baltic Sea

— — — — — \

What are you going to do about it?

— — — — — / . . . . .

It should be noted that though the pitch is shown by a series of disconnected marks, the whole of one intonation group is continuous, and might be represented by a continuous line. Such disconnected marks, are used, however, because they are easier for the student to interpret than a continuous line.

The temporal component of intonation can be indicated only as far as pauses are concerned. Two vertical bars or strokes ( // ) denote a long pause, which usually occurs at the end of a sentence. A single vertical stroke ( / ) denotes



### 3. General Characteristics of English Intonation

The inseparable connection between speech melody (pitch) and sentence-stress finds its expression in that each stressed and unstressed syllable in a sentence has a definite pitch.

In ordinary unemphatic E. speech the first stressed syllable in a sentence or sense group is usually pronounced on the highest pitch as compared with the other syllables of the same sentence (sense group).

The stressed syllable of the last prominent word (or so-called nucleus) in a sense group is pronounced with a fall (if the use of the falling tune is required, as in a command) or with a rise (if the sense group requires the use of the rising tune, as in a request).

E.g. 'Sit down. (a command)

'Sit down. (a request)

These two possibilities (a fall or a rise in the nucleus) constitute the basis of the two fundamental intonation tunes of Present-day E., the so-called falling tune and the rising tune. The other intonation tunes of E., e.g. the fall-rise, rise-fall, rise-fall-rise, etc., may be regarded as modifications of these two fundamental tunes.

The stressed and unstressed syllables that follow the first stressed syllable in a sense group form a gradually descending scale until the last stressed syllable is reached.

E.g. 'Come 'in and 'sit down. (a command)

'May I 'come 'in and 'sit down? (a request)

Any final unstressed syllables (i.e. those which may

follow the last stressed syllable or nucleus in the sentence or sense group and sometimes be called the tail) are pronounced in two different ways according to whether the falling tune or the rising tune is required.

1. If the sentence ends with the falling tune, the final unstressed syllables (or tail) are pronounced on the lowest level pitch, e.g.

'Where are you going tonight?

2. If the sentence requires the use of the rising tune, the final unstressed syllables are pronounced with a gradually rising pitch while the preceding last stressed syllable (nucleus) is pronounced on the lowest level pitch. In this case the rising tune is expressed by the pitch of both the nucleus and the tail, e.g.

'Are you going to the theatre tonight?

E. intonation is characterized by a gradual and very steady fall of the voice, the stressed syllables forming a descending scale until the last syllable is reached.<sup>1</sup> In this respect it resembles Est. intonation, which is also generally of the falling type. There is a considerable difference, however, in the treatment of the last stressed syllable and any possible following unstressed syllables. In E. these are said with a rising tune in a number of communicative types of utterances (e.g. general questions, requests) whereas the falling tune is normal in the corresponding cases in Standard Est. The Est. descending scale is not so gradual as the E. one. The general character of Est. intonation consists in the regular alternation of tone levels (upper and medial levels). Stressed syllables are pronounced on a relatively higher level and unstressed syllables on a medial level. The final unstressed syllables of the final sense group are on the lowest level. For a detailed compara-

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<sup>1</sup> For the use of the so-called ascending scale, see below, p. 186.

tive discussion of E. and Est. intonation see П. К. Ваарак, Тонические средства речи, II, Таллин 1964, pp. 36-102.

#### 4. The Use of the Principal Intonation Tunes of English

In view of the extremely broad range and complex as well as flexible nature of the phenomena of E. intonation the present chapter can merely provide a superficial register of the more characteristic uses of the principal tunes. It should be borne in mind that although the basic intonation patterns of RP are fairly stable, there is often room for individual variation depending on the speaker's attitude to the situation in which he is placed. That is why, for instance, different actors can use different intonation patterns when interpreting the same role in a play. Different specialists have different classifications of the intonation tunes and patterns of E. It should also be noted that there are differences in intonation between RP and AE, the intonation of the latter being on the whole, more monotonous.

The following sections of this chapter will review the principal uses of the two fundamental intonation tunes in unemphatic E. and their modifications in emphatic E. A section each deals with the combined use of different tunes in compound and complex sentences with the intonation of parenthetical elements, of direct address and of various other cases.

##### A. English Unemphatic Intonation

The range of the pitch-level in utterances said with unemphatic intonation is not deliberately widened or narrowed. No words in an unemphatic sentence are pronounced with deliberately increased stress. The rate of utterance is not deliberately quickened or slowed down to express any particular emotions.

The tunes used in an unemphatic E. sentence are the

simple falling tune (i.e. not preceded or followed by any rise), the rising tune, and, sometimes, the level tune.

Generally speaking, the falling tune (or Tune 1) expresses affirmation, finality and is definite or categoric in character. The rising tune (or Tune 2) is interruptive, hesitant, expectant and consequently indefinite and non-categoric in character. The level tune is more indefinite and non-categoric than the rising tune. The former is rather rare in colloquial E., being used chiefly when the speaker stops to think, when he hesitates, is indifferent or does not know what to say. The level tune is often used in reciting poetry.

#### Principal Uses of the Falling Tune

The falling tune is used in the following communicative types of sentences:

(1) Statements of fact, either affirmative or negative -

'No.

I 'don't 'think I 'shall.

It's 'time to 'get up.

He'll be 'sure to 'come.

(2) Exclamations -

'How 'lovely!

'So 'late!

'What a 'cold 'day!

(3) Orders, warnings and offers or suggestions -

'Come 'in.

\_\_\_\_\_ )  
\_\_\_\_\_ )

'Stand 'up.

\_\_\_\_\_ )  
\_\_\_\_\_ )

'Stop 'talking!

\_\_\_\_\_ )  
\_\_\_\_\_ )

'Open your 'books at 'page 'five!

\_\_\_\_\_ )  
\_\_\_\_\_ )

'Let's go 'home.

\_\_\_\_\_ )  
\_\_\_\_\_ )

'Let me introduce my 'friend to you.

\_\_\_\_\_ )  
\_\_\_\_\_ )

(4) Special questions (i.e. questions beginning with an interrogative word) -

'Who?

\_\_\_\_\_ )  
\_\_\_\_\_ )

'How 'many?

\_\_\_\_\_ )  
\_\_\_\_\_ )

'How many 'days has he 'been there?

\_\_\_\_\_ )  
\_\_\_\_\_ )

'Who is on 'duty today?

\_\_\_\_\_ )  
\_\_\_\_\_ )

Note. - Special questions used when asking for repetition of a previously made statement that has not been heard properly are said with a rising intonation. For such and other cases of special questions said with a rising intonation see below, p. 177.

### Principal Uses of the Rising Tune

The rising tune is used in the following communicative types of sentences and other cases:

(1) Requests -

'Come 'in.  
— — — — —  
— — — — —  
— — — — —

'Sit 'down.  
— — — — —  
— — — — —  
— — — — —

'Pass me the 'salt, please.  
— — — — —  
— — — — —  
— — — — —

'Stop 'talking.  
— — — — —  
— — — — —  
— — — — —

(2) General questions (i.e. questions beginning with a verb and requiring the answer 'yes' or 'no' -

'Have I 'come 'too 'early?  
— — — — —  
— — — — —  
— — — — —

'Is 'anyone 'absent today?  
— — — — —  
— — — — —  
— — — — —

'Do you 'often 'go to the 'theatre?  
— — — — —  
— — — — —  
— — — — —

He is 'here?  
— — — — —  
— — — — —  
— — — — —

Note. - The last example above is a general question in the grammatical form of a declarative sentence. An ordinary statement of fact would be said with the falling tune. He is here. — — — — — Cf. the difference in intonation between 'Playing 'children — — — — — (as an answer to, e.g., the question 'What can you see over there?') and 'Playing, 'children? — — — — —



- (3) Non-categoric statements, or sentences in which something is implied (doubt, indifference, hesitation, uncertainty, etc.) -

It's 'not so 'bad. (= I thought it was much worse.)

It 'won't take me 'long. (= so you may expect me home soon.)

I think he's busy. (= but I'm not sure.)

- (4) Questions expressing a request to repeat a previously made statement -

'Where do you live? (= I am sorry I could not catch the name of the street, etc.; please repeat it.)

'What kind of a book are you writing? (= I did not hear the beginning of your explanation, please repeat it.)

At 'five? (= Here one of the implications might be: I think you said you would come at five, but I am not sure. Be so kind as to repeat what you said.)

- (5) Special questions expressing (a) a friendly interest in the hearer (e.g. when speaking to a little child) or (b) implying a mild reproach -

(a) 'How 'old are you? (e.g. coaxing) 'What's your 'name?

(b) 'What have you 'done?

- (6) Echoing questions (i.e. questions repeated by the person to whom they are addressed so as to gain time in order to think before answering) -

'What have I 'done?  
— . . . /

'Have I prepared the re'port?  
— . . . — . . . /

- (7) The separate items in an enumeration or series up to, but not including the final item -

'One, 'two, 'three, 'four, 'five.  
/ / / / /

There were 'apples and 'pears and 'plums.  
/ / / / /

'Alice, 'Jack and 'Helen came.  
/ / / / /

Note. - The last item in a series of items is said with a falling tune if no further item is implied and the list is regarded as exhaustive and final. Otherwise the rising tune is used also in the case of the last item, e.g.

There were 'apples and 'pears and 'plums...  
/ / / / /

(implying that there also were some other kinds of fruit.)

### The Use of the Level Tune

As stated above (pp.174-175) the level tune is used chiefly when the speaker hesitates, when he does not know what to say, when he stops to think, or when he speaks to himself without paying any attention to the listener:

I 'don't 'know what to 'do.  
/ / / / /

Perhaps he's 'right.  
/ / / / /

### The Special Rise

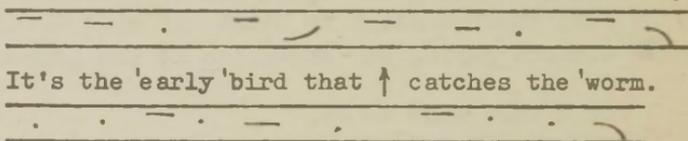
The pitch of the stressed syllables in an unemphatic E. utterance descends gradually from the first stressed syllable to the lowest pitch in the last stressed syllable (see above, pp.172-173). Besides such a normal gradually descending scale, there is the so-called interrupted or broken descending scale in which one of the stressed syllables in the middle of a sense group is pronounced on a higher pitch than the preceding one, and is followed by another descending scale.

Such a rise in pitch-level within a sense group is called an accidental or special rise. It takes place inside a sense group, it does not constitute a tune and does not separate one sense group from another. As a rule the pitch-level of a special rise is never so high as that of the first stressed syllable.

A special rise is always placed on a word or words in the sentence which are especially important, expressing an unusual degree of some quality, very great or very small size, quantity, some extraordinary, unexpected or vigorous action, etc. (examples of such words are: crowd, host; hundreds, thousands; great, enormous, huge, tiny; run, push, shout, etc.).

A special rise is usually indicated by an upward-pointing arrow ↑ before the syllable in which it takes place. As such a syllable is always stressed, the ordinary stress-mark is not used before it.

E.g. 'All 'work and ↑ no 'play 'makes 'Jack a ↑ dull 'boy.



A special rise is sometimes used to prevent the voice from falling to the lowest pitch too soon in a sentence where there are very many stressed syllables. The pitch is moved up at a convenient place, i.e. on an important word, e.g. They 'came to 'call ↑ yesterday 'afternoon.

The broken descending scale forms a kind of link between unemphatic and emphatic intonation.

## B. English Emphatic Intonation

Emphatic intonation is emotional and serves to intensify, i.e. to make prominent the meaning of one or more separate words or of the whole sentence.

All the components of intonation - pitch, stress, timbre and rate of utterance - help to make speech emphatic. Ordinarily these means are employed in combination with one another and with other devices in order to express emphasis. The use of these features makes it possible to suggest an immense variety of implied meaning, only some instances of which can be discussed below.

Thus, a word usually unstressed in an unemphatic sentence (e.g. personal or possessive pronouns, articles, prepositions, etc.) may be made specially prominent in an emphatic sentence. At the same time, words which are usually stressed in an unemphatic sentence (e.g. notional verbs, nouns, adjectives, etc.) become unstressed in an emphatic sentence when some other word is emphatically stressed. Take a simple sentence like the following and notice how the meaning changes with alteration of the stress:

I 'saw him 'leaving by the '9.00 a.m. 'train.

(1) 'I saw him .... (i.e. even if you didn't).

(2) I saw 'him .... (i.e. but not his wife).

(3) I saw him 'leaving .... (i.e. not arriving).

(4) I 'saw him .... (i.e. I wasn't told about it. I saw it with my own eyes).

(5) I saw him leaving by the 9.00 a.m. 'train (i.e. not by bus or ship).

(6) I saw him leaving by the '9.00 a.m. train (i.e. not by an earlier or later train).

Note also cases such as: He is 'the man for the job (i.e. preeminently suited for the job in question). - 'You are responsible for it (i.e. and not somebody else).

A quickening or slowing down of the speed, i.e. the rate of utterance may be used in emotional speech. Thus an emphatic sentence may be said more slowly or more quickly than the corresponding unemphatic one.

Particular emphasis may be given to a particular word in a sentence by lengthening consonants and vowels, e.g.

It's 'marvellous! Here the consonant /m/ in the word 'marvellous' is lengthened deliberately.

Attention should also be drawn in this connection to the use of a glottal stop (see above, p.110) before an initial stressed vowel, e.g.

It's un'eatable [its  $\wedge$   $'i:təbl$ ]

How 'awful [hau  $'ɔ:ful$ ]

The meaning of the whole sentence can be emphasized (1) by raising the pitch-level and widening the range (to express animation, joy, delight, insistence or irritation, anger, etc.) or (2) by lowering the pitch-level and narrowing the range (to express anger, hopelessness, disappointment, sadness, etc. or admiration as well):

Unemphatic

Emphatic

(1) I am 'glad to 'see you.

I am 'glad to 'see you.

I had 'no 'idea it was so difficult.

I had 'no 'idea it was so difficult

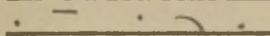
'What a 'lovely 'day.

'What a 'lovely 'day!

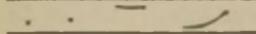
'How 'awful!

'How 'awful!

Unemphatic  
I 'don't believe it.



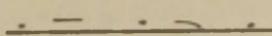
Is it 'worth 'while?



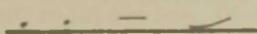
It is 'beautiful.



Emphatic  
I 'don't believe it. (sadness)



Is it 'worth 'while? (hopeless-  
ness)



'Beautiful!



### Tunes Used in Emphatic Speech

The two basic tunes of E. intonation - the falling tune and the rising tune are used in emphatic utterances with different pitch levels and wider or narrower ranges than in the corresponding unemphatic utterances (see above, pp. 174 ff.).

The following tunes are used in emphatic speech:

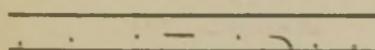
1. the emphatic falling tune
2. the emphatic rising tune
3. the rising-falling tune (rise-fall)
4. the falling-rising tune (fall-rise)
5. the rising-falling-rising tune (rise-fall-rise)

The use of these tunes depends partly on the communicative type of the sentence in which they occur, and partly on the meaning that one wishes to convey.

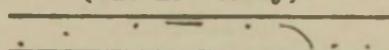
#### 1. The Emphatic Falling Tune (High Fall)

In this tune the voice falls during the word or sense-group from a high to a very low pitch (cf. above, p. 182):

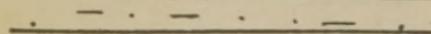
Unemphatic  
I shall return on 'Saturday.



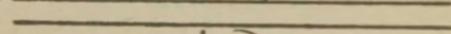
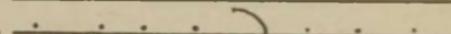
Emphatic  
I shall return on Saturday  
(but not today)



She 'didn't 'ask you to 'go there. She didn't ask 'you to go there.



or



## 2. The Emphatic Rising Tune (High Rise)

In this tune the voice rises from a medium to a high pitch, indicating a questioning attitude, or eagerness, concern, indignation, etc.

E.g.

'Coffee? (questioning: 'Will you have some more coffee?' or 'Did you say coffee?')

You 'did? (incredulous question)

It was 'yours! (dismay)

## 3. The Rising-Falling Tune (Rise-Fall)

In this tune the voice first rises from a fairly low to a high pitch, and then quickly falls to a very low pitch, e.g.:

'Really. (incredulous, sarcastic)

He 'always is. (impatient)

What 'lovely 'weather!

cf. the more prosaic .....

## 4. The Falling-Rising Tune (Fall-Rise)

In this tune the voice first falls from a fairly high to a rather low pitch, and then, still within the word or sense-group, rises to a medium pitch level.

The falling-rising tune expresses contrast, indecision, encouragement, warning, politeness, etc.

E.g.

Unemphatic

Emphatic

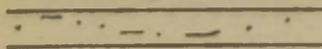
(ordinary statements)

A 'careful 'man.

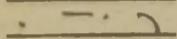
'Careful. (It's dangerous.)

Unemphatic

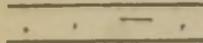
His 'stories are 'rather  
'interesting.



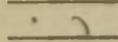
It 'isn't 'bad.



If you 'want to.



Sit 'down.

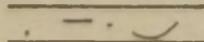


Emphatic

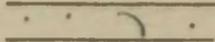
His 'stories are rather  
'interesting.  
(but his novels are boring)



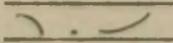
It 'isn't 'bad.  
(So you needn't worry.)



If you 'want to.  
(insistence on 'want', but  
grudging)

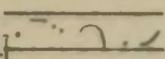
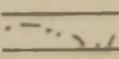


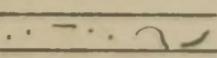
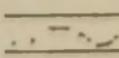
'Do sit 'down.  
(compulsive request)



5. The Rising-Falling-Rising Tune (Rise-Fall-Rise)

An already emphatic syllable may become even more expressive when pronounced with an upward glide and fall occurring within that syllable and followed by a rise in the following stressed syllable. In tonetic transcription the mark  $\sim$  is sometimes used to denote the rise-fall-rise.

E.g. The poem is beautiful!  instead of   
[ðə 'pəʊɪm ɪz  $\sim$ bjʊ:tɪfʊl]

You may 'do it tomorrow.  
(but not today)  instead of   
[ju meɪ 'du: ɪt tə  $\sim$ mɔ:rou]

Other Intonational Means of Emphasis

The so-called scandent and ascending scales may also serve as means of emphasizing a sentence.

In sentences said with the scandent scale medial unstressed syllables ascend from the pitch of the preceding stressed syllable. The scandent scale expresses interest, surprise, irritation, cheerfulness, etc.



Unemphatic

'What a 'funny 'story.

Emphatic

'What a 'funny 'story!

In commands the scandent scale may express encouragement, e.g.

'Try and 'do it 'again.

Questions said with the scandent scale imply disbelief, e.g.

'Did she 'really 'say it? (= I wonder. Probably she didn't.)

In sentences said with the ascending scale the first stressed syllable has the lowest pitch. The following stressed and unstressed syllables gradually rise to form an ascending scale. If the sentence is pronounced with the rising tune, the pitch of the voice continues to rise within the last stressed syllable, emphasizing it. In sentences pronounced with the falling tune the fall has a wide range, which makes the last stressed syllable the most prominent in the sentence.

Unemphatic

I had 'no ídea 'about it.

Emphatic

I had 'no ídea about it.

She 'didn't 'ask you to 'go there. She 'didn't 'ask you to 'go 'there

Note. - The basic tunes of unemphatic intonation and the various simple tunes of emphatic intonation referred to above are often combined into various compound tunes. The meaning of such compound tunes is merely the sum of the meanings of the simple tunes they consist of. It is possible to group together any tunes and their combinations which mean substantially the same. Such groups of tunes all conveying

the same attitude on the part of the speaker are called Tone Groups. The tunes within each tone group have pitch features in common which distinguish them from tunes belonging to any other tone group. Ten such general Tone Groups and their contributions to the total meaning of the utterances in which they occur are given in "Intonation of Colloquial English" (Tartu State University rotoprint edition, Tartu 1964), pp. 17-32.

### C. The Intonation of Sentences Containing More Than One Sense Group

Sentences may often contain more than one sense-group. Complex and compound sentences consist of two or more sense-groups. These groups may constitute various sequences of intonation tunes. In sentences consisting of two sense-groups, for instance, there are the following possible types of sequence of tunes: 1. fall + fall ∩∩; 2. rise + fall ∩∪; 3. fall + rise ∪∩; 4. rise + rise ∪∪. Sentences consisting of more than two sense-groups can have various other patterns of the sequence of tunes.

The following sections deal with some of the more important pertinent cases.

#### 1. Fall + Fall ∩∩

(1) In compound sentences made up of two independent clauses, each of the independent clauses is often pronounced with the falling tune:

I 'talked and 'talked, but he re'fused to 'listen.

We shall 'do our 'best, and I 'think we shall suc'ceed.

(2) Complex sentences containing subordinate clauses placed at the end are usually pronounced with a falling tune followed by another falling tune:

I'll 'show it to you to'morrow, when I 'have 'more 'time.

We 'went 'home 'early, for it was 'getting 'cold.

(3) Appositions that follow a falling intonation group are also pronounced with a falling intonation:

'This is my 'friend, Comrade 'Smith.

Note. - Cf., however, the rising intonation of the apposition after a sense group with a rising intonation, e.g.

'Is 'that 'Jones, the 'poet?

(4) The sequence fall + fall ∩∩ is used in a disjunctive question<sup>1</sup> when the statement made is obviously true and the speaker either wants to arouse his listener's interest or expects the latter to agree with him, e.g.

It's a 'fine 'day, 'isn't it?

'This is our 'bus, 'isn't it?

Note 1. - The sequence rise + fall ∩∩ is used in a disjunctive question when the speaker is less sure of the truth of his statement, e.g.

It's 'not 'too 'late, 'is it?

<sup>1</sup> A so-called disjunctive question is expressed by a sentence combined with a question-tag (negative or positive).

Note 2. - If a disjunctive question is presented more as a real question, the sequence fall + rise  $\overline{\text{f}}\overline{\text{r}}$  would be normal, e.g.

You can 'drive a 'car, 'can't you?

$\overline{\text{f}}\overline{\text{r}}\overline{\text{f}}\overline{\text{r}}\overline{\text{f}}\overline{\text{r}}$

If the remark is made by the speaker in a hesitant manner, the sequence rise + rise  $\overline{\text{r}}\overline{\text{r}}$  (with the second sense-group pronounced on a higher pitch-level than the first) is used, e.g.

You 'haven't 'seen a 'little 'boy here, 'have you?

$\overline{\text{r}}\overline{\text{r}}\overline{\text{r}}\overline{\text{r}}\overline{\text{r}}\overline{\text{r}}$

(5) The sequence fall + fall  $\overline{\text{f}}\overline{\text{f}}$  is usually characteristic of the intonation of so-called short or contracted answers to general questions requiring the answer 'yes' or 'no', e.g.

Do you work at school? - Yes, I do.  $\overline{\text{f}}\overline{\text{f}}$

Did he write the letter yesterday? No, he didn't.

$\overline{\text{f}}\overline{\text{f}}$  or  $\overline{\text{f}}\overline{\text{r}}$

Cf. below, p. 199.

## 2. Rise + Fall $\overline{\text{r}}\overline{\text{f}}$

(1) If the first intonation group is not final or definite, e.g. an adverbial modifier or subordinate clause stands at the beginning of the sentence, we usually have the rising tune followed by the falling tune:

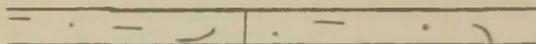
At 'nine o'clock in the 'morning, 'most of the 'shops were 'open.

$\overline{\text{r}}\overline{\text{f}}\overline{\text{r}}\overline{\text{f}}\overline{\text{r}}\overline{\text{f}}$

'If you have 'time to 'listen, I'll 'read it to you.

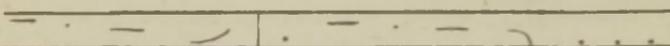
$\overline{\text{r}}\overline{\text{f}}\overline{\text{r}}\overline{\text{f}}\overline{\text{r}}\overline{\text{f}}$

As he 'came 'late, he 'missed the 'train.

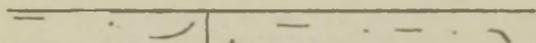


(2) In the case of alternative general questions the first alternative is said with a rising tune, the second with a falling tune:

Is he 'still 'here, or 'has he 'gone 'home already?



'Shall we 'walk or 'shall we 'go by 'bus?



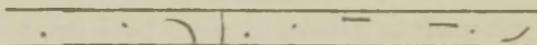
Note. - For the pattern rise + fall  in enumerations, see above, p. 179.

### 3. Fall + Rise

The sequence fall + rise is used, e.g., in the following cases:

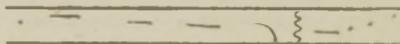
(1) When a more important idea is expressed in the first sense-group than in the second, as in sentences with a reservation that strongly qualifies the preceding statement and makes it less definite. The rising tune on the final sense-group implies a continuation. E.g.

You'll be 'late if you 'don't 'hurry 'up.

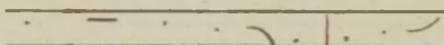


(The implication might be: But if you do hurry up, perhaps you'll be in time.)

I 'don't 'go 'that way 'usually. (But I may try this time.)



I'll 'see you to'morrow if I 'can.



Note. - A common mistake when learning to speak E. is the use of a rising tune in principal clauses before modifying statements such as the ones given above.

The sequence rise + rise ∩∩ may occasionally be met in the same sentences if the speaker wishes to make his statement still more hesitant and the reservation more marked.

(2) Insistent requests expressed by sentences in the imperative mood combined with the question-tag 'will you'. The falling tune in the first sense-group makes the request more insistent. The abruptness of the preceding sense-group is softened by the rising tune in the final sense-group.

E.g. 'Give me a 'knife, 'will you?

— . . . ∩ | — . . . ∩

'Say it a'gain, 'will you?

— . . . ∩ | — . . . ∩

(3) For the use of this sequence in general questions containing a more important and a less important idea, see below, p. 192, Note 1.

(4) For the use of this sequence in disjunctive questions presented more as real questions, see above, p. 189, Note 2.

#### 4. Rise + Rise ∩∩

This pattern is used in such cases as, e.g.:

(1) Non-insistent, polite requests, e.g.

'Come 'on, 'Jim, 'give me a 'hand.

— — . . . | — — . . . ∩

'Will you 'give me the 'book you've 'just 'finished 'reading?

— — — . . . ∩ | . . . — — — . . . ∩



## D. The Intonation of Parentheses

A parenthesis (кильсѡна, -лаузе, вахелерѡице; ввѡдное слово или предложение) is a word, phrase, clause, or sentence inserted into or attached to a sentence and connected with it not by the usual syntactical means of coordination or subordination, but rather semantically, in order: (a) to show the speaker's attitude towards whatever is expressed in the sentence, (b) to connect a given sentence with another one, and (c) to summarize or add some detail to what is said in the sentence. The author's words which follow a sentence in direct speech are treated, as far as their intonation is concerned, in the same way as parentheses.

1. Short phrases of a parenthetical nature at the end of the sense-group, such as 'he said, he asked, she continued, said the man', etc., are pronounced as the final unstressed syllables of the preceding sense-group, e.g.:

"Look here," he said.

"Have you seen him?" she asked.

"Where do you live?" he asked.

"That's a lie!" Lanny shouted.

2. A short parenthesis inserted in the middle of a sense-group breaks it into two groups and is considered part of the preceding group. In this case either the rising or the falling tune may be used, e.g.:



"The 'door," he said, "was 'open."

The 'man, however, 'didn't like it.

"'No," she replied, "you'd be 'wasting your 'time."

Note. - If the author's words in the middle or at the end of a sentence are very important or emotional, they can form a separate sense-group, which may be pronounced either with the rising tune or with the falling tune according to the degree of its semantic importance, but their pitch-level is very low and their tempo is rather quick, e.g.

"'Very 'sorry, sir," 'again repeated the 'landlord; "but we 'really 'haven't got a 'bed 'vacant in the 'whole 'house."

3. Long parentheses are usually split up into separate sense-groups. Such groups have a narrow range of pitch, which never rises very high. The highest pitch of such groups is usually as low or lower than the lowest pitch of the rest of the sentence. Such subgroups of a longer parenthesis are also generally said more rapidly as compared with the sentence in direct speech.

E.g.:

"He 'didn't like my in'quiring," said the man presently 'blowing 'crumbs 'off his 'knees.

The 'man (I 'don't remem'ber his 'name) refused to 'go.

4. When inserted in the middle of the group, parenthetical words and phrases, such as 'therefore, apparently, however, of course, after all, true', etc., break the group into two groups. They may be pronounced as the unstressed final syllables of the first sense-group or made into a separate sense-group.

E.g.

It was, however, 'very difficult.

. - . . | - . . . or . . | . - . | - . .

I mean, of course, in character.

. - . - | - . . . or . - . | - . | - . .

#### E. The Intonation of Direct Address

Direct address is a word or a group of words used to address one or more persons.

The intonation of direct address in E. depends on its semantic importance, which in its turn determines the position of the direct address in the sentence.

1. Direct address at the beginning of the sentence is usually important, often emphatic, in meaning. It is therefore always stressed. The word or words of direct address in such a position form, as a rule, a separate sense-group, which may be pronounced either with the falling or the falling-rising tune.

E.g.

'Harry, 'look at this 'hat.

. . | { - . . . }



3. Direct address at the end of the sentence may be stressed or unstressed according to its semantic importance.

If direct address in this position is not very important semantically, it is usually pronounced as the final unstressed syllable (or syllables) of the preceding sense-group, e.g.

Thank you, comrades.

Is that you, John?

It's a telegram, Mother.

You didn't see anyone else, Mrs. Parker?

If direct address is regarded as semantically very important, it may become the last stressed word of a sense-group and is usually pronounced with the rising tune, e.g.

What's that, Harry?

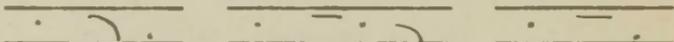
That's all right, Dad.

Have you lifted all the potatoes, Harry?

F. Various Other Cases of Intonation

In this section the following cases of intonation will be considered: 1. greetings, 2. thanks, 3. apologies.

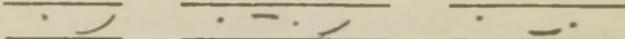
1. The greetings good morning, good afternoon, good evening, etc. are generally pronounced with a falling tune by the first speaker when two or more persons meet, e.g.

Good 'morning.      Good 'afternoon.      Good 'evening.  


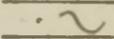
The response to this greeting is normally said with a rising tune, e.g.

Good 'morning.      Good 'afternoon.  


Upon taking leave both the first speaker and anybody who answers him use a rising intonation (probably because this has an implication such as 'I hope to see you again soon', etc.), e.g.

Good-'bye.      Good 'afternoon.      Good 'evening.  


Note 1. - In greetings pronounced on parting the word good may also be stressed; not so, however, in the same formulas used when meeting somebody.

Note 2. - In AE greetings said on parting are commonly pronounced with a fall + rise on the final syllable good-bye, good night as 

2. The words thank you may be said with either a rising or a falling tune depending on circumstances.

The rising intonation in 'Thank you' —· is common when the formula is used without any emotional colouring to acknowledge a customary routine service (e.g. that of a waiter serving at table, etc.). This usual form of 'Thank you' is often reduced to a [ʔk ju] —· or even a mere [kju] —·.

'Thank you' is said with a falling intonation ↘ when acknowledging an unexpected favour or service and is generally not reduced in this case.

An emphatic emotional colouring of very sincere, heartfelt thanks is conveyed by widening the range of the pitch level ↘ (= thank you ever so much).

Note. - The word 'Thanks' can also be pronounced either with a rising tune ↗ or with a falling tune ↘ depending on its routine or more emotional character.

3. The words 'I beg your pardon' are said with a special form of the rising tune (a fall-rise) when a genuine apology is meant, thus, ·↘·—·. The same words are used with an ordinary rising tune when they are used to ask for the repetition of something that has just been said but not properly heard: ·—·—·.

Cf. the apologies

I'm 'sorry (I am 'very 'sorry; I'm 'so 'sorry) with  
·↘· ·—·↘· ·—·↘·

I'm 'sorry meaning 'Would you please say that  
·↘· once more?'

4. The contracted forms which are used in reply to general questions requiring the answer 'yes' or 'no' are usually pronounced with a falling tune (cf. above, p. 189) if they do not contradict emphatically what the previous speaker has said, e.g.

Do you like it? - 'Yes, I do.

You haven't been there before, have you? - 'No, I haven't.

Cf. You don't like it? - 'Yes, I do.

You have been there before, haven't you? - 'No, I haven't.

Note. - Unemphatic contradictory short answers are more commonly said with a falling tune, e.g.

'No, I haven't.

#### C o n c l u s i o n

It has repeatedly been stated above that E. intonation is a very important but also a very complex phenomenon. The subject of E. intonation is much too big a subject to be dealt with exhaustively here. It has been possible to give only a few general hints as to the use of some of the more characteristic intonation patterns of MoE. By way of consolation for the beginner, who may feel hopelessly bewildered by the apparently infinite variety of E. intonation patterns, it should be said that once the proper use of the basic tunes has been mastered, a feeling for the use of the different variations and combinations of these fundamental tunes will come of itself in due course of time as the result of constant listening to and analysis of recordings of genuine E. speech. -

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LIST OF PHONETIC TERMS AND THEIR ESTONIAN EQUIVALENTS

Note. - In those cases where there are variant pronunciations only one is given below. The pronunciation indicated is that which stands first in Daniel Jones' "English Pronouncing Dictionary" (13th ed., London 1967).

accent	[ˈæksənt]	n	rõhk; aktsent
accentual	[əkˈsɛntʃuəl]	a	rõhuline
accentuation	[əkˈsɛntʃuˈeɪʃən]	cf. stressing	n rõhutamine
accidental rise	[ækˌsɪˈdɛntlˈraɪz]	n	hääletooni järsk tõus süntagmas
acoustic	[əˈkuːstɪk]	a	akustiline
acoustic spectrum	[əˈkuːstɪkˈspɛktrəm]	n	akustiline spekter (häälikut moodustavate formantide kogum)
acoustics	[əˈkuːstɪks]	n	akustika
Adam's apple	[ˈædəmzˈæpl]	n	kõrisõlm, aadamaõun
advanced	[ədˈvɑːnst]	a	eespoolne
affricate	[ˈæfrɪkɪt]	n	afrikaat (konsonant, mis koosneb sulghäälikust ja sellega vahetult liituvast homorgaansest ahtushäälikust)
air-passage	[ˈeɪpæsiʃ]	n	õhukanal
air-stream	[ˈeɪstriːm]	n	õhuvool
allophone	[ˈæləfoʊn]	= phonemic variant	
alternative question	[ɔlˈtɜːnətɪvˈkwɛstʃən]	n	valiv küsimus
alveolar	[ælˈvɪələ]	a	hambasompude kaasabil moodustatav, alveolaarne
alveoli	[ælˈvɪəlai]	n	hambasombud, alveoolid (Lat. alveoli)

apex	[ˈeɪpeks]	n	keeletipp, apeks (Lat. apex linguae)
apical	[ˈæpɪkəl]	a	keeletipuga artikuleeritav, apikaalne
articulate	[ɑːˈtɪkjuleɪt]	v	häälikut moodustama, artikuleerima
articulation	[ɑːtɪkjuleɪʃən]	n	kõneorganite töö hääliku(te) moodustamisel, artikulatsioon
articulatory	[ɑːtɪkjulətəri]	a	artikulatsiooniline
artificial palate	[ɑːtɪˈfiʃəl ˈpæləɪt]	n	kunstlik suulagi
aspirated	[ˈæspɪreɪtɪd]	a	hõngatud, aspireeritud
aspiration	[æspɪreɪʃən]	n	hõngus, aspiratsioon
assimilate	[əˈsɪmɪleɪt]	v	assimileerima (sarnaseks muutama)
assimilation	[əsimɪˈleɪʃən]	n	assimilatsioon

#### B

back-advanced	[ˈbækədˈvɑːnst]	a	taga-eespoolne
back-lingual	[ˈbækˈlɪŋgwəl]	a	tagakeele-, postlingvaalne;
		n	keeleselja tagaosaga artikuleeritav häälik, postlingvaal
back of the tongue	[ˈbæk əv ðə ˈtʌŋ]	n	keeleselja tagaos, postdorsum
back vowel	[ˈbæk ˈvauəl]	n	tagavokaal
back wall of the pharynx	[ˈbækˈwɔːl əv ðə ˈfærɪŋks]	n	neelu tagasein
band	[ˈbænd]	n	sagedusriba
bilabial	[baɪˈleɪbjəl]	a	mõlemate huultega artikuleeritav, bilabiaalne;
		n	kaksikhuulhäälik, bilabiaal
binary opposition	[ˈbaɪnəri ɒpəzɪʃən]	n	binaarne opositsioon

blade of the tongue [ˈbleid əv ðə ˈtʌŋ] n keelelaba  
(Lat. corona)  
breath [breθ] n hõngus  
breath-group [ˈbreθgru:p] n hõngusgrupp  
broad transcription [ˈbrɔ:d trænskriptsən] n lihtsustatud transkriptsioon  
bulk of the tongue [ˈbʌlk əv ðə ˈtʌŋ] n keele mass, keele põhiosa

C

cacuminal [kæˈkju:minəl] a tahapoolse pööratud keeleotsaga artikuleeritav, kakuminaalne;  
n tahapoolse pööratud keeleotsaga artikuleeritav häälik, kakuminaal  
cardinal vowels [ˈkɑ:dɪnəl ˈvauəlz] n põhivokaalid, kardinaalsed vokaalid  
cavity [ˈkævəti] n õõs  
central vowel [ˈsentrəl ˈvauəl] = mixed vowel n keskvookal  
click [klik] n lingvo-palataalne imihäälik  
close vowel [ˈkləʊs ˈvauəl] n kinnine vokaal  
closed syllable [ˈkləʊzd ˈsiləbl] n kinnine silp  
closure [ˈkləʊʒə] n sulu moodustamine, implotsioon  
cluster of consonants [ˈklʌstəv ˈkɒnsənənts] n konsonantühend  
colouring [ˈkʌləriŋ] n värving (hääle või hääliku)  
complementary opposition [kɒmplɪməntəri ɒpəzɪʃən] n täiendav opositsioon  
consonant [ˈkɒnsənənt] n kaashäälik, konsonant  
constrictive [kənˈstriktɪv] cf. spirant n ahtushäälik  
contact [ˈkɒntækt] n puudutusala, kontakt  
contour [ˈkɒntuə] n intonatsiooni kujutis

coronal [ˈkɔrənəl] a keeleselja äärmise eesosaga artikuleeritav;  
 n keeleselja äärmise eesosaga artikuleeritav häälik, koronaal

cross-section [ˈkrɒssekʃən] n läbilõige

D

dental [ˈdentl] a dentaalne;  
 n hammashäälik, dentaal

devoice [diːvois] v helituks muutma

devoiced [diːvoɪst] = voiceless a helitu

diacritic(al) marks [daɪəˈkɪtɪk(əl) ˈmɑːks] n eristavad, diakriitilised märgid

diaphragm [ˈdaɪəfræm] n vahelihas, diafragma

diphthong [ˈdɪfθɔŋ] n kaksiktäishäälik, diftong

diphthongize [ˈdɪfθɔŋgaɪz] v kaksiktäishäälikuks muutma, diftongeerima

disyllabic [dɪsɪˈlæbɪk] a kahesilbiline, bisüllaabiline

dorsal [ˈdɔːsl] a keeleseljal moodustatav, dorsaalne;  
 n keeleseljahäälik, dorsaal

drawl [drɔːl] n venitatav hääldamine, etaas

dropping of h's [ˈdrɒpɪŋ əv ˈeɪtʃɪz] n mõnes briti-inglise murdes (eriti koknis) esinev tendents ära jätta sõna algul seisvat h-häälikut

duration [dʒuəˈreɪʃən] = length n vältus, kestus

E

elision [ɪˈliʒən] n elisioon (hääliku kadu kahe sõna kokkupuutekohal)

emphatic [ɪmˈfætɪk] a tunderõhuline, emfaatiline

enclitic	[ inklitik ]	a	enkliitiline;
		n	rõhuta sõna liitumine eelneva sõnaga üheks häälduslikuks tervikuks
epiglottis	[ epiglɔtis ]	n	kõripealis, epiglottis (Lat. epiglottis)
explosion	[ iksplouʒən ] = plosion	n	sulu avamine, eksplosioon

## F

falling	[ 'fɔ:liŋ ]		langev (toon, diftong jne.)
falling-rising	[ 'fɔ:liŋ 'raiziŋ ]	a	langev-tõusev (intonatsioon)
flat	[ flæt ]	a	lame
focus	[ 'foukəs ] (pl. foci [ 'fousai ])	n	sulu või ahtuse moodustumise koht; fookus
forelingual	[ 'fɔ:liŋgwəl ]	a	keele eesosaga artikuleeritav, predorsaalne;
		n	keele eesosaga artikuleeritav häälik, predorsaal
formant	[ 'fɔ:mənt ]	n	formant (hääliku akustilises spektris)
fortis	[ 'fɔ:tis ]	a	tugev, helitu;
		n	tugev, helitu sulghäälik, fortis
fricative	[ 'frikətiv ]	n	hõõrdhäälik, frikatiiv
friction	[ 'frikʃən ]	n	hõõrdeahutus, friktsioon
front of the tongue	[ 'frʌnt əv ðə 'tʌŋ ]	n	keele eesosa (Lat. apex, corona, praedorsum)
front vowel	[ 'frʌnt 'vauəl ]	n	eesvokaal
full form	[ 'ful 'fɔ:m ] = strong form	n	tugev vorm
furrow	[ 'fʌrou ] = groove of the tongue		

## G

- geminate [ˈjɛmɪnɪt] n kaksikkonsonant, geminaat  
 general question [ˈjɛnərəl ˈkwɛsʃən] n kas-küsilause (s.o. küsimus, millele saab vastata sõnaga 'jah' või 'ei')  
 glide [glaid] n diftongi järelkomponent  
 glottal [ˈglɔtɪ] a häälepilule omane või sellega seotud  
 glottal stop [ˈglɔtɪ ˈstɒp] n kõrisulghäälik, järsk alg, larüngaalklusiil (Ger. Knacklaut)  
 glottal tone [ˈglɔtɪ ˈtəʊn] n häälekurdude võnkumisel saadud põhitoon  
 glottis [ˈglɔtɪs] n häälepilu, glotis  
 gradation [grædeɪʃən] n tugevate ja nõrkade vormide vaheldumine olenevalt positsioonist lauses ja hääldamise kiirusest, gradatsioon  
 groove of the tongue [ˈgru:v əv ðə ˈtʌŋ] = furrow n keelevaoke (Lat. sulcus dorsalis linguae)  
 gullet [ˈgʌlɪt] = oesophagus n söögitoru  
 gum [gʌm] n ige (Lat. gingiva)

## H

- half-open vowel [ˈhɑ:f ˈəʊpən ˈvaʊəl] = mid-open vowel  
 hard palate [ˈhɑ:d ˈpæɪlɪt] n kõva suulagi (Lat. palatum durum)  
 harmonics [hɑ:ˈmɒnɪks] = overtones n ületoonid  
 homorganic [hɒmɔ:ˈgæɪnɪk] a sama(de) kõneorgani(te)ga hääldatav, homorgaanne



## I

implosion [im'plouʒən]	n	sulg klusiili hääldamise algusjärgus, implosioon
interdental [intə'dentl]	a	hammastevaheline, interdentaalne
intervocalic [intəvə'kælik]	a	vokaalidevaheline, intervokaalne
intonation [into'neiʃən]	n	intonatsioon
intonation curve [into'neiʃən 'kə:v]	n	intonatsioonikõver
intrusive r [intru:siv 'r]	n	parasiitlik ahtushäälik [r] (vokaaliga lõppeva ja vokaaliga algava sõna vahel)
inverted r [in'vɜ:tɪd 'rə]	= retroflex r	n tahapoole pööratud keeleotsaga artikuleeritav häälik r

## J

jaw [jɔ:]	n	lõug
jaw-breaker [ 'jɔ:breikə ]	n	raskesti hääldatav sõna, fraas jms, fam. keeleväänaja
juncture [ 'jʌŋkʃə ]	n	sõnapiiri signaal, junktuur

## K

key words [ 'ki:wə:dz ]	n	võtmesõnad
kinesthetic [ kaini:s'θetik ]	a	liikumistajumuslik, kinesteetiline
knacklaut [ 'næklaut ]	= glottal stop	
kymograph [ 'kaiməgrɑ:f ]	n	kümograaf (aparaat häälevõngete graafiliseks märkimiseks)
kymographic curves, - tracings [ kaimə'græfik 'kə:vz, - 'treisiŋz ]	n	kümograafilised kõverad

## L

labial [ 'leibjəl ]	a	huultega moodustatav, labiaalne;
	n	huulhäälik, labiaal
labialization [ leibjələi'zeišən ]	cf.	lip-rounding
	n	labialisatsioon
labio-dental [ 'leibjou'dentəl ]	a	alumise huule ja ülemiste hammaste abil moodustatav, labiodentaalne;
	n	huulhammashäälik, labiodentaal
laryngal [ lə'riŋgəl ]	=	laryngeal
laryngeal [ lærin'ʃi:əl, lə'riŋʃiəl ]	a	kõris moodustatav, larüngaalne;
	n	kõrihäälik, larüngaal
laryngoscope [ lə'riŋgəskoup ]	n	kõripeegel, larüngoskoop
laryngoscopy [ læriŋ'gəskəpi ]	n	larüngoskoopia (kõri vaatlemine kõripeegluga)
larynx [ 'læriŋks ]	n	kõri (Lat. larynx)
lateral [ 'lætərəl ]	a	keele külgedel moodustatav, lateraalne;
	n	külghäälik, lateraal
lar [ læks ]	a	nõrk, lõtv, pingetu
length [ leŋθ ]	=	duration
lenis [ 'li:nis ]	a	nõrk;
	n	nõrk häälik, leenis
level stress [ 'levəl 'stres ]	n	kaks võrdselt tugevat rõhku sõnas või sõnaühendis
liaison [ li:'eizɔŋ ]	n	liesoon (eelneva sõna lõpphääliku liitumine järgneva sõna algusvokaaliga)
linking r [ 'liŋkiŋ 'rə ]	n	siduv r (briti-inglise ühiskeeles)
lip [ lip ]	n	huul (Lat. labium)

lip-rounding [ 'lipraundiŋ ] = labialization  
lungs [ lʌŋz ] n kopsud (Lat. pulmones)

#### M

medial [ 'mi:dʒəl ] a kesk-, keskel moodustatav;  
n keskhäälik, mediaal  
medio-lingual [ 'mi:dʒo(u)'liŋgwəl ] a keele keskosaga  
moodustatav, mediolingvaalne;  
n keskkeelehäälik, medioling-  
vaal  
membrane [ 'membrein ] n kile, membraan  
middle of the tongue [ 'midl əv ðə 'tʌŋ ] n keele kesk-  
osa  
mid-open vowel [ 'mid'oupen 'vauəl ] = half-open vowel  
n poollahtine vokaal  
mixed vowel [ 'mikst 'vauəl ] = central vowel  
monophthong [ 'mɒnəfθɒŋ ] n lihtvokaal, monoftong  
monosyllabic [ 'mɒnəsi,læbik ] a ühesilbiline, monosüllaa-  
biline  
morpheme [ 'mɔ:fi:m ] n morfeem (keele väikseim gram-  
matiliselt relevantne üksus;  
võib koosneda ühest või ena-  
mast foneemist)  
mouth [ mauθ ] n suu (Lat. os, oris)  
mouth cavity [ 'mauθ 'kæviti ] n = oral cavity suuõõs  
(Lat. cavum oris)  
muscle [ 'mʌsl ] n lihas, muskel (Lat. musculus)  
muscular tension [ 'mʌskjʊlə 'tensən ] n lihaste pingsus

#### N

narrow transcription [ 'nærou trænskriptsən ] n täpne tea-  
duslik transkriptsioon, milles  
märgitakse eriliselt ka täht-  
samad allofoonid  
narrowing [ 'nærouiŋ ] n kitsenemine, ahennemine

nasal [ 'neizəl ]	a	nina kaasabil kujundatav, nasaalne;
	n	ninahäälik, nasaal
nasal cavity [ 'neizəl 'kæviti ]	n	ninaõõs (Lat. cavum nasi)
nasal consonant [ 'neizəl 'kɒnsənənt ]	n	= occlusive sonant ninahäälik, nasaal
nasal twang [ 'neizəl 'twæŋ ]	n	ini, tugev nasaalsus
nasalization [ neizəlai'zeišən ]	n	nasaalsus, nasaleeri- mine (läbi nina hääldamine)
neutral vowel [ 'nju:trəl 'vauəl ]	n	= schwa (vowel) indiferentne ehk redutseeri- tud vokaal
noise [ nɔiz ]	n	müra
nucleus [ 'nju:kliəs ]	n	diftongi esimene komponent; tuum

O

obstruction [ əb'strʌkʃən ]	n	sulg või ahtus
occlusive noise consonant [ ə'klu:siv 'nɔiz 'kɒnsənənt ]	=	plosive, stop n sulghäälik, klusiil
occlusive sonorant [ ə'klu:siv sənɔ:rənt ]	=	nasal consonant
oesophagus [ i:ʒə'fəgəs ]	=	gullet
open [ 'oupan ]	a	lahtine
open syllable [ 'oupan 'siləbl ]	n	lahtine silp
oral [ 'ɔ:rəl ]	a	suuline, oraalne
oral cavity [ 'ɔ:rəl 'kæviti ]	=	mouth cavity
organs of speech [ 'ɔ:gənz əv 'spi:ʃ ]	n	kõneorganid
oscillation [ ɔsiləiʃən ]	n	võnkumine, ostsillatsioon
oscillogram [ ɔ'siləgræm ]	n	ostsillogramm (ostsillo- graafi abil tehtud üleskir- jutus)
oscillograph [ ɔ'siləgrɑ:f ]	n	ostsillograaf (elektrilisi võnkumisi registreeriv apa- raat)

oscillography [əsi'logræfi] n ostsillograafia (hääldamise uurimine ostsillograafi abil)

overtones ['ouvətounz] = harmonics n ületoonid

P

palatal ['pælətəl] a kõva suulae abil moodustav, palataalne;  
n lagihäälik, suulaehäälik, palataal

palatalization [ˌpælətəlai'zeɪʃən] n peenendamine, muljeerimine, palatalisatsioon

palatalize ['pælətəlaɪz] v palataliseerima (konsonanti peenendama)

palate ['pælit] n suulagi

palatogram ['pælətəgræm] n palatogramm (keele puudutuse jäljend kunstlikul suulael)

palatography [ˌpælətəgræfi] n palatograafia (artikulasiooni uurimine kunstliku suulae abil)

parenthesis [pə'renθəsis] n kiilsõna, -lause, parentees

pharyngeal [fə'riŋgəl] a neeluõõnes moodustav, farüngaalne;  
n neeluhäälik, farüngaal

pharyngeal [ˌfæriŋ'ʃi:əl, fə'riŋʃiəl] a farüngaalne (eeskätt meditsiiniline termin)

pharyngeal cavity [ˌfæriŋ'ʃi:əl 'kæviti] n neeluõõs, faarünks

pharynx [ˈfæriŋks] n neel (Lat. pharynx)

phonematic [ˌfouni'mætik] = phonemic a fonemaatiline (foneemile omane, foneemise puutuv)

phoneme ['founi:m] n foneem (keele fonoloogilise süsteemi väikseim leksikaalset või grammatilist

tähendust eristava funktsiooni-  
ga üksus; eksisteerib konkreet-  
selt mingi hääliku või hääliku-  
ühendi, eri keeltes tõenäoliselt  
ka rõhu, helikõrguse, värte,  
junktuuri jne. kujul)

phonemic [fo(u)'ni:mik]= phonematic a foneemaatiline  
(tarvitatakse ka laiemas tähen-  
duses: fonoloogiline, funktsio-  
naalselt tähenduslik, tähendust  
eristav)

phonemic variant [fo(u)'ni:mik 'vɛəriənt]= allophone n  
foneemi (positsiooniline)  
variant, allofoon

phonetic(al) [fo(u)'netik(əl)] a foneetiline

phonetician [fo(u)ne'tiʃən] n foneetik

phonetics [fo(u)'netiks] n foneetika (keele hääliku-  
list ehitust ja hääldamist ter-  
vikuna käsitlev keeleteaduse  
osa)

phonograph ['fo(u)nəgrɑ:f] n fonograaf (aparaat helide  
ülesmärkimiseks ja edasiandmi-  
seks)

phonological [fo(u)nə'lɔ:dʒikəl] a fonoloogiline

phonology [fɔ'nɒləʒi] n fonoloogia (õpetus foneemidest  
ja nende funktsioonidest)

pitch [piç] n helikõrgus

place of articulation ['pleis əv ɑ:tikju'leiʃən]  
n artikulatsioonikoht

plosion ['plouzən] = explosion n sulu avanemine

plosive (consonant) ['plousiv (kɒnsənənt)]= occlusive noise  
consonant, stop n sulghäälik

polysyllabic [pɒlɪsɪlɪæbɪk] a mitmesilbiline

position [pə'ziʃən] a asend

post-alveolar ['poustæl'viələ] a hambasompude taga moo-  
dustatav, postalveolaarne

post-dental [ 'pous(t)'dentl ]	a	hammaste taga moodustatav, postdentaalne
primary stress [ 'praɪməri 'stres ]	=	principal stress n pearõhk
principal stress [ 'prɪnsɪpəl 'stres ]	=	primary stress
proclitic [ pro(u)'klɪtɪk ]	a	prokliitiline;
	n	rõhuta sõna liitumine järgneva sõnaga üheks häälduslikuks tervikuks
progressive assimilation [ prə'ɡresɪv əsɪmi'leɪʃən ]	n	progressiivne assimilatsioon
pronounce [ prə'naʊns ]	v	hääldama
pronunciation [ prənʌnsi'eɪʃən ]	n	hääldamine
prosodic [ prə'sɒdɪk ]	a	prosoodiline, suprasegmentaalne (vältuse, rõhu või tooniga seotud)
protrude [ prə'tru:d ]	v	ette või välja ulatama (näit. huuli)
protrusion [ prə'tru:ʒən ]	n	ette- või väljaulatumine

Q

question-tag [ 'kwɛstʃəntæg ] n eks-küsimus

R

range [ reɪnʃ ] n ulatus, amplituud

rarefaction [ rɛəɪfə'kʃən ] n hõrenemine

Received Pronunciation [ ri'si:v dɪ prənʌnsi'eɪʃən ] n briti-  
inglise ühiskeelee hääldamine

recessive stress [ ri'sesɪv 'stres ] n retsessiivne (s.o. sõna algusele ülekanduv) rõhk

record [ 'rekɔ:d ] n heliplaat

record [ rɪkɔ:d ] v heli salvestama

recording [ri'kɔ:diŋ]	n	heli salvestamine, heli-salvestus
reduction [ri'dʌkʃən]	n	hääliku hääldamise nõrge-nemine, reduktsioon
regressive assimilation [ri'gresiv əsimi'leiʃən]	n	regres-siivne assimilatsioon
release [ri'li:s]	n	sulu avanemine (klusiili artikuleerimisel), eksplo-sioon
resonance ['rezənəns]	n	resonants
resonance chamber ['rezənəns 'tʃeimbə]	n	= resonatar resonaator
resonator ['rezəneitə]	= resonance chamber	
retroflex r ['retro(u)fleks 'rə]	= inverted r	
rhythm [riðm]	n	rütm
rhythmic stress ['riðmik'stres]	n	rütmiline rõhk
rim of the tongue ['rim əv ðə 'tʌŋ]	n	= side rim keeleserv
rise [raiz]	n	tõus
rising ['raiziŋ]	a	tõusev (toon, diftong jne.)
rising-falling ['raiziŋ 'fɔ:liŋ]	a	tõusev-langev
rolled sound ['rould 'saund]	n	= trilled sound värihäälik, tremulant
root of the tongue ['ru:t əv ðə 'tʌŋ]	n	keelepära, keele-juur (Lat. radix linguae)
rounded ['raundid]	a	ümardatud huultega artikuleeritav
Romic ['roumik]	n	teatud tüüpi foneetilise transkriptsiooni nimetus
Röntgen rays ['rɒntʃən 'reiz]	n	= X-rays röntgenikiired
röntgenogram [rɒnt'genəgræm]	n	röntgeniülesvõte, röntgenogramm
röntgenography [rɒnt'genəgræfi]	n	röntgenograafia (röntgeniülesvõtete tegemine)



## S

- sandhi [ 'sændhi: ] n sõna lõppnaaliku ja järgneva sõna algushääliku vastastikune mõjustus, sandhi
- schwa (vowel) [ šwɑ: ( 'vauəl ) ] n = neutral vowel indifferentne vokaal, švaa
- secondary stress [ 'sekəndəri 'stres ] n kaasarõhk
- segmental phoneme [ segmentəl 'fo(u)ni:m ] n segmentaalne foneem
- semi-consonant [ 'semi'kɒnsənənt ] n = semi-consonant poolkonsonant
- semi-vowel [ 'semi'vauəl ] = semi-vowel poolvokaal
- sense-group [ 'sensgru:p ] n = syntagma mõtteline ühik, süntagma
- sentence stress [ 'sentəns 'stres ] n lauserõhk
- sequence [ 'si:kwəns ] n järjestus, rida, sari
- sibilant [ 'sibilənt ] n sisihäälik, sibilant
- side rim [ 'said 'rim ] = rim
- soft palate 'soft 'pælit ] n pehme suulagi (Lat. palatum molle, velum palati)
- sonagram [ 'sɒnəgræm ] = spectrogram
- sonagraph [ 'sɒnəgrɑ:f ] n = sound spectrograph sonagraaf
- sonant [ 'sɒnənt ] n silbikandja, sonant
- sonority [ sɒ'nɒrɪtɪ ] n helilisuus, sonoorsus
- sonorous [ sɒ'nɒ:rəs ] a heliline, sonoorne
- sound [ saund ] n heli (Lat. sonus)
- sound spectrograph [ 'saund 'spektrəgrɑ:f ] n helispektrograaf (hääliku akustilist spektrit esitav elektrooniline aparaat)
- sound spectroscopy [ 'saund spek'trɒskəpi ] n helispektrograafia (häälikute uurimine helispektrograafi abil)

special question	['speʃəl 'kwesʃən]	n	küsisõnaline lause (s.o. küsimus, millele ei saa vastata ainult sõnaga 'jah' või 'ei')
spectrogram	['spektrəgræm]	n	spektrogramm (helispektrograafi abil saadud graafiline kujutis hääliku või häälikuühendi akustilisest spektrist)
spectrum	['spektrəm]	n	= acoustic spectrum spekter
speech	[spi:ʃ]	n	kõne
speech sound	['spi:ʃ 'saund]	n	kõnehäälik
speech synthesizer	['spi:ʃ 'sinθisaizə]	n	kõnesünteesimisaparaat, kõnelemismasin
spirant	['spairənt]	n	ahtushäälik, spirant
spread	[spred]	a	avatud
stop	[stɒp]	n	= occlusive noise consonant, plosive consonant sulghäälik, klusiil
stress	[stres]	n	rõhk
		v	rõhutama
stressed	[strest]	a	rõhuline
stressing	['stresɪŋ]	n	cf. accentuation rõhutama
			mine
strong form	['strɒŋ 'fɔ:m]		= full form
supra-glottal	['sju:prə'glɒtl]	a	kõrist kõrgemal asuv
suprasegmental phoneme	['sju:prəseg'məntəl 'fəʊni:m]	n	suprasegmentaalne e. prosoodiline foneem
syllable	['siləbl]	n	silp
syntagma	[sin'tægmə]	n	= sense-group süntagma

T

tamber	['tæmbə]	n	= timbre kõlavärving, tämber
tape-recorder	['teɪpri 'kɔ:də]	n	magnetofon

tense [tens]	a	pingutatud
timbre ['tæmbə]		= tamber
tip of the tongue ['tip əv ðə 'tʌŋ]	n	keeletipp (Lat. apex)
tone [toun]	n	cf. <b>tune</b> (intonatsiooni) toon
tonetic [tou'netik]	n	toneetiline, intonatsiooni tooni(desse) puutuv
tongue [tʌŋ]	n	keel (Lat. lingua)
tonogram ['tɒnogræm]	n	tonogramm (intonatsiooni graafiline kujutis)
trachea [træ'kiə]	n	= windpipe hingetoru (Lat. trachea)
transcription [træns'kripʃən]	n	transkriptsioon
trilled sound ['trild 'saund]	n	= rolled sound värihäälik, tremulant
tune [tju:n]	n	= tone intonatsiooni toon
twang [twæŋ]		= nasal twang

#### U

unemphatic [ˈʌnim'fætik]	a	mitte-emfaatiline
unstressed [ˈʌn'strest]	a	rõhutu, mitterõhuline
utterance [ˈʌtərəns]	n	lausung
uvula ['ju:vjələ]	n	kurgunibu (Lat. uvula)
uvular ['ju:vjələ]	a	nibuga kujundatud, uvulaarne

#### V

variant ['vɛəriənt]	n	teisend, variant
velar ['vi:lə]	a	pehme suulae abil kujundatav, velaarne;
	n	purihäälik, velaar
velum ['vi:ləm]	n	pehme suulagi (Lat. velum)

vibrate	['vaibreit]	v	võnkuma, vibreerima
vibration	[vaibreišən]	n	võnkumine, vibratsioon
vocal c(h)ords	['vokəl 'kɔ:dz]	n	häälekurrud, -paelad (Lat. cordae vocales, labia vocalia)
voice	[vɔis]	n	häääl, heli
voiced	[vɔist]	a	heliline
voiceless	['vɔislis]		= devoiced
volume	['vɔljum]	n	maht
vowel	['vaueł]	n	täishäälik, vokaal

W

weak form	['wi:k 'fɔ:m]	n	rõhutu vorm
whisper	['wispə]	n	sosin
windpipe	['windpaip]		= trachea
word-stress	['wɔ:d 'stres]	n	sõnarõhk

X

X-ray apparatus	['eksrei æpə'reitəs]	n	röntgeniaparaat
X-rays	['eks'reiz]		= Röntgen rays

О. Мутт

ВВЕДЕНИЕ В ФОНЕТИКУ АНГЛИЙСКОГО ЯЗЫКА  
ДЛЯ ЭСТОНЦЕВ

Издание второе

На английском и эстонском языках

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