

lat. *ē* > franç. *ie*"); MSL, XII, 1901, p. 13. Mais c'est supposer entre *e*, *o* brefs et *e*, *o* longs latins une différence du même ordre que celle qui existe entre *e*, *o* ouverts et *e*, *o* fermés en français par exemple. D'ailleurs il n'est pas rare de rencontrer dans diverses langues des diphtongues *ie* ou *uo* provenant d'un *e* ou d'un *o* long fermé. En réalité, rien dans la nature de *e* fermé n'explique un développement nécessaire en *ei*, pas plus que rien dans la nature de *e* ouvert ne l'oblige, dans le cas de diphtongaison, à se développer en *ie*. Ce qui est dit de *e* doit l'être aussi de *o*.

L'étude de la diphtongaison de *e* et *o* brefs latins en *ie* et *uo* ou *ue* nous met sur la voie d'une bonne interprétation. Puisque ces diphtongues résultent de l'action d'une tendance à l'ouverture qui s'est exercée sur la partie vocale finale, il est logique d'admettre que *ei* et *ou* sont dus à l'action d'une tendance à la fermeture, évidemment séparée de la première par un temps assez considérable. Cette tendance à la fermeture ne peut être niée quand il s'agit de *a*; qu'il y ait diphtongaison ou non, le résultat est un *e*. Mais ce phénomène de fermeture, considéré jusqu'ici comme isolé, entre maintenant dans un ensemble. Le passage de *a* à *e* et le développement de *e* et *o* longs latins en *ei* et *ou* sont des manifestations de la même tendance, et l'on voit dès lors quel rôle important cette dernière a joué dans la phonétique française.

La tendance à l'ouverture, a-t-on vu, est héritée du latin. La tendance à la fermeture ne peut l'être en aucune façon. D'où provient-elle? Ici se pose la question des substrats. D'autre part, quel rapport de parenté y a-t-il entre cette tendance et celle qui a produit le changement de *u* long latin en *ü*? Il est plus sage de n'en rien dire. Mais quoi qu'on pense de la question de l'origine, la tendance ne saurait être ignorée et c'est en définitive à la phonétique expérimentale que l'on doit d'avoir éclairé une partie du champ de la phonétique historique du français.

No discussion.

33. Professor F. KARG, Leipzig: *Die Schallanalyse*.

Die Schallanalyse hat durch das Hinscheiden von EDUARD SIEVERS, der ihr Begründer und bis jetzt ihr hauptsächlichster Vertreter war, einen unersetzlichen Verlust erlitten. Es ist an diesem Punkte nötig, zu sehen, wo die schallanalytische Forschung steht, was sie bisher erreicht hat und welches ihre Zukunftsaussichten sind. SIEVERS, im Anfang auf den Arbeiten von J. RUTZ fussend, begann mit aufschlussreichen Forschungen über Melodie und Rhythmus. Er schritt weiter vor zu einem ziemlich geschlossenen System von Klangfarben – im ganzen sechs –, die er zunächst als Personalkonstanten auffasste, später aber als beim einzelnen Sprecher wandelbar erkannte. Im Verein mit G. BECKING kam er zu einer neuen Serie solcher Konstanten: man fand, erst in musikalischen, dann auch literarischen Werken, drei verschiedene Typen von Spannung, die sich in entsprechende Raumprojektionen, Kurven, fassen liessen. Diese hat er grundsätzlich bis zuletzt behalten. Vor einigen Jahren ermittelte er daneben den von ihm sog. Breitenindex als verbindlich für ein Individuum.

SIEVERS' Einfühlungsvermögen war einzigartig; seine Nachfolger müssen deshalb in vielem andere Wege gehen als er. Ehe man der Frage der Personalkonstanten nähertritt, wird man solide Kleinarbeit auf rhythmischem und

melodischem Gebiet leisten müssen. Erst wer die Grundlagen der Arbeit beherrscht, wird höhere Textkritik auf schallanalytischer Basis betreiben können.

No discussion.

34. Miss I. C. WARD, London: *The Phonetic Analysis of African Languages*.

Apart from the purely scientific value that all serious phonetic studies have, the phonetic analysis of African languages at the present day has two very practical aims; it is directed towards

- a. the assistance of European learners (who are not phoneticians), and
- b. the making of suitable orthographies for the native reader, and the improvement of existing inadequate or inaccurate orthographies.

[This latter aim was one of the first problems to which the International Institute of African Languages and Cultures turned its attention, and the Memorandum on Orthography published by the Institute (New and revised edition 1930) is a synopsis of the phonetic principles upon which African languages should be written].

For both these aims, an accurate and close phonetic analysis by a highly trained and experienced phonetician is essential, since it is only by means of such an analysis that the simplification which is also necessary for both purposes can be achieved.

It is evident that the investigator must first record very precisely and in detailed manner all the many varieties of sound the native makes, together with his habits in stress, in length of sounds and in pitch or intonation. Then he finds out which of the differences he has recorded are important to the native i.e. which distinguish meaning, and which from the native's standpoint, can be disregarded. Then the simplification of his transcription can begin. This is done by the application of the theory of phonemes. Those who heard Professor DANIEL JONES' paper will realise that a knowledge of this theory and skill in applying the principles underlying it is the only way of avoiding the two opposite errors – not recording essentials and recording unessentials.

I should like to illustrate how phonetic analysis on these lines has produced valuable results.

a. It has made possible the writing of little known languages without ambiguity and without superfluous letters.

b. It has thrown considerable light on the grammar and construction of languages, elucidated linguistic problems hitherto unsolved and revealed unsuspected richness in native languages, and in this way has made valuable contribution to linguistic science.

These points can be illustrated briefly from the experience I have gained in the analysis of a few West African languages.

Ibo.

Ibo, a language of Southern Nigeria, was said to have a six vowel system, viz. *i*, *ε*, *a*, *ɔ*, *o*, *u*. Certain parts of the verb are formed by particles which may be *ne* or *na*, *ge* or *ga* the choice of these alternatives depending upon the root vowel of the verb: thus verbs with *a* and *ɔ* in the root, have the particles *na* and *ga*, those with *ε* and *o* the particles *ne* and *ge*: but the grammar books say that of the verbs with the roots *i* and *u* some 'like' the particles

ne, ge, and other the particles *na* and *ga* and no explanation is offered to account for this seemingly arbitrary preference. A close phonetic analysis revealed the fact that what have been considered *i* and *u* verbs are in reality not two but four classes, verbs with the vowels *i* and *u* and two other classes, with a very close *e* and a very close *o* (written here *ə*) respectively in the root. These were tested over and over again. The distinction between *i* and the close *e*, between *u* and the close *ə* are indeed very difficult to hear but the native hears and makes this difference, slight as it may be to our ears. When these four classes are established, i.e. when it is definitely known that Ibo has 8 not 6 essential vowels, the use of the particles is found to follow a regular system, which can be illustrated as follows:

Verbs with root <i>i</i> or <i>u</i> (close)	take the particles <i>ne, ge,</i>
" " " <i>e</i> <i>ə</i> (half-close)	" " " <i>na, ga,</i>
" " " <i>ɛ</i> <i>o</i> (half-open)	" " " <i>ne, ge,</i>
" " " <i>a</i> <i>ɔ</i> (open)	" " " <i>na, ga.</i>

Thus phonetic analysis has solved a grammatical problem. In my opinion, this alternating vowel in the particles is a device for assisting the differentiation of the vowels which *are* actually very close together and which the native might also find difficult to distinguish. A further confirmation of this lies in the fact that it has been found that words of two or more syllables rarely have vowels of consecutive classes in neighbouring syllables: i.e. close and half-open, half-close and open vowels occur in one word, but rarely close and half-close, half-close and half-open, half-open and open. The differentiation between *i* and very close *e*, between *u* and very close *ə* has also enabled Ibo to be written without ambiguity.

My second illustration is an illustration of tone analysis, and is taken from Efik, another of the three most important languages of Southern Nigeria. From this example I shall try to prove that a systematic analysis of tone usages has contributed considerably towards the understanding of the language and revealed richness and powers of expression which have not hitherto been suspected. It was my aim at first to find the 'inherent' tone of each noun, verb, adjective, i.e. the tone on which the word is pronounced in isolation, and which is as much part of the word as the sounds which compose it. But I found that the inherent tone was frequently replaced by some other tone, and by collecting a large number of examples, I was able to say in what way these inherent tones changed, i.e. what tone replaced the original one, and for what grammatical purpose or under what particular circumstances these changes took place. Thus the word for tree is *eto*, [··] with two high level tones: but it can have two low level tones [··], and also the tones high-low [··]: the first of these is used after certain types of adjective and the second after another type of adjective and in genitive relationship. *akwa eto* [·\·] big tree, *ediwak eto* [···] many trees *etiye eto* [····] top of the tree. All the nouns of the language (there are 7 tone classes of nouns) undergo changes under the same sets of circumstances, each class having its own kind of change.

In the verbs, I set out to find how many tone classes of verbs existed, what 'tone patterns' there were, i.e. the arrangement of the tones of prefix, particles, root and suffix in the various verb forms, and under what circumstances these verb forms were used. In the course of this investigation, I

found that one verb-form, i.e. one arrangement of sounds, often had more than one 'tonal pattern' and again by patient collection of examples, I found that the varying tonal patterns were used consistently to show certain definite grammatical usages. Thus, to take one example only, what has been considered one tense, the Aorist, the simplest verb form after the imperative, and consisting of prefix+root, comprises in reality 5 different tone usages.

edep [··] he buys, *edep* [··] if he buys, *edep* [··] used in a question, *edep nso* [···] what is he buying? *edep* [··] he buys (used in answer to a question, somewhat emphatic) *yak enye edep* [···\] let him buy, *enye edep nso* [··\·] what is he to buy? (a kind of subjunctive).

EFİK has been said to make frequent use of the Aorist because it has no other means of showing finer relationships, but in making such a statement, no allowance has been made for the different tone usages I have just illustrated. Other examples could be brought forward to illustrate further, but this one is sufficient to show that a systematic tonal analysis can throw light on grammar and construction of a language and reveal possibilities of conveying shades of meaning hitherto unknown. I am finding similar possibilities in Ibo.

Discussion:

Professor E. BLANQUAERT: Question 1: are the Ibo-examples *onesi-onase-ones-onasa* etc. different forms of one word, or quite different words?

2. this Ibo-language is not a Bantu-language. Still from the examples it appears that several words (e.g. Kiswaheli *ku-ona*: to see) are the same: 1 pers. sing. (*ni*)*na-ona*; 2 p. sing. *una-ona*, 3 p. sing. *ana-ona* etc.

Miss I. C. WARD: These examples are forms of four different verbs.

35. Dr. B. H. J. WEERENBECK, Nymegen: *Le système vocalique français du XIe siècle d'après les assonances de la Vie de Saint Alexis*.

Dans l'avant-propos de son édition de la Vie de saint Alexis, GASTON PARIS¹⁾ a écrit une phrase qui a retenu mon attention. Il constate que la langue française s'est constituée à la même époque que la poésie, l'architecture, la société et même la nationalité françaises. Cette coïncidence, qui ne peut être considérée comme fortuite, m'a invité à regarder d'un peu plus près, sous sa forme française du XIe siècle, la légende latine de saint Alexis, qui a joui d'une popularité immense au moyen âge. GASTON PARIS fait remarquer qu'il existe de cette légende, en dehors de notre poème et de ses renouvellements successifs, deux traductions indépendantes, et diverses rédactions en prose; il ajoute qu'elle a fourni le sujet d'un Miracle, qu'elle a été mis en vers provençaux, qu'elle a eu un énorme succès en Italie, en Espagne, en Allemagne et en Angleterre; et l'on sait qu'elle a même donné matière à des pièces de théâtre modernes. C'est-à-dire qu'on peut l'étudier à plusieurs points de vue, mais nous allons nous borner ici à examiner le système vocalique du „plus ancien poème français de quelque

¹⁾ Cf. *La Vie de saint Alexis*, poème du XIe siècle et renouvellements publiés par GASTON PARIS et LÉOPOLD PANNIER, Paris, 1872 (Recueil de travaux originaux ou traduits relatifs à la Philologie et à l'Histoire littéraire, nouvelle série), p. VI passim.