

THE GROUNDWORK OF ENGLISH STRESS

BY
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A man who writes a book thinks himself wiser or wittier than the rest of mankind; he supposes that he can instruct or amuse them, and the publick to whom he appeals must, after all, be the judges of his pretensions.

Boswell's *Life of Johnson*

GLOSSARY

of technical terms and special usages.

Atonic Stress. *See* Static Stress.

Collocation. A group of two or more words forming a combination which in form and function resembles an English-type compound, but which has not attained dictionary status as a single word.

Double Stress. That type of lexical word stress which consists of a kinetic stress on one syllable and an atonic stress on an earlier syllable.

Ed-form. A word, which may be a noun, an adjective or a participle, formed by adding the suffix *-ed* to the infinitive of a verb. The term also embraces irregular past participle forms.

English-type Compound. A semantic unit that has attained dictionary status, composed of two or more words written separately, joined by a hyphen, or as one word, and whose meaning may or may not be a straightforward combination of the meanings of its components.

Enumeration. Any utterance or part of an utterance (other than words in apposition) consisting of a succession of words, phrases or clauses having parallel grammatical functions in their sentence.

Full Stress. That degree of stress that is associated with a kinetic tone or with a high level tone.

Gerund. An *ing*-form used as a noun.

Greek-type Compound. A word formed of two or more recognizable root elements that do not as a rule stand alone as complete words.

Ing-form. A word, which may be a noun, an adjective or a participle, formed by adding the suffix *-ing* to the infinitive of a verb.

- Intonation.** The rise and fall of the pitch of the voice in speaking.
- Kinetic Stress.** A stress with which a kinetic tone is associated.
- Kinetic Tone.** A tone in which the pitch of the voice varies during the whole duration of the tone.
- Level Stress.** A stress unassociated with a kinetic tone.
- Lexical Pronunciation.** The pronunciation given to a word when it is used in isolation, as if quoted from a dictionary.
- Lexical Stress.** The stress given to a word in its lexical pronunciation.
- Multiple Stress.** That type of word stress which consists of a kinetic stress and more than one static full stress, with possibly a partial stress or stresses.
- Nomen Agentis.** A noun (usually formed by adding the suffix -er to a verb) which denotes the doer of the action named in the verb.
- Partial Stress.** That degree of stress which is associated with a Low Level Tone, also used on some words of higher pitch.
- Pitch.** The degree of acuteness or gravity of a tone, produced by the tension and rate of vibration of the vocal cords.
- Romantic-type Compound.** A word formed by the addition of prefixes or suffixes, or both, to a recognizable root, which may or may not be an independent word in itself.
- Semantic Stress.** A stress whose presence alters the meaning of the word on which it is used.
- Sentence Stress.** The relative degree of force given to the various words in a sentence or utterance.
- Static Stress.** A stress with which a static tone is associated.
- Static Tone.** A Tone on which the voice remains steady on a given pitch throughout its duration.
- Stress.** The force employed in uttering a syllable, giving it a certain degree of prominence.
- Stress-mark.** A mark placed before a syllable to indicate that it has some degree of stress.
- Stress-pattern.** The arrangement of stressed and unstressed syllables in a speech segment.

Tone. A stress considered from the point of view of the pitch or pitch change associated with it.

Tonetic Stress-mark. A mark placed before a syllable indicating stress by its presence and tone by its form.

Triple Stress. That type of word stress which consists of a kinetic stress on one syllable and two atonic full stresses on earlier syllables.

ERRATA

p. 43; line 28: *'trans,script to read 'tran,script.*

p. 62; line 18: *'ac'cepta'bility, 'dapta'bility, to read | ac'cepta'bility, a'dapta'bility,*

p. 64; line 25: *res,train to read res'train.*

p. 71; line 20: *'fumi,gator to read 'fumi,gator.*

p. 73; 7 lines up: *cho'rea to read ,cho'rea.*

p. 78; line 11: *'kouris'pondent to read 'kouris'pondent. and 'koris'pondent to read 'koris'pondent.*

p. 82; line 12: *spaghetti to read spa'ghetti. fal'setto to read ,fal'setto.*

line 27: *'epau,let(t)e. to read 'epau,let(te).*

p. 84; line 21: *'eli'dʒalac to read 'eli'dʒalak.*

p. 86; line 9: *,luxu'ri,ate to read ,lux'uri,ate.*

p. 90; line 10: *aŋ'zaləti to read ,aŋ'zaləti.*

p. 95; line 22: *ex'cel'si, orfk'selsi,o: to read ex'cel'si,or ik'selsi,o:,*

p. 101; line 10: *'germa'nize to read 'germa,nize.*

p. 134; line 19: *e'difice to read 'edifice.*

p. 150; line 31: *compounds to read compound.*

p. 187; line 10: *'more,pork to read 'more,pork.*

p. 211; line 1: *'-mony to read -mony.*

INTRODUCTION

THE object of this volume is to provide foreign students with some guidance through the maze of English word stress and to help them to eliminate many of the faulty stressings that occur in their speech.

While engaged some years ago in teaching the phonetics of English, and in particular its intonation, I gradually became aware that the element of stress was not receiving its full due, since many of the mistakes made by students were being attributed to wrong intonation when in fact they were mistakes in stress. At the same time it became clear that certain stressing mistakes were giving rise to mistakes in intonation.

I was therefore led to the conclusion (which is contrary to opinions that have been expressed by some authorities) that a foreigners' intelligibility may depend quite as much on correct stressing as on correct intonation. In a strongly stressed language like English, where vowel quality is so frequently influenced by the presence or absence of stress, wrong stressing disguises words far more effectively than does wrong intonation. Further, it is obvious that the expression and feeling that intonation should render cannot be properly conveyed if the intonation is superimposed on incorrect stressing.

The importance of correct stressing in the conveying of meaning is illustrated by a dilemma that was put to me by a German-speaking student residing in London. He wanted to know why, when he asked at an Underground station for a ticket to Camden Town, he was frequently given one to Kensington. The answer, of course, was simple: his pronunciation was approximately 'kemdntaun, which to a Londoner's ear was much closer to the single-stressed place-name 'kenslntən than to the correct double-stressed pronunciation 'kamdən 'taun. While the misunderstanding was helped by the student's faulty sounds (which included a partial de-

voicing of the consonants mdn), it was principally due to the wrong stressing, because a double-stressed pronunciation, even with the faulty sounds, could not have been taken for Kensington. No question of intonation was involved, since the correct tone was used, though through misplaced stress it was used on the wrong syllable. This anecdote may serve as some justification for the appearance of a whole volume devoted to word stress.

The field of English word stress is practically virgin soil, it having been generally held that it follows no rules. I felt, however, that if one worked in the light of the principles explained in § 8 of the present work it might be possible to throw a little light on the incidence of word stress, and to formulate some rules that would be of use to foreign learners. The somewhat protracted investigation that followed has resulted in the present volume.

The initial problem—that of the stressing of root words—proved to be less difficult than might have been expected, for most roots are monosyllabic, and furthermore, in the absence of other influences tend to retain their stress when compounded. The remaining problem—that of the stressing of compounds—resolved itself into three parts, corresponding to the three types of compound detailed in § 15. The three parts of the problem were:

1. How do inflexions affect the stress of the roots they are attached to?
2. How do elements of greater semantic content than mere inflexions affect one another when they are combined?
3. Which word or words are stressed when two or more existing words are used in combination to form a new or modified meaning?

The answers to these questions developed into the various lists which constitute the body of the work and which, it is hoped, will prove of value, both for drill purposes and for reference, to foreign students of English.

Reasons are given in § 4 for the full marking in a work of this type of all syllables that may be regarded as having some

degree of stress. The remarks there made, however, are not to be taken as endorsing the view held in some quarters that every syllable containing a strong vowel must necessarily have a partial stress; in many cases it is reasonable to regard the prominence as being due entirely to the presence of the strong vowel. The question of what degree of prominence a syllable must have before it deserves to be marked as partially stressed, is, of course, largely a matter of opinion, but I feel that in a work dealing exclusively with word stress (as opposed to sentence stress and intonation), where the examples are given in ordinary spelling and therefore contain no clue to the vowel quality of the syllables, it is a useful convention to employ the lowered stress-mark and the raised dot to indicate strong, or relatively strong, syllables.

The traditional method of indicating word stress in dictionaries has been to place an accent or some other mark *after* the stressed syllable. It is now a good many years since phoneticians introduced the much more logical and helpful system of placing the stress indicator *before* the stressed syllable, a reform that non-phonetic dictionary compilers have shown regrettable slowness in adopting. In current phonetic practice two degrees of stress are indicated by vertical stress-marks, a high mark indicating a "principal" stress and a low mark indicating a "secondary" stress. Feeling that it is misleading to use a low stress-mark to indicate what is frequently a high level stress, and in order to bring the marks used in the present volume into harmony with the tonetic stress-mark system, which is used and fully described in the author's *Groundwork of English Intonation*, as well as for the reasons referred to above, I have felt justified in introducing certain refinements into the showing of stress. Though these involve the use of a third stress-mark (˘) and an optional fourth (˙), the slight extra complication is more than off-set by the fact that these changes enable one to give a clear and logical picture of the stressing of each word, since the marks now *illustrate* the pitches used in the lexical pronunciation. I feel that the markings in 'fer'ocity, 'amphi,theatre, unde'nomi-national and 'para'siti,cide give a more accurate picture than

do: in,feri'ority, 'amphi,theatre, 'unde,nomi'national and ,para'siticide. Readers who are interested will find a table of the tonetic stress-marks inside the front cover.

The employment of inter-syllabic stress-marks in a text in ordinary spelling raises the problem of syllable division in an acute form, since old ideas on this subject and on the counting of syllables in a word have been discarded. For instance, the word *prism* contains one vowel but two syllables, the second being composed largely of the sound of m. A similar pronunciation is given to the word *prison*, where the *o* is not pronounced and the second syllable therefore consists largely of the sound n. Again, it is not easy to decide how many syllables are contained in words like *denial*, *remedial* and *partiality*.

It is now realized that the dividing line between syllables comes at the point of lowest sonority, and this means that it will frequently correspond with the middle of a consonant. Since it is obviously not practical to place stress-marks over consonants, a decision has to be arrived at whether to place them before or after the consonant or consonants at the syllable division. I decided that in the case of English-type compounds it would be advisable to allow etymological factors more weight than phonetic ones; few problems therefore arose. In the Greek-type and Romanic-type compounds, however, phonetic considerations were given preference, and the problems that this raised have been dealt with as follows.

In Romanic languages no problem would exist in cases where syllables were divided by a single consonant, as it is agreed that such a consonant always belongs to the following syllable, thus establishing as many open syllables as possible. In English, however, etymological considerations are often allowed to intrude, to the detriment of phonetic accuracy. The system I have followed has been to place the stress-mark before the consonant whenever I have felt that this is stressed. A special case is that of the letter *x*, where very frequently the *k* or *g* seems to belong more to the previous (unstressed) syllable while the *s* or *z* belongs to the following (stressed) one. It is obviously impossible to show this in ordinary spell-

ing, and the stress-mark has therefore been placed after the x , with the convention that the sibilant component of the x is included in the stressed syllable.

When there are two consonants the problem usually resolves itself fairly easily, as in most cases the first consonant will be felt to close the previous syllable while the second one begins the following syllable. In the case of doubled consonants it is clearly best to place the stress-mark between them.

In clusters of more than two consonants, any that seem to be intimately combined have not been separated, and the stress-mark has been placed before the consonant or consonants that seem to bear some stress.

A typographical point should be mentioned. In all the examples where stress-marks have been used at a point in a compound where it is customary to use a hyphen, this latter has been omitted. Apart from its use to indicate a broken word at the end of a line the hyphen has two functions: (1) to show that two (or more) components of a compound are more intimately linked semantically and phonetically than they would seem to be if written as separate words, e.g., free hand (discretion to act) as opposed to free-hand (drawing), and (2) to separate off an affix or two components of a compound which, on account of the orthographic vagaries of English, might be mispronounced if written as an uninterrupted single word (e.g., co-operative, post-horn). In each of these cases, I feel, the stress-mark serves the same purpose as the hyphen, and by omitting the latter the compound is rendered more legible.

Considerable space has been devoted to differences in British and American word stress, as I feel that (for the reasons given at the end of § 71) these are important, and I am not aware of the existence of any detailed study of this aspect of English.

Where necessary, pronunciation is shown in the International Phonetic Alphabet in its broadest (i.e., simplest) form. These symbols are set in sans serif.

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1. The Two Kinds of Stress

Stress is the relative degree of force used by a speaker on the various syllables he is uttering. It gives a certain basic prominence to the syllables, and hence to the words, on which it is used, and incidentally assists in avoiding monotony. There are two types of stress: Word (or Lexical) Stress and Sentence (or Syntactical) Stress.

Word Stress is the relative degree of force used in pronouncing the different syllables of a word of more than one syllable. Monosyllables cannot be said to have word stress. Word stress in English is usually considered to occur in three degrees, which have been given various names by different authorities: 1. Primary, Strong, Main or Principal; 2. Secondary, Half Strong or Medium; 3. Weak or Unstressed. The nomenclature that will be used in the present work is explained in § 7.

Sentence Stress is the relative degree of force given to the different words in a sentence. Since it is closely bound up with intonation, it cannot be studied fully until some knowledge of the tones has been gained; detailed consideration of it has therefore been included in the author's *Groundwork of English Intonation*, and in the present work it will be referred to only in so far as is necessary for the proper consideration of word stress.

Sentence stress may differ from word stress in either of two ways: Monosyllables may take sentence stress if they play an important enough part in the utterance, and words of more than one syllable may be unstressed if their function in the sentence is sufficiently unimportant.

2. The Two Kinds of Tone

Intonation is the variation given to the pitch of the voice in speaking. In English there is a basic intonation, or general

intonational trend of the voice, which shows a gradual descent from a high pitch at or near the beginning of the utterance, to a lower pitch on the syllable immediately preceding that bearing the last full stress. The rate of descent varies somewhat with the length of the intonation group and the type of tone to be used on the last stress, but it is usually very gradual and entirely subconscious, so that it does not add any feeling or expression to the utterance.

Static Tones are the stresses that punctuate this general intonational trend. They consist of level tones uttered with relatively greater force on the pitch at which the voice has naturally arrived when it reaches that part of the utterance in which they occur. It may therefore be said that from the stress point of view they are prominences, but that from the intonational point of view they make no contribution to the meaning or feeling of the utterance.

Kinetic Tones are more rapid changes in the pitch of the voice, superimposed upon the general intonational trend in order to add expression to the utterance, or in other words, to convey the speaker's feelings about it and therefore to express his meaning more accurately. The pitch change may be made either upward or downward or first in one direction and then in the other.

As will be seen on reference to *The Groundwork of English Intonation*, five kinetic tones occur in English speech. Between them they are capable of expressing such feelings as interrogation, didacticism, hesitancy, boredom, friendliness, enthusiasm, apology, ridicule, impatience, encouragement and others.

These kinetic tones are always used on or in association with sentence stresses. In some cases the pitch change occurs on the stressed syllable itself, in some others it takes place between the stressed syllable and the next following one, while in others again it occupies a series of unstressed syllables immediately following the stress.

Every complete utterance must have at least one kinetic tone. In simple utterances only one kinetic tone is used, but some intonation groups must be regarded as compound in that

they contain more than one kinetic tone. This being so, it is convenient to distinguish the last kinetic tone of any utterance as the **Nuclear Tone**, since this is the tone that forms the intonational nucleus of the utterance and gives it its principal feeling and expression.

3. Interdependence of Stress and Tone

Since the stress structure of an utterance is the framework upon which its intonation is superimposed, it is advisable to know something about stress before proceeding to the analysis of intonation. At the same time, since word stress is affected by intonation it is necessary to know something about the latter before studying stress in detail. To overcome this dilemma a few basic facts about intonation will be explained in the course of the next few sections, the explanations being confined strictly to what is necessary for an understanding of the working of stress.

The five kinetic tones referred to in § 2 are very largely interchangeable, that is to say, a syllable that can take any one of them may, given suitable contexts, take any of the others. They are most conveniently indicated by the Tonetic Stress-mark system, which is used in *The Groundwork of English Intonation*, and which indicates both stress and tone. In order not to confuse the reader with differences in intonation while he is concentrating upon stress, only one kinetic tone mark will be used in the present work, and it will be assumed that the word on which it is shown will be pronounced with that tone. Tone II, or the Falling Tone, has been chosen for this purpose, as being the one that is naturally used in the lexical pronunciation of any word.

Lexical Pronunciation is the pronunciation given to a word when it is pronounced in isolation, as if quoted from a dictionary. It is therefore the basic pronunciation of the word, which may undergo certain modifications in connected speech.

Lexical Stress is the fullest form of the stressing given to a word in its lexical pronunciation. It must be regarded as the most important element in the lexical pronunciation, since

stress is the factor most commonly affected by a word's context.

Since the lexical pronunciation of a word is in itself a complete utterance, it must contain a kinetic tone, which will fall on what is popularly called the "stressed" syllable of the word. Students in the more elementary stages of learning English may place the kinetic stress of a word on the wrong syllable, but such mistakes are usually corrected fairly soon.

Many words, however, have certain degrees of prominence on syllables other than that which bears the kinetic stress, and it is on these that students who are much more advanced make frequent mistakes. Such mistakes can be avoided only by acquiring an accurate and detailed knowledge of the lexical stress of the word. A student who has memorized the typical word stress patterns in English will be in the best position to remember the lexical stress pattern of each new word he comes across.

In connected speech the lexical stress pattern frequently undergoes certain modifications, but this fact does not introduce much complication, as the modifications are subject to fairly simple rules.

4. The Three Essential Stress-Marks

Even with the simplification introduced by the consistent use of a single kinetic tone, the adequate representation of English lexical word stress still requires a minimum of three marks, of which one indicates the kinetic tone while the other two show static tones. These marks are placed before the syllables taking the stress, and are as follows:

The Kinetic Tone Mark (˘), which in effect is Tone II or the Falling Tone. In a single-stressed word this always falls on one of the first two syllables. Examples:

˘private, ˘mariner, ˘comfortable, ˘favouritism, re˘verse, ne˘glectful, in˘credulous, a˘bominable, in˘voluntarily.

The High Level Tone Mark (ˊ), which represents a static tone usually pitched at or near the top of the speaker's

normal voice range. It indicates a fully stressed syllable coming earlier in the word than that bearing the kinetic stress. Any word having this stress is regarded as being double-stressed (or triple-stressed). Examples:

'half'baked, 'photo'graphic, 'overper'suaded, e'lectio'neer, u'ti'litarian, in'tensifi'cation, 'indi'vidu'alinity, 'interde'nomi'national.

The Low Level Tone Mark (,), which represents a static tone usually pitched at or near the bottom of the speaker's normal voice range. It indicates a partially stressed syllable which may come either earlier or later in the word than that bearing the kinetic stress. The presence of this stress in a word does not cause it to be regarded as double-stressed but any syllable on which it falls must have a strong vowel.

It should, perhaps, be pointed out here that of the twelve pure vowels in English one (ə) is always weak and can therefore occur only in unstressed syllables, and two (i, u) may be either weak or strong, according to whether they occur in unstressed or stressed syllables respectively. The remaining nine, of which four (e, a, o, ʌ) are short and five (i:, a:, o:, u:, ə:) are long, are always strong, and syllables in which they occur will therefore tend generally to take some sort of stress. Of the nine diphthongs two (ɪə, uə) may be either weak or strong, according to whether they occur in unstressed or stressed syllables, and the remaining seven (eɪ, ou, aɪ, au, oɪ; eə, oə) are always strong.

Pre-kinetic partial stresses nearly always occur on the syllable immediately preceding the kinetic stress, as a full stress is used if unstressed syllables intervene. Their occurrence is almost entirely in words having the kinetic stress on their second syllable.

,aus'picious, ,bar'barian, ,crus'tacean, ,fore'seeable, ,pon'tifically, ,vi'bration.

Post-kinetic partial stresses may be said to occur in the majority of instances where a strong vowel is heard in a syllable falling later in the word than the kinetic stress. They are to be found in the three different types of compound (see § 15) for the diverse reasons given below.