

These proportions are very striking and show very clearly that it is no longer possible to follow the praiseworthy idea which the originators of the International Phonetic System had of adapting as far as possible the resources of a commercial printer's office. The adaptations were for the most part the inversion of the lower-case letters e, c, etc. as ə, ɔ, and the use of small capitals. Actually in hand-setting these adapted forms offer a ready means of distinguishing various sounds, as a, æ, A or i, r, etc., but in machine-composition these particular forms must be inverted by hand as in proof-correction or separate inverted matrices must be used in the casting machine; either method would add to the cost. But the system is a good one, for it does ensure that the forms of the letters fit agreeably with the ordinary roman face.

The latter point is worth emphasis, for scarcely enough attention has been paid to the appearance of new characters. Excessively curled Greek letters which have been adopted do not fit in with roman face: thus upsilon υ, a pleasant enough character in Greek, is an obvious misfit in roman and might well have been replaced, as it is in America, by a small capital υ; Greek theta θ might well be replaced by the runic þ which is more adaptable by its shape to the roman face; similarly the well-attested ɛ (a mediaeval form of æ) is preferable to Greek epsilon ε. Furthermore, in forms which have been invented enough attention has not been paid to appropriateness; curls instead of serifs do not accord with roman face and I think that the symbols ɲ and ɳ might well have had a plain serif at the foot. Archaic English ʃ for s or an elongated form ʃ (that is, capital J inverted) would be preferable to ʃ, which is an italic form made vertical. A further objection to curls and similar excrescences is that they frequently stand out so much on one side that there is an uneven spacing of letters. In the ordinary roman font such letters are kerned and overlap the adjacent letter as in "oft" or are ligatured as in ff fi fl, etc., but in phonetic transcription many ligatures would be needed to cover all possible cases. It is clear that some revision of the existing system is desirable on aesthetic grounds.¹

At the same time I suggest that the only way to reduce the cost of production of phonetic works is to aim at collaboration and uniformity. A printer who specializes in one class of work, and who

¹ I would suggest that a very light-faced sanserif type (even lighter than that used below) is a better basis for a phonetic alphabet than the current roman (in a light or bold face), where the serifs might be misleading; serifs on one side or another of a vertical stroke have apparently been used to distinguish signs, but a serif is not easily isolated as a feature of distinction in the common sizes of type. The following is an example of the face suggested:

it iz difɪkt tu ɪkspleɪn wai sʌm mən daʊnt laɪk sju:ts meɪd əv
hæris twi:d wailst sʌm prɪfə:r ən i:vɪn kɔ:sə mətɪəriəl | ai səprouz ɪt iz
bɪkɔz sju:ts meɪd əv hevi stʌf ɡɪv ə greɪtə sens əv kʌntri kʌmfət ənd
rɪkwaiə les ju:s əv ə pres | bʌt sɪti ɡouəz ni:d ə sət:n rɪfainmənt ɪn
sju:ts ənd sou si:k ə laɪtə mɔ:r elɪɡənt jet mɔ: kɔ:stli mətɪəriəl | evri
mæn tu hiz teɪst |

is enabled to specialize by regular support, can offer a good and economical service. But much more can be done by phoneticians themselves.

In the first place a single size of type should suffice for both titles, text and notes.

Secondly, a single face of type should be sufficient, and items which are now printed in italics or bold face might well be printed in roman old face and enclosed in angle or square brackets without any loss to the significance, or in the light sanserif already mentioned.

Thirdly, in the broad transcription we have reached a stage when experimenting in letter forms is no longer necessary and uniformity is attainable. For example, I do not think there is any justification for Mr LAWRENSON's suggestion (*Le Maître Phonétique (ut sup.)*, p. 22) that the vowel in bæd should be represented by ε; "there is", he says, "no reason to use æ unless we wish to reserve ε for the representation of some other sound." This, of course, gets to the root of the matter, for, if Mr LAWRENSON's intention is clear, it is a recession from the basic principle of "one sound, one symbol".

Lastly, in the narrow transcription which is the form that most exercises the ingenuity of the typographer, we may have to consider whether some simplification might not be necessary. Thus one may ask whether ligatures such as ʃɪ ʒ and the very unpleasing ʃ are really necessary and whether it is essential to link the elements of diphthongs by bind-marks, for in each case a new matrix may have to be struck. The distinction between ʃɪ and ʃɪ could well be indicated by the symbols ʃɪ and ʃɪ. Most of the symbols in the narrow transcription are, of course, used in accepted connotations, but the expert finds it necessary in giving fine shades to deviate slightly from the standard representations; yet it is doubtful whether he will ever be in a position to eliminate altogether this precise definition of his symbols. A system of symbols which would cover every possible variety of sound is hardly practicable and it would certainly be extravagant.

20. Dr MARIA SCHUBIGER (Basle): *English intonation and syntax.*

Syntax investigates the function of the grammatical forms: of declension, word position and so on. Although intonation is not a grammatical form in the narrow sense of the word, but rather a necessary accompaniment of all articulated speech, it has its function too. Therefore no syntax of a living language is complete which does not take into account the musical elements. The function of English intonation is, roughly speaking, twofold:

I. The distribution of stressed and unstressed syllables, especially the *place of the nucleus*, which has the intonation turn, determines the relative importance of the elements of the sentence.

II. *The direction of the tune on the nucleus* (fall, rise, fall-rise) characterizes the utterance as a whole.

The new aspects which the investigation of this double function of intonation can give to syntax are manifold. My examples will be chosen chiefly from Part I, which is, syntactically, the more interesting.

I

How does intonation, by bringing into relief the relative importance of the elements, determine syntactical categories?

A. The simplest kind of so-called grammatically complete sentence consists of subject and predicate, i.e. of the subject of our communication and of the communication itself. Naturally the communication is the weightiest part and has the intonation turn, for instance:

- (1) ¹John is in¹telligent.
¹Charles is a¹soldier.
¹Father is ¹reading.

Yet another way of stressing such simple sentences is quite common:

- (2) ¹The ¹King is dead.
¹Mary is here.
¹Father is coming.

Why this deviation? It is because the intonation does not depend on the *grammatical* categories subject and predicate but on the *psychological* ones. The two often coincide, as in the first group of examples: I make a statement about Father, namely that he is reading. But just as frequently they do not, as in the second group. Here I do not want to make a statement about Father; the whole sentence is the communication, and the substantive, as its most prominent element, has the intonation turn. Thus intonation differentiates between the sentences that are psychologically all predicate and those which consist of subject and predicate.

The nucleus on the subject is especially frequent with sentences that express an action or a state referring to the moment of speaking only, for example:

- (a) with an adjective (or equivalent group):

¹The ¹door is open.
¹The ¹kettle is hot.
¹The ¹stove is out of order.

- (b) with a verb in the progressive form of the present or in the perfect:

¹The ¹water is running.
¹The ¹pipes have burst.

While utterances that contain a more general statement are exclusively stressed on the predicate:

- (a) with an adjective:

¹John is in¹telligent.
¹Mary is ¹nervous.
¹The ¹door is ¹green.

- (b) with verbs in the ordinary present:

¹Dogs ¹bark.
¹Alcohol ¹burns.

Note. In "¹The ¹taps leak" the definite article individualizes the sentence.

- (c) with a substantive:

¹Charles is a ¹soldier.

But often only the individual word determines the intonation, namely the greater or smaller degree of spontaneousness with which we associate the predicate with the subject. Cf. ¹Father is ¹reading with ¹Father is coming. Sometimes the situation alone makes the difference. Cook would come into the drawing-room and say: ¹Baby is crying. Her drawing the mistress's attention to the baby is the important fact. While Nurse would come in and say: ¹Baby is ¹crying. Her mentioning Baby is obvious, *crying* is the important word.

If there is an object or an adverbial the predicate is always weighty enough to have the intonation turn:

¹Father is ¹writing a ¹letter.
¹The ¹King died ¹yesterday.

B. This brings us to complex predicates, predicates that contain an object, or an adverbial, or both. The *object* is an indispensable part of the predicate, therefore it has the intonation turn: ¹Anne is ¹writing a ¹letter. Not of course if the object is a pronoun: ¹I ¹see it; or a colourless substantive practically equivalent to a pronoun: ¹I ¹must ex¹plain matters. With *adverbials* the problem is more complex. Several cases must be distinguished:

(1) The adverbial is a necessary *complement* of the verb. It is then psychologically similar to the object; like the object it is the chief part of the predication and has the intonation turn:

¹He ¹lives in ¹London.
¹He ¹came ¹yesterday.
¹He ¹spoke ¹foolishly.

Often these sentences can be made into object sentences. *He spoke foolishly* corresponds to *He spoke nonsense*. Especially the adverbs of place resemble the object: *He lives in London* corresponds to *He inhabits London*, *He arrived at Brighton* to *He reached Brighton*. Of course only if the predicate is a verb. With a nominal predicate this object relation is not possible. Thus we say: *He was ¹happy in London*. Here the stressing of the adverbial would express a contrast.

The similarity of the adverbial of place (after a verbal predicate) with the object is brought out by the fact that it has to be placed first when there is also an adverbial of time in the sentence. Like the object it comes straight after the verb: *I went to Brighton yesterday*, not *... yesterday to Brighton*. With a nominal predicate, where no such object relation exists, both positions are possible: *he was not well yesterday on the playground* and *... on the playground yesterday*.

(2) The adverb constitutes a *modification* of the idea expressed by the verb. The verb is still the chief element and has the intonation turn:

¹It was ¹raining slightly. ¹He ¹walks a good deal.
¹It was ¹raining a little. ¹He ¹does not ¹eat much.
¹It was ¹raining a bit.

Here the adverbial is not a complement of the verb, it is not an answer to the question *How?* or *How much?* as in (1).

Often this modification is expressed by the choice of another verb, for example *drizzling* for *raining slightly*. In other languages we have modifying suffixes. Cf. It. *piovigginare*, Fr. *toussoter*, Ger. *hüsteln*. Like the English modifying adverbs these suffixes generally express a slight or a high degree.

Similar are the adverbs that modify adjectives: *It is* ¹/*perfectly lovely* (It. *bellissimo*), *He is* ¹/*absolutely ignorant*, and so on. *It is* ¹/*perfectly lovely* is impossible, while we could say: *She was* ¹/*perfectly dressed*, because here the adverb is a complement, an answer to the question: *How was she dressed?*

Note. In this connexion might be mentioned the modifying adjectives: *a* ¹/*perfect angel*, *a* ¹/*downright scoundrel*, *a* ¹/*consummate cheat*, *a* ¹/*true romance*. We cannot say: *a* ¹/*true romance*, without making *true* into another type of adjective, namely a restrictive adjective, expressing here a contrast with *invented*.

(3) The adverb expresses a *comment* on the contents of the sentence:

He ¹/*speculates*, | *unfortunately*. (Rise on the adverbial.)
I ¹/*love him*, | *in fact*. (Ditto.)

The comment is less weighty than the commented statement; therefore the verb is the nucleus. It could be made into a separate sentence: *He speculates; this is unfortunate*. Therefore a slight pause often precedes the adverb. The commenting function of this kind of adverb accounts for the difference of intonation in the following sentences, which are similar in outward form:

I ¹/*cut him yesterday*; *I* ¹/*actually cut him*.
I ¹/*cut him yesterday*; *I* ¹/*generally cut him*.

The first adverb is a comment and therefore the verb is the nucleus, even when it has been previously mentioned. The second adverb is a complement and has the intonation turn here, *cut* having been previously mentioned.

Thus intonation suggests new points of view in the classification of adverbs, which are not suggested by a difference in the outward form. For often the form of the adverb is the same. In: *It was raining uninterruptedly*, *It was raining slightly*, *It was raining, unfortunately*, all three adverbs have the form of the adverb of manner. And yet they have three different functions.

Sentences with an adverbial can also be intoned with a *double nucleus*: *I* ¹/*spoke to him*, *on the* ¹/*telephone*. Then they contain two communications and are really two sentences condensed into one: *I spoke to him; I did it on the telephone*. They correspond to what in compound sentences is called co-ordination.

The syntactic function of intonation in *compound sentences* is parallel to its function in simple sentences. We say:

I was in ¹/*England when the War broke out*.
but: *I ar* ¹/*rived when the* ¹/*War broke out*.

The most interesting point with compound sentences is the dif-

ference between utterances with one and utterances with two nuclei, for it gives new aspects to the problem of *co-ordination* and *subordination*.

Compound sentences with *one nucleus*, either on the first or on the second part, are complex, i.e. they consist of a main clause and of a subordinate clause. They contain one communication, the subordinate clause corresponding to an element of the simple sentence:

We shall go where you ¹/*like*.
My sister had two children before she was ¹/*twenty*.
We shall ¹/*see you before you go*.
He spends his money as if he were a ¹/*millionaire*.
We shall start im ¹/*mediately if you are ready*.

Note. If the sentence is rather long there is generally a slight rise on that part which does not contain the nucleus.

Compound sentences with *two nuclei*, one on the main clause and one on the so-called subordinate clause, are co-ordinate. They contain two communications, linked together and brought into a logical relation by a conjunction.

Cause: *My grandfather used to get up* ¹/*early, because he was a great* ¹/*worker*.

Consequence: *We went there during the* ¹/*holidays, so that we did not see the* ¹/*children*.

Concession: *His brother is very* ¹/*stout, although he does not* ¹/*eat much*.

These sentences are commonly called complex. The term "co-ordination" is reserved to the variants: *...early, for he was a... . . . holidays; thus we did not... . . .* Yet there is no fundamental difference between the two variants. Clauses of consequence, of cause, and of concession, when placed after the main clause, are not subordinate but co-ordinate, no matter what outward form the link-word has.

Note. Cases like *We came* [] *home because it was* ¹/*raining* are sentences in a context. This is why the first clause has no fall.

Thus the border-line between co-ordination and subordination cannot be drawn by means of formal distinctions. The only criterion is the psychological one, and here, as with simple sentences, intonation is a valuable help. For it is subtler and more easily adaptable to the actual expressive value of the utterance than the more rigidly fixed other linguistic forms.¹

II

A few remarks only about the direction of the intonation on the nucleus. So far all examples have had falling nuclei. This is the normal tune for statements. If the nucleus is rising the utterance is characterized as incomplete. The difference between *It isn't* ¹/*bad* and *It isn't* ¹/*bad* implying: *but at the same time it is not good*, has often been pointed out. Also in co-ordinate sentences, or members

¹ For further examples cf. MARIA SCHUBIGER, *The Role of Intonation in Spoken English* (Fehrsche Buchhandlung, St Gallen, Switzerland, and W. Heffer and Sons, Cambridge, 1935).

of sentence, there are two alternatives. In *We did as we were told, but it wasn't any use* the rise on the first nucleus points to the second sentence.

The choice of tune depends on various factors: the speaker's conception of the utterance (gradual or comprehensive), the impression to be made on the hearer, social considerations, etc. This is already the domain of style and would bring us to the problem of Intonation and Style of Speech.

21. Miss ELSIE FOGERTY (London): *Rhythm*.

Among the major terms employed in the discussion of various phenomena—Aesthetic, Mechanical and Physiological—none is used with a greater degree of vagueness than the term "Rhythm".

The suggestion on which this paper is based is that confusion exists between essential Rhythm and those patterns which are created by repetition out of Rhythm.

This suggestion can only be developed here in regard to speech, but if it possesses any validity it must be applicable to every other form of movement of which we have experience.

The *Oxford Dictionary* defines Rhythm as:

"The measured recurrence of arsis and thesis determined by vowel-quantity or stress, or both combined. Rhythmical or metrical form. The measured flow of words or phrases. The systematic grouping of notes according to their duration. Movement marked by the regulated succession of strong and weak elements, or of opposite or different conditions."

This is a definition of certain manifestations of Rhythm, not of Rhythm itself. Recurrence is given as the fundamental characteristic of Rhythm—a confusion between Pattern and Rhythm. The intolerable and irritating monotony of a series of single drum beats or detached notes, of a falling water-drop, of the reiterations of *echolalia*, or the repetitive hesitation of a *stammer*, are instances of repetition completely void of any natural or acquired Rhythm.

The definition, however, does indicate the presence of three constant factors in Rhythm: *First, the factor of Time*, present in measured recurrence, such as the isochronous interval between stress and stress, which forms the basis of English prosody.¹

Second, the element of Force, without which that temporal spacing would not be perceptible.

And third, the element of Space itself, without which the application of force is unthinkable. All lip, tongue and jaw movements in speech have a definite spatial character.

The fundamental conditions of Rhythm are time, force and space, combined under the direction of intention. These are also nothing

¹ Quantity is not a basic principle in English verse, though it is constantly used to reinforce stress; e.g.

"To find the place of souls that I desire."

SWINBURNE, *In the Bay*.

less than the fundamental conditions of movement itself. Of those forms of motion more especially which are appreciable by our sensory perceptions, and which we call vibration.¹ Sound and light chief among them.

Every movement demands for its performance a degree of force, a measure of space, and a passage of time. When these three elements are synchronized either with perfect automatic success, as in a machine, or under the exact guidance of intention, as in speech, the result is rhythmical.

An attempt made to trace this principle through every form of existing movement makes it possible to contrast clearly inertia and its basis in what we term the law of gravity, with movement based on the law of rhythm.

The following definitions may then be suggested.

Motion is the condition of a body when at each instant of time it occupies a different position in space. Motion always implies the existence of force. *Rhythm is the universal law of movement and implies the automatic, habitual or volitional synthesis of time, force and space in action.*

Pattern, auditive or visual, implies only the repetition of a selected group of movements at intervals sufficiently regular to strengthen our perception of their original rhythm.

All utterance is carried out by audible movement, movement in which therefore the elements of force, of space, and of time are uninterruptedly present; irregular timing as in "cluttering", spatial error as in lisping, exaggerated force as in shouting, hinder perfect rhythmic synthesis, and are fundamentally destructive of good movement. The elements of which a rhythmic sound pattern is built up must themselves be rhythmic.

Auditive Rhythms in speech, musical sound, song, verse-speaking or reading aloud are not perceived purely by the mechanism of the ear. They have to be "learnt",² kinaesthetically.

Rhythmic repetition stimulates the power of learning movements very much. The value of rhythmic training begins with the first models placed before the infant in cradle songs, nursery rhymes or "lilts"; since our memory of speech sounds is a kinaesthetic memory,³ the motor patterns presented to the child tend to arouse similar motor patterns in the listener. We feel rather than hear ourselves speak.

In applying these considerations to speech we have to distinguish three separate kinds of rhythmic impulse:

First. The rhythmic accomplishment of the movements of utterance, breathing, phonation, resonation, articulation, etc.

¹ "A particle which repeats the same movements at regular intervals is said to vibrate; and by such vibration a wave train is produced." P. J. LAUNCELOT-SMITH, *Heat, Light and Sound* (Dent).

² "Speech and music are characteristically human functions which cannot develop until cortical pathways make possible very rapid and complex learning." P. E. VERNON, "Auditory Perception", *Brit. Journ. of Psychology*, 1935.

³ H. BERGSON, *Matière et Mémoire*, p. 113.