THE GROUNDWORK OF ENGLISH INTONATION

BY

ROGER KINGDON

> Human music filled his being with an engrossing excitement that interfered with his concentration and his sleep, since the rise and fall, the melodies and variations of notes and harmonies, came and went through his mind.
>
> PIERRE GASSEND: *Life of Pieresc*

FOREWORD

I HAVE known Roger Kingdon since 1936, when he worked in the Department of Phonetics, University College, London, for two years. He has always shown remarkable aptitude for phonetics, and especially for intonation, for which he has a very keen ear. He has specialized in this study ever since, and has made many discoveries in the field of English Intonation. He was the inventor of the system of "tonetic stress-marks" used in this book and now beginning to be adopted in other works.

Written as it is by a particularly capable teacher, who has had thirty years' experience in teaching English to foreign learners, this work will be found indispensable to teachers of English and to others who interest themselves in this fascinating branch of phonetic science.

DANIEL JONES

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PREFACE

It is perhaps advisable to give reasons for the appearance of another book on English intonation, when several works on this subject are already available.

Some years ago English phoneticians were obliged to recognize that their students' progress in intonation was disappointing when compared with their advances in learning the sounds of the language. This disparity seemed to me to be due to the fact that, while phonetics was being taught on the basis of an exhaustive analysis of the significant sounds of English, students being carefully drilled in the isolated sounds before being asked to combine them into words and sentences, intonation was being taught, after a superficial description of two contrasting tunes, by means of the reading over of large numbers of sentences, usually (but not always) classified in accordance with the tunes used, in the hope that this repetition work would enable the students to master the tunes and apply them correctly. The whole procedure was too reminiscent of the very old-fashioned vocabulary drills in language classes, or of the hardly less old-fashioned method of teaching pronunciation by making students repeat whole sentences after the teacher, in the hope that they would eventually arrive at a successful imitation of the latter's pronunciation. This method was apparently being employed because no full analysis and classification of the factors that go to make up the intonation of English had ever been made.

A specific trouble caused, it seemed, by this method was the confusion in the minds of many teachers—and even of some phoneticians—between stress and intonation. In order to disentangle the stress element from the tonetic one it is advisable to break down a tune into its component parts, and not to treat it always as a whole. It seemed to me that a book in which the essential elements of intonation were presented

and described separately, and then assembled into tunes, might enable a considerable advance to be made in teaching methods, just as the use of phonetic analysis has greatly improved the teaching of pronunciation.

The present work is the result of such an attempt to make a full analysis of the significant factors of intonation, and the word *Groundwork* has been incorporated in the title to indicate that those factors that can, without introducing excessive complexity, be separated out and reduced to rules are only a foundation upon which further expression may be built up by such means as word grouping, pauses, speed of delivery, voice quality, and slight alterations in pitch and tone, which cannot be recorded without making any notation system too complicated for practical use. Such refinements may be compared to a singer's "rendering" of a song or to a conductor's "interpretation" of a symphony. In each case the score gives the notes, with some indication of the feeling to be expressed, and the finer points are added by the executant in accordance with his or her personal feeling about the piece. Intonation marks should do for speech what a score does for music; the rest is left to the individual reader.

In an article published in *Le Maître Phonetique*, No. 68, in 1939 I listed 60 possible stress-tone variants of the sentence *I can't find one*. It now transpires that this number falls considerably short of the total possible, for that analysis was based on only four kinetic tones—I had not then realized the existence of a fifth—and did not make allowance for all the modifications that can be introduced by using anomalous unstressed syllables. This multiplicity of tonetic patterns constitutes one of the difficulties in the study of intonation and renders necessary a searching analysis of the tunes, in order that their elements may be presented as clearly as possible.

The foreign student need not be disheartened at the prospect of so much complexity; on the contrary, with the significant elements of intonation separated out from the non-essential ones and presented to him in logical order and an easily assimilable form, he may be confident that as soon as he has mastered them he will be able to speak English with an

intonation that will strike the native speaker as correct, while his own power of imitation will enable him to supply the refinements.

A subsidiary object of this volume is to give copious examples of the working of the system of tonetic stress-marks, which seems to me to be the most efficient and practical means of indicating intonation. For a convincing summary of the advantages offered by these marks the reader is referred to the introduction to P. A. D. MacCarthy's excellent *English Conversation Reader* (Longmans, Green), where the marks are used to show the intonation recommended for a number of conversations. Up to the present these marks have been used only for research work and in books intended for the teaching of English intonation to foreign students, but there is no reason why they should not prove useful in schools of drama, where they could serve to mark on the students' scripts the type of intonation the producer wants them to give to their lines.

The work deals first with the Static Tones, after which the five Kinetic Tones are introduced. The various other parts of an intonation group are then described in such a way as gradually to build up a complete tune. Various ancillary devices are next presented, and when sufficient practice has been obtained at this level the two more complex kinetic tones are introduced. The student who has followed this process through will be in a position to assemble the various elements so as to make correct tunes, particularly as the theoretical sections are accompanied by numerous examples, which increase in complexity until full natural intonation is being represented. Considerable space has been devoted to sentence stress, which is always a pitfall for foreign students. This section includes a table of words normally stressed and those normally unstressed, which I have worked out in greater detail than has been attempted before. Another section of the work attempts to classify utterances and to list the tunes used by each class. Both these sections will serve to give the reader extra practice in relating tunes and utterances. Great care has been taken at all stages to explain the meaning or implication of the tunes in every class of utterance on which they can

be used. This has been made possible only by the analysis of the tunes and the identifying of the significance of each element composing them. Experience has shown the impossibility of giving a clear picture of the meanings of the tunes without first explaining the particular function of each of their elements.

The nomenclature applied to tonetic phenomena is one I have used in practical teaching for a number of years. It is in part based on one of the systems used by Harold E. Palmer, but it contains a considerable number of additions and modifications that I have found it advisable to make. In employing the term *kinetic* to distinguish the moving tones, I have adopted a suggestion made to me by R. T. Butlin.

The numbering of the kinetic tones is my own. Readers who are familiar with the Armstrong and Ward *Handbook of English Intonation* will notice that the numbers I and II are here applied in the opposite sense to that in which they are used in that book. This change is unfortunately necessary in order to establish a logical numerical series for the five tones. It is the final (not the initial) direction that a tone takes that gives it its principal character, and since there happen to be three tones that end in a rise and two that end in a fall it is logical to allot the odd numbers to the rising tones and the even numbers to the falling ones, thus forming a series of gradually increasing complexity with final rises and falls alternating. Any confusion between my system and the Armstrong and Ward numbers should be minimized by my practice of adding small capitals after the roman numerals whenever it is desirable to indicate which variant of a tone is being referred to. Professor Daniel Jones has suggested that phoneticians who are used to the Armstrong and Ward numbers can avoid confusion by using the designations K1 and K2 when referring to the first two tones described in this book.

I wish to express my deep gratitude to Professor Daniel Jones for the constant encouragement he has given me while I have been preparing this book, for his readiness to help me with his advice, and for the valuable guidance he has always

given me in any question of phonetics that I have brought to him.

I am also deeply indebted to P. A. D. MacCarthy for going through the manuscript of this work and making a number of corrections and suggestions for its improvement, as well as for placing at my disposal his experience in using the tonetic stress-marks. I am particularly grateful for his suggestion that the lowered marks could be made to do more work than I had been allowing them. I adopted this idea, and found that it made a great saving in the use of the emphatic marks, with a consequent gain in legibility of the texts. I also wish to place on record my appreciation of his adoption of the re-numbering of the tones referred to above. In consequence, the numbering used in the present work corresponds with that used in his *English Conversation Reader*.

My best thanks are due to Professor Simeon Potter for calling my attention to the existence of what I have named "Tag questions inviting contradiction." These are described in § 110, paragraph 1*c*.

Since intonation is based on sentence stress and that again on word stress it is advisable for the student of intonation to have a sound knowledge of stress. Sentence stress is dealt with at some length in this work, while word stress, covering as it does a very wide field, has been given special treatment in the author's *Groundwork of English Stress*. A work like the present one, which expounds an analysis of intonation that involves a number of new ideas, must necessarily be more expository than practical. For this reason a companion volume entitled *English Intonation Practice* has been prepared; this contains numerous examples of the practical intonation of all kinds of English, from Shakespeare to modern conversation.

GLOSSARY

of technical terms and special usages

Adjection. A word, phrase or clause attached to a sentence and only partiallv related to the main subject-matter.

Adverbial. A phrase or clause performing the function of an adverb.

Afterthought. An adjection added at the end of an utterance, usually conveying an idea that has just occurred to the speaker.

Anomalous Finite. One of the twenty-four auxiliary verb forms that precede the subject in questions and have a negative form made by adding *n't*.

Aspect of Accomplishment. Those tenses of a verb that are used when interest is concentrated on the accomplishment of an action or on its habitual nature.

Aspect of Activity. Those tenses of a verb, formed by adding its present participle to a tense of the verb *to be*, that are used when interest is concentrated on the activity of the subject of the verb rather than on the accomplishment of the action.

Body. That part of an intonational tune lying between its head and its nucleus.

Collocation. A combination of two or more words which is not sufficiently established to be regarded as an English-type compound.

Compound Tune. An intonation group containing more than one kinetic tone.

English-type Compound. A combination of two or more independent words having a meaning which is not necessarily a straighttorward combination of the meanings of its components. An established collocation.

Finite. A part of a verb other than an infinitive or a participle.

Greek-type Compound. A combination of two or more recognizable roots which are not as a rule independent words in English.

Habitual Tenses. *See* Aspect of Accomplishment.

Head. The first full stress of a tune, whether static or kinetic.

Homosyllabic Prehead. A prehead that occupies part of the same syllable as a head.

Kinetic Tone. A tone in which the pitch of the voice varies during the whole duration of the tone.

Level Tone. *See* Static Tone.

Lexical Stress. The stress normally given to a word when it is quoted in isolation and without special emphasis.

Moving Tone. *See* Kinetic Tone.

Nuclear Tone or **Nucleus.** The tone associated with the last fully stressed syllable of a tune.

Parenthesis. An adjection interjected into the middle of an utterance to convey a side thought that has just occurred to the speaker.

Pitch. The degree of acuteness or gravity of a tone, produced by the tension and rate of vibration of the vocal cords.

Pitch-mark. A horizontal or nearly horizontal line placed before an unstressed syllable to indicate its pitch.

Prehead. Any unstressed or partially stressed syllable or syllables preceding the first full stress of a tune.

Progressive Tenses. *See* Aspect of Activity.

Romanic-type Compound. A word formed by the addition of an affix or affixes to a clearly recognizable root.

Sentence Stress. The relative degree of force given to the various words in a sentence or utterance.

Simple Tune. An intonation group containing only one kinetic tone.

Static Stress. *See* Static Tone.

Static Tone. A tone in which the voice remains steady on a given pitch throughout its duration.

Stress. Force employed in uttering a syllable. One of the principal factors in giving prominence.

Stress-group. A word or words associated with a single full stress.

Stress-mark. A vertical 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.

Sub-head. *See* Subordinate Head.

Subordinate Head. A syllable (bearing a tone) on which a break in the general trend of intonation occurs—generally marking the first stress of a non-initial phrase or subordinate clause.

Tag. An addendum to an utterance, consisting essentially of a noun or pronoun as subject and an anomalous finite as predicate, in which the finite takes the place of a principal verb used in the original utterance.

Tail. Any unstressed or partially stressed syllable following the nuclear stress of an utterance.

Temporizer. An adjection used before an utterance to gain time while the speaker is framing his main remark.

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

Tone-group. *See* Tune.

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

Verbal. The infinitive or participial forms of a verb.

Voice Range. The range of pitches commonly used in speech. The voice range varies with the individual.

Word Stress. The relative degree of force used in pronouncing the different syllables of a word.

INTRODUCTION

Analysing Intonation. The first step in the analysis of intonation is the separation of Stress and Tone. Stressed syllables are of two kinds: those in which the vocal cords remain at a given tension, producing a note of constant pitch, and those in which their tension is changed, thus producing a sound of varying pitch. In order to emphasize this distinction, the first class (which, though naturally containing a tonal element, are functionally stresses) will be referred to as Static Tones, while the second class, the moving and meaningful tones, will be called Kinetic Tones. These terms have been chosen because they are equally applicable to the nature of the two kinds of tone and to the condition of the vocal cords in producing them. This initial distinction between static and kinetic tones may be likened to that between pure vowels and diphthongs, since in producing the former the vocal apparatus is maintained in a fixed position, while for the latter there is movement from one position to another.

The next step is to discover the number and nature of the members of each of these two classes.

Obviously, there must exist a large number of static tones, limited only by the extent of the human voice range and the size of the pitch intervals that can be conveniently distinguished by the human ear, but for practical purposes, especially in teaching, it is probably sufficient to recognize two level tones—high and low—and a modification in pitch of each of these when it is emphatic, thus giving in effect four pitches.

In the case of the kinetic tones, there appear to be six main factors entering into their composition:

1. Direction or directions of pitch change (rising, falling, falling-rising, etc.). This factor is the most important of all, since it frequently has a semantic function; in other words,

the meaning of an utterance may be changed completely by altering the direction of the pitch change.

2. Position on the scale of pitches used by the human voice (i.e., high or low). The chief function of this factor is to indicate the feelings of the speaker. An utterance may be modified very considerably in feeling by a simple shift up or down the scale, without any other change, and even slight adjustments of this nature may give a valuable indication of a speaker's mood. However, in an analysis intended for teaching purposes it is enough to show two different pitch positions.

3. Range of pitches (normal or extended) and

4. Intensity (degree of loudness, breath force used, muscular energy, etc.). These two factors combine to provide varying degrees of emphasis, but here, again, it is sufficient to show two degrees, normal and emphatic.

5. Duration of the tone on the syllable or on almost any of its component parts (such as lengthening or shortening of particular consonants or vowels). This factor adds expression as well as emphasis. Although there are devices in the International Phonetic Alphabet for showing length, it has not been customary among phoneticians to indicate special lengthening or shortening introduced to add expression to an utterance. In tonetic texts these devices can be employed if desired, but their introduction would be a refinement that would hardly be necessary except in very special cases.

6. Variation in the rate of pitch change (e.g., in a falling tone, a slow descent from the starting-point, with an increase in the rate of descent as the end of the tone is reached, or, conversely, a rapid initial descent followed by a slowing-up towards the end). While variations of this sort may occur, they are not cardinal, and may be left for students to pick up by imitation when they have mastered the general intonation of the language.

Summing up, then, it may be said that in establishing the groundwork of intonation the variation and duration may be left for assimilation at a later stage, intensity and range of pitch may be indicated jointly by showing two degrees of emphasis, and position on the scale of frequencies may be

shown as either high or low. This leaves only the direction of pitch change, which requires more detailed investigation.

The direction of the pitch change is the fundamental classification of the kinetic tones, and any of the other factors mentioned above may be overlaid upon it. The first requirement in a tonetic analysis, therefore, is to find out how many different types of pitch change occur in the language under investigation.

Since the number of pitch changes that can be introduced in an utterance of average length is obviously enormous, it is necessary to establish some limited speech segment as a basis, and it is obviously logical to fix upon the syllable as this unit. In other words, any pitch change or combination of pitch changes that can occur on a single syllable must be regarded as a basic element of the intonation of the language. The question of the meaning or feeling conveyed by such a tone is a secondary one which must be considered after the number of tones has been established on a physical or acoustic basis.

This line of investigation led me to the identification of five kinetic tones, which are in practice always associated with stressed syllables, though they may not always be confined to such a syllable. They may each of them fall on a single syllable, but even if they are spread over a number of syllables they remain a tonetic unit. These five tones furnish a convenient and not too complicated foundation on which to base a tonetic analysis, but they may, of course, be used in various combinations to form a large number of compound tunes.

This display of five kinetic tones capable of combining to form numerous different tunes may startle those who are used to the system of two tunes with a few variations, but unfortunately it appears that any simpler analysis will not cover all the ground. (It is true that H. E. Palmer described five kinetic tones, to which he gave the term *nuclei*, but these included two similar tones differing only in pitch position and range, and one that he described as distinguished from one of the others by the addition of intensification. Though he postulated four tone-groups, these contained only three kinetic tones as I conceive them.)

Recording Intonation. The various systems of recording intonation that have been devised from time to time may be divided into three main classes: (1) those that show the intonation on an interlined scale or stave between the lines of text, (2) those that show it by numbers placed above or below the words of the text to represent the pitches on which the words are pronounced, and (3) those that show it by inserting tonal indicators in the line of text itself. The advantages and disadvantages of these three classes may be summarized as follows:

Class 1. *Advantages.* Pitch changes and stress can be shown with considerable accuracy.

Disadvantages. The exact correspondence between the pitches shown and the syllables of the text is not always easy to see at first glance. The drawing and filling-in of the staves is too slow a process for extensive use in class, while the staves occupy a lot of space and add disproportionately to the cost of book production. Lengthy tonetic texts using this system are fatiguing to read and uneconomical to produce.

Class 2. *Advantages.* Any reasonable number of pitches can be indicated, and the correspondence between the figures and the syllables they refer to is clear. In printing, the numbers do not require much extra space and do not add excessively to the cost of production.

Disadvantages. Stress must be indicated separately from intonation. Numbers are an unsatisfactory means of indicating pitches and pitch changes as they give no visual aid and require a maximum effort to memorize their significance. The weakness of their representation of kinetic tones is particularly noticeable. Further confusion is introduced by the fact that in some systems the numbers are read upwards, while in others they are read downwards.

Class 3. *Advantages.* Tone indicators can be devised which will give a visual indication of the pitch changes to which they refer, and they can be placed immediately before the syllables they are related to. These indicators can be very simple in form, will occupy very little space, and can be written into a text at verbatim speed. In printing they can be set in the ordinary way with the rest of the text, and are therefore

reasonably economical in production costs. Lengthy texts printed in these systems can be read without fatigue.

Disadvantages. Unstressed syllables usually bear no indicators, and conventions covering the treatment of these must be memorized. It is not possible to show more than two pitches and two degrees of emphasis without making the system of indicators too complicated.

It should be added that when systems belonging to Class 2 or Class 3 are used, it is generally advisable to insert a short introductory section in which the values of the indicators are shown diagrammatically by means of a Class 1 system.

Systems of Class 1 type have been used by Professor Daniel Jones, Professor Klinghardt, Lilias Armstrong, Ida Ward, Hélène Coustenoble and Wear and Rankin.

Systems of Class 2 type have been used by H. O. Coleman and K. L. Pike.

Systems of Class 3 type have been used by Henry Sweet, H. E. Palmer, Dorothée Palmer, P. A. D. MacCarthy and myself.

Further, K. L. Pike has at times replaced his four-pitch numerical system by one in which the intonation is indicated by a dotted line that weaves up and down across the line of text, with solid sections to indicate the incidence of stress. It is, of course, practically impossible to set up this system in print, and in any case both this and the numerical systems are probably more suitable for showing American intonation, in which voice pitch seems to play an important part, than they are for marking British intonation, where the kinetic tones are more marked and more important.

The Tonetic Stress-mark System. The tonetic stress-mark system used in this book was developed, in the course of my researches into the teaching and recording of intonation, in an endeavour to find the most practical system of marking intonation. In this system tonetic features that can be made the subject of conventions are left unmarked, thus reducing the amount of marking required. On the other hand, all distinctive features, and all irregularities in conventional features, are marked, so as to give a reasonably full and efficient tonetic

picture free from irrelevant detail. The tonetic stress-marks occupy the same positions as the ordinary stress-marks used in phonetic transcriptions. They are quite distinctive, and not only indicate the intonation by their form and position, but show stress more effectively than do the ordinary stress-marks, since they relate the stresses to the intonation and make it clear whether they are static or kinetic. Thus they have the great advantage of showing both stress and intonation in the line of print itself. Texts in this system can be written with great speed and ease, and can be read rapidly and comfortably. The marks can be used equally well in orthographic or phonetic texts.

Some of the symbols employed in this system were first used by Henry Sweet in his *New English Grammar, Logical and Historical*, and a number of them are approved by the International Phonetic Association for use as tone indicators in languages like Chinese, where tones are an essential part of the words of the language and must be indicated in a phonetic transcription. Broadly stated, the difference between the use of the marks in a tone language and in English is that in the former they indicate the meaning of the word, while in the latter they indicate the meaning of the sentence.

The table inside the front cover shows the complete set of tonetic stress-marks applied to the sound **m**. Though at first glance it may appear rather voluminous and complicated a closer inspection will reveal that there are in fact only one static and five kinetic stress-marks (in two positions, each of which may be single or double), three pitch-marks (each in two positions) and one partial stress-mark. The other marks are systematic combinations of the above.

Each **m** in the table represents a separate syllable. In the case of Tune IV the three **m**'s represent successive syllables, but in Tunes IIID and VD the two syllables shown may be separated by others. It will be seen that the right-hand side of the table is an exact replica of the left-hand, except that the marks are placed below the line instead of above it, while the second and fourth columns differ from the first and third only in the doubling of the first stress-mark. A realization of

these two points will greatly simplify the study of the table.

The kinetic tones are conveniently referred to by the roman numerals, the different varieties of each being identified by the small capitals shown at the head of each column of the table (e.g., IH, IILE, etc.). The divided varieties of Tones III and V can be identified as IIID and VD.

The High Normal tones are in most frequent use, and may be considered as the basic variety. It is therefore unnecessary (except in the case of Tone I) to use their distinctive letter in referring to them.

The High Emphatic tones have greater stress and a wider range than the normal ones. In order to obtain this wider range the tones that begin with a rise start from a lower pitch and those that begin with a fall, from a higher pitch, besides extending the pitch range at the other end.

The Low Normal tones usually show a diminished stress, and in particular the Low Level Tone generally indicates a partially stressed syllable.

The Low Emphatic tones are used mostly in utterances having an impatient or dramatic nature.

The raised dot, which indicates partial stress on a syllable, means that the stress is given to that syllable without any modification of the tone pattern. Thus, if it occurs in a rising series, the rise continues smoothly through the partially stressed syllable, which is merely given some extra prominence above the surrounding unstressed syllables.

Unstressed syllables that follow the rules given for them in the body of this work are left unmarked. In cases where unstressed syllables depart from these rules this departure is indicated by pitch-marks. Of these, the two level ones are the most frequently met with. These displaced syllables are generally used before kinetic tones to increase their effectiveness.

It should, perhaps, be pointed out that punctuation is a very unreliable guide to intonation, since it was developed principally as an aid to grammatical interpretation. In some cases, for instance, intonation groups run right through commas, while in others divisions between the groups may occur at points that are not indicated by any punctuation mark.