

Introduction to Phonetics

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Preface

The title of this book, *Introduction to Phonetics*, may be taken literally. It introduces the student to phonetic modes of thought and to phonetic symbols, and it uses phonetic nomenclature in describing the principal varieties of the English language in America and the British Isles.

Introduction to Phonetics is a practical book. It is also a highly eclectic book. Its eclecticism lies in part in its plan of selection from the informational and theoretic material available. As of this date, such selection is a matter for much thought. In the days of Franklin, Ellis, and Bell, and of Sweet, Passy, and Viëtor, the known items of phonetic information seemed very final and were certainly very sparse; nowadays little information can be trusted to be final and the items are certainly not sparse. Instead, there is a welter of many kinds of information: the theories of de Saussure, Trubetzkoy, and Bloomfield have burst upon us; and the X-ray, slow-motion photography, and the spectrograph have heaped their findings before us. With this great wealth of material at hand, writing on any phase of phonetics has become a difficult undertaking, and, critical opinion being what it is, a dangerous one.

Of the phases of study suggested above, this book contains selected material somewhat as indicated in the following list:

1. *Anatomy*. Confined to the gross features that can be comprehended from pictures, charts, models, and discussions.
2. *Physics*. Confined to information that is demonstrable by illustrations, drawings, and simple apparatus.
3. *History of the English language*. Very little.
4. *The phoneme*. The phonemic concept is used many times, as required. Any impulse to use extensive phonemic transcription, however, is herein firmly resisted; the purposes of this book are better served by phonetic transcription.
5. *Close transcription*. This book avoids the overweening specificity of too great a clutter of diacritics and special phonetic symbols. The transcription undertakes to strike a usable mean between the extremes of generalization and particularization.
6. *Instruments*. The new instrumentation is referred to, but sparingly, since the emphasis of this book is on practical phonetics.

7. *Sounds in isolation vs. sounds in context.* The differences between sounds in isolation and sounds in context are recognized, but for the most part it is necessary herein to discuss sounds in their isolated forms.

8. *Standards of correctness.* All educated people recognize standards of correctness in personal practice—even those who affect to scorn them in principle. Such contradicting attitudes must surely arise from confusion between the functions of phonetics *per se*—that is, general phonetics, which has no opinions on correctness—and the functions of applied phonetics, which is regularly used as an instrument for inculcating standards of speech. This book describes both standard and substandard speech. Despite all attempts to find out what is believed to be acceptable generally, there will be some statements reflecting the writer's own practice or predilection. These are certain to differ with the practices, predilections, or perhaps the more accurate knowledge of some other people. We shall doubtless hear from these people, often with profit. Any statement concerning standard or substandard speech runs the risk of being called *prescriptive*—a term of negative, even scornful, connotation. But those who insist that what is called substandard is actually as “standard” as what is called standard are being prescriptive too. Perhaps the two prescriptions will balance each other.

In the printing of *Introduction to Phonetics*, use has been made of plates from the author's larger and more advanced work, *Applied Phonetics*. For this reason, several references to pages from the larger work appear in this book, although the pages do not actually appear here.

Baton Rouge, La., 1958

C. M. WISE

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The advice of these scholars was usually heeded, but it would be unfair to hold them responsible for my interpretation of the material or for omission of this or that specific item; the responsibility, of course, is mine.

Credit is also due the faithful people who have for years sustained the arduous task of typing and retyping so detailed a work. Particular credit must go to Roberta Fluitt White, Ernestine Heard Jensen, Edith Holloway Stevens, Dr. Lynn Earl Orr, Leborah Alfonso Carnovale, Parsy Heidt Grubbs, Dr. Albert Donald George, Dr. Clinton William Bradford, and Dorothy Holbrook.

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PART ONE

CHAPTER 1

The Purpose of This Book

Stated in the broadest possible terms, the purpose of this book is expressed in the following outline:

To introduce the student rapidly to the use of the International Phonetic Alphabet (IPA) as a tool applied to English.

To explain the more important characteristics of

General American speech.¹

Standard.

Substandard.

Southern American speech.

Standard.

Substandard.

Eastern American speech.

Standard.

Substandard.

Standard Southern British speech.

¹ The designations General American, Southern, and Eastern for the great English speech regions of North America are those common to the phonetic literature of the past half-century. The term General American does not mean general for the whole area, but belongs rather to that area not designated Southern or Eastern. (See full discussion, Chapter 6.) All three terms refer to pronunciation rather than to word selection or syntax. Hans Kurath, in *Word Geography of the Eastern States* (Ann Arbor: The University of Michigan Press, 1949), a book on word selection, not pronunciation, uses the terms Northern, Midland, and Southern. (See discussion, Preface, q. v., and Chapter 11, pp. 11ff.) Kurath's excellent maps trace word boundaries from the coast inland approximately to the western edge of the Appalachians. The boundary between Northern and Midland has since 1949 been continued, though with less definiteness, across northern Pennsylvania, central Ohio and Indiana, and a part of south-central Illinois. Until such boundaries have been projected as far west as possible, and attested throughout in terms of pronunciation as well as lexicon, it seems necessary to continue using the already established names for the speech areas of the country as a whole. The older boundaries can, of course, be corrected as newer information is available. (See Chapter 6.)

Persons for whom this book is intended. The information imparted in the pursuit of these purposes is intended primarily to be useful to any speaker of a standard American or British dialect; and to teachers, speech correctionists, actors, play directors, interpretative readers, radio and television speakers, and all others to whom information on dialects would be valuable. Secondly, it is intended that the material of the book be of service to foreign students of English, and to students of the phonetic aspect of contemporary languages in general.

The book has been thoroughly tested as a text in phonetics for college students. It is designed to be completed in one semester or two quarters. The key word lists for foreign languages, pages 25–30, are intended for comparison and reference only, as are the non-English symbols in the IPA chart, page 31.

Limitation of scope of this book. As stated in the preface, this work does not permit itself extensive excursions into linguistic history, phonemics, or even theoretic or pure phonetics. Such references as are made to these and related fields of thought are intended only to support the aim epitomized in the title, *Introduction to Phonetics*.

Intentional delay in presenting most phonetic theory, technical nomenclature, and definitions. It is important to note that most of the theoretic material and technical nomenclature included herein, as well as many of the definitions, are delayed until enough of the phonetic alphabet has been presented to constitute a vocabulary for discussion and illustration. This is not the usual arrangement; but it has been found rewarding, in that each item of information is seen to be serviceable when it finally appears.

Students are particularly gratified when they are not asked to use, or even to read, phonetic symbols to which they have not been formally introduced. The progressive introduction of an exclusive few symbols at a time greatly facilitates the orderly learning of the phonetic alphabet, which, though it need not be a serious task, sometimes becomes one when approached in some other fashion.

CHAPTER 2

Sounds and Symbols

A Preliminary View of the Sounds of English and the Phonetic Symbols Representing Them

The need for a phonetic alphabet. It has become traditional to explain the need for a phonetic alphabet by calling attention to the inconsistent spelling of most languages. These inconsistencies are indeed bewildering. They take two opposing forms: (1) the representation of the same sound by a variety of spellings, and (2) the use of the same spelling for a variety of sounds. For illustration of (1), observe the following list, where each line shows the same sound spelled in a different way. (Beginners may disregard the phonetic symbols until after finishing the chapter.)

English [ei]: *name, nay, break, braid, eight, they.*

German [i]: *Igel, ihn, viel.*

Norwegian [ɔ]: *klokke, Aase, åtte.*

French [ɛ]: *chaise, reine, cette.*

Spanish [b]: *voz, boca.*

Italian [k]: *che, casa.*

Portuguese [ʒ]: *gerais, jota.*

Russian [ʃ]: *шар, мой.*

For illustration of (2), observe in the following that each line shows the same letter representing a different sound:

English: *cold* [ou], *cot* [ɑ, ɒ], *corn* [ɔ], *prove* [u], *love* [ʌ], *woman* [u], *women* [ɪ].

German: *ich* [ç], *ach* [x], *wachsen* [k], *schön* (*sch* = [ʃ]).

Norwegian: *gud* [g], *gifte* [j].

French: *donner* [ɛ], *femme* [a], *le* [ə], *client* (*en* = [ɑ]).

Spanish: *cerrar* [s, θ], *cada* [k], *chico* (*ch* = [tʃ]).

Italian: *specie* [s], *sgelare* [z].

Portuguese: *cama* [k], *cinco* [s], *chapeu* (*ch* = [ʃ]).

Russian: *хорошо* [ə-a-ɔ].

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.¹ Such an alphabet is the IPA, or International Phonetic Alphabet, to be taken up a few paragraphs farther on.

The need for a consideration of speech sounds as such. Even greater than the need for a simple, consistent alphabet is the need to consider speech sounds as such, apart from symbols. A speech sound² is an entity in itself, entirely separate from any letter or letters representing it. It comes first both phylogenetically, i.e., in the development of the race; and ontogenetically, i.e., in the development of the individual. The symbol is an afterthought, growing out of the need (before telegraph, telephone, or radio) to communicate at a distance, either in time or space.

But in our modern educational experience, we often confuse sound and symbol, and we fail to separate sound combinations or complexes into their individual parts. A written or printed word becomes a unit configuration recognized as a whole, and we take no thought of its components, either functional or non-functional. For silent reading this is as it should be, but not for accurate or perfected speech. It may not usually be realized, for example, that of the six letters in *knight*, only three are pronounced, viz., *n*, *i*, and *t*, and that, paradoxically, two of the four sounds in the word as pronounced are represented in the spelling by only one letter, the letter *i*. But this is true, and from the viewpoint of developing good audible speech it must be realized.

Observations on "Silent" Letters in English

English orthography (spelling) is characterized by the presence of numerous unused letters, many of which were formerly pronounced and, as in the case of the *t* in *listen* ['lɪsn̩], have been carried along in the spelling after their day of usefulness was past. Others have been added by analogy, as when Middle English (ME) *delit* was respelled *delight* by analogy with *light*. Still other words had extra letters added as a kind of learned gesture; for instance, the Old French (OF) loan word *dette* was respelled *debt*, as if it had been borrowed directly from the Latin *debitus* instead of from the OF.

In the case of loan words, some of the currently silent letters have never been pronounced in English; for example, *p* in *pneumonia*.

¹ Later to be explained as either one *phone* (sound) per symbol or one *phoneme* (to be discussed) per symbol, according to the requirements of a given time. As is the usual custom, phonetic symbols in this book will be enclosed in square brackets, [], and phonemic symbols in diagonals or virgules, / /.

² The distinction between a speech sound from the point of view of physics and from the point of view of psychology will be made later.

Exercise

Show that the word *reading* has two more letters than sounds.

Show that the word *cure* has one unpronounced letter, yet allocates two sounds to one of the letters.

Show that the words *mints* and *mince* may be pronounced exactly alike.

Show that the word *through* contains only three sounds.

If any statement in the exercise above does not seem reasonable or self-evident, it is of no great matter at the moment. It merely demonstrates that sound and spelling many times disagree, and that the beginner often finds it difficult to isolate the sounds in a word. Once the concept of each sound as a separate entity is established, it will soon become clear that every statement in the exercise is quite accurate. The development of sensitivity to sound, so that the speaker can be conscious of what he utters, can compare the sounds he uses with those of other people, and can contrast the sounds of his language with those of other languages, is a paramount need in the life of every educated person.

Definition of phonetics. The developmental process envisioned above involves an activity which could very well be called the study of phonetics. Since phonetics ordinarily disregards non-significant sounds, and since this developmental process is essentially a process of abstracting from the continuum of what we call "speech sounds" the individual fractions of sound which have significance, we may say that *applied phonetics is the study of significant speech sounds*. Such a study recognizes, but does not deal at length with, the following in sequence: (1) stimuli to the nervous system; (2) neural response; followed by (3) muscular action of frequently very generalized nature, but typically centered in what are called the organs of speech; (4) resultant sound waves, (a) in the air, (b) in the tympanum of the listener's ear, (c) in the ossicular chain of the middle ear, (d) in the endolymph of the cochlea; (5) nerve current to the brain, interpreted there as acoustic phenomena (speech as heard). Phonetics may be redefined as a study of (3) above, the action of the vocal organs in speech, and of (5) above, speech sounds as heard. (Chapter 3 gives minimal details relating to this definition.)

The International Phonetic Alphabet. The IPA is one of many alphabets which have been devised to fill the needs we have indicated. One such alphabet was invented (*circa* 1867) by Alexander Melville Bell (1819–1905), of Edinburgh, Scotland (later of Washington, D.C.), father of the inventor of the telephone, Alexander Graham Bell (1847–1922). Alexander Melville Bell called his alphabet *Visible Speech*.³ *Visible Speech* had the remarkable quality of showing by the

³ Cf. Henry Sweet, *Primer of Phonetics*, Second Edition (Oxford: The Clarendon Press, 1902), pp. 1–88. The symbols used on page 8 are those of the Organic (revised *Visible Speech*) notation. Cf. also *Handbook of Phonetics* (Oxford: The Clarendon Press, 1877).

structure of its symbols the most important facts concerning how the sounds are produced. The words *Visible Speech* in Bell's alphabet follow.⁴

≧fʒf·θw sɒfʌʊz

This alphabet is still used in some schools for teaching the deaf.

The forbidding, unfamiliar appearance of *Visible Speech* induced Henry Sweet (1845–1912), a British phonetician and a pupil of Bell, to devise an alphabet on the basis of the more familiar Latin or Roman alphabet. Sweet called his alphabet *Romic*, which he used in two forms, *Broad Romic* and *Narrow Romic*.⁵ Here are the words *Broad Romic* in Sweet's alphabet: [brəd 'roumik]. In 1886, when the International Phonetic Association was founded, it based its alphabet on *Broad Romic*. The IPA, with remarkably few modifications, is still in use, and is employed by more people than is any comparable alphabet. It may be found in many books and in many scholarly periodicals, among which is the official organ of the International Phonetic Association, *Le Maître Phonétique*.⁶

The identity of many IPA symbols with orthographic symbols. Many of the IPA symbols are identical with the orthographic symbols used as the letters of ordinary spelling. This fortunate situation greatly facilitates rapid learning of the alphabet. Some sixteen of the letters of the English orthographic alphabet, taken in their most common interpretation, are identical with an equal

⁴ Other alphabets of early date (Cf. Alexander J. Ellis, *Early English Pronunciation*, E.E.T.S. Extra Series, Parts I and II, pp. 31–48): (a) Those attempted by Orm (circa 1200); Sir Thomas Smith, John Hart, William Bullokar (16th Century); Alexander Gill, Charles Butler, John Wilkins (17th Century). (b) That of James Buchanan (1776); also of Benjamin Franklin (1706–1790), who in 1768 devised a reformed spelling alphabet that was essentially phonetic. (He would have transcribed his own name as [bendʃamin franklin].) Cf. Jared Sparks, *The Works of Franklin*, Vol. VI, pp. 295–303; also C. M. Wise, "Benjamin Franklin, Phonetician," *Speech Monographs*, 1948. (c) That of S. S. Haldeman (1860); also of Alexander J. Ellis, called Paleotype. (Ellis would have transcribed the word *Paleotype* thus: [peeliotəip]. Cf. Ellis, *op. cit.*, pp. 3–12, 1869.) Ellis made another alphabet called Glossotype, which he used for compiling glossaries of dialectal speech. Cf. Ellis, *op. cit.*, pp. 13, 607 ff. (d) A. J. Ellis and Isaac Pitman (1845) combined forces to make an alphabet which developed into several forms. Ellis, *op. cit.*, pp. 24, 607. (e) The alphabets of continental scholars, such as Lepsius (1863), Max Müller, Rapp, Brücke, Merkel, *et al.*

⁵ Sweet, *Primer of Phonetics*, pp. 76–88.

⁶ As of this date, published at University College, London, W. C. 1, A. C. Gimson, Editor. First published, 1886.

number of the symbols of the phonetic alphabet. These letters are *p, b, t, d, k, g, l, m, n, r, f, v, s, z, h, w*. By placing these in square brackets, we have the corresponding phonetic symbols, thus: [p, b, t, d, k, g, l, m, n, r, f, v, s, z, h, w]. Here we have sixteen of the twenty-three commonly designated consonant symbols of English phonetics,⁷ already learned, as it were. The remaining seven will be taken up at suitable points later.

How to transcribe. If to these already known consonant symbols, certain of the seventeen commonly designated vowel symbols of English phonetics are added, we can transcribe English words in phonetics, i.e., write them in phonetic symbols rather than in ordinary orthographics, and thus make a beginning in developing the necessary sensitivity to isolated speech sounds as such. Transcription will be found to be essentially a process of setting down one symbol for each sound.⁸

[i] and [ɪ]

It is simplest to begin with the two vowel symbols [i] and [ɪ].⁹ The symbol [i] is used to represent the vowel sound in the second syllable of each of the following three words: *police, machine, cerise*. It likewise represents the vowel sound in each of the four words: *meet, beat, seem, brief*. We can now transcribe these four words respectively as [mit, bit, sim, brɪf].

Transcribe: bead, beads, beast, beasts, beet, beets, bee, bees, bean, beans, ceil, ceils, deed, deeds, deal, deals, eat, eats, eel, eels, ease, feat, feats, feet, feel, feels, feed, feeds, geese, heed, heeds, heel, heels, he's, keel, keels, keen, key, keys, keyed, lea, leas, Lee, Lee's, leek, leeks, leaks, lean, leans, leaned, leal.

The symbol [ɪ] is used to represent the vowel sound in *it, bit, sill*. These may be transcribed respectively as [ɪt, bɪt, sɪl].

Transcribe: bin, bins, bill, bills, billed, bid, bids, bits, Billy, Billy's, did, din, dizzy, Dick, Dick's, dim, dims, fin, fizz, gill (of a fish), gig, gigs, gigged, him, his, hid, hill, hills, hilly, kid, kids, kid's, kiss, kissed, kill, kills, killed, lit, lid, lids, list, lily, lilies.

Suggestions on problems encountered in the foregoing. It may be surmised that certain problems have arisen in the preceding work with [i] and [ɪ]. The following are suggested solutions to some of these, and answers to some related questions:

⁷ The definition, description, and classification of consonants is being delayed (in accordance with the plan indicated on page 4) until a minimum familiarity with a number of the symbols is established.

⁸ But see footnote 1, page 6.

⁹ As in the case of the consonants, definition and classification of vowels will be delayed until a minimum familiarity with a limited number of symbols is established.

1. What names shall be used in speaking of phonetic symbols? The accepted practice is an arbitrary one; some symbols are referred to by their common letter names and some by their actual sounds. The sixteen consonants already given are simply called by their letter names, largely because the actual sounds of some of them, especially [p, b, t, d, k, g], are difficult to pronounce in isolation loudly enough to be easily heard in conversation. The symbols [i] and [ɪ], on the other hand, are referred to by their actual sounds, never by their letter names. As new symbols are introduced, the customary names used in speaking of them will be given. *Note the next paragraph closely.*

2. But whether a symbol is spoken of by its letter name or by its sound, in transcription *it must be thought of by its sound only*. Thus we must think of the sounds in *bid* so as to transcribe them [bɪd]; it would be ridiculous if we thought of them as *bee-eye-dee* and tried to transcribe them thus.

3. In *beads* it becomes evident for the first time that *s* is often pronounced [z]. The change from [s] in *beats* [bi:ts] to [z] in *beads* [bi:dz] is a quite orderly one, which will be discussed in due course. Meanwhile, listen for the sound when each word is pronounced. If the sound is [s], set it down; if [z], set down [z].

4. *Ceil* [sil] presents the problem of [s] spelled with *c*. This is a frequent occurrence, as in *cease* [sis], *cystic* ['sɪstɪk], *cede* [sid].

5. The transcription ['sɪstɪk] introduces the matter of accent, usually called "stress" in this book. In IPA, primary stress is marked by a vertical stroke above and to the left of the stressed syllable, as in the preceding example. The mark for secondary stress is a vertical stroke below and at the left of the syllable, while weak stress has no mark at all.¹⁰

6. It is continually evident that it is impossible to represent each letter of the spelling with a phonetic symbol. Do not try to do so. Disregard the spelling entirely and listen for the sounds as you pronounce the words. Write a symbol for each sound you can distinguish, no matter whether in the end you have more phonetic symbols than letters in the original word, or the same number, or fewer. In *it* [ɪt], the number of phonetic symbols and the number of letters are the same; in *geese* [gis], there are five letters but only three symbols. The word *keyed* illustrates unusually well the necessity to transcribe only enough phonetic symbols to represent the sounds present; despite the five letters, there are again only three phonetic symbols, [kɪd], and the visual appearance of two syllables is contradicted by the sound of the word as pronounced, which shows that there is only one syllable.

7. The word *Billy* may present a particular problem. Some may hear the *y* as

¹⁰ It is important to note here that in modern descriptive linguistics four stress phonemes are recognized, *viz.*, primary, secondary, tertiary, and weak, marked thus: [' ^ ^ ^]. The following words illustrate the four: *lóng-bów*, *a lóng bów* (i.e. not a long arrow), *lóngish*. Phonemic secondary stress is included under IPA primary, and phonemic tertiary stress is identical with IPA secondary.