

12. Trends in the pronunciation of earlier post-vocalic r.

The present situation with regard to retroflexion in New England is not old. The unsettled usage of our informants in Central New England and the confinement of retroflexion to certain isolated communities in Eastern New England point to the fact that changes have been going on and are now taking place. When the speech of the younger and better educated informants is compared with that of the older unschooled generation, the trends are clearly in evidence: (a) Along the eastern seaboard retroflexion is losing ground; (b) in the central area, adjoining the area of strong retroflexion, retroflexion is spreading.

What will the ultimate outcome be? Will the east completely lose retroflexion and then, perhaps after generations, be flooded by the wave of retroflexion spreading eastward from Western New England, which is in agreement with the vast territory to the west?

Here again one would like to have a more reliable record of the dialects of England than ELLIS and WRIGHT offer before undertaking the task of reconstructing early colonial conditions.

4. Dr L. KAISER (Amsterdam): *The shape of the palate and its effect on speech sounds.*

Concerning the relation between form and function, between anatomical and physiological properties, there is still great uncertainty. In various scientific periods the aspect of this relation has varied as materialism or idealism induced investigators to detect causality in one or the other direction. However, the existence of such a relation was never denied.

So it seems justifiable to consider whether there is any definite relation between the function of speech and the shape of the speech organs. As far as the voice is concerned, the general opinion is, that there must exist a close relation between the pitch and timbre of the voice and the dimensions of the larynx. As regards speech in a stricter sense, this question has been usually suppressed owing to the desire to consider speech from the point of view of language and not as a function of the speech organs. Among the investigators who have described the properties of speech in relation to the speech organs, I mention VAN GINNEKEN and STETSON; among those who have described the form of the face in relation to speech, HELLPACH.

It was in following out the principle mentioned, that I tried to ascertain whether there is a constant relation between the shape of the palate and special properties of speech.

The first thing I wanted to know was, What is the shape of "the Dutch palate"? Here I found no data at all. I am fully aware of the fact that the Dutch are not a race or a stock, still less a pure race; they are no more and no less so than the other European nations. Nevertheless I thought it useful to have certain facts concerning what I have indicated, and should like to continue to indicate, as the Dutch palate, i.e. the palate of a group possessing one definite language.

From the partly contradictory data given in the literature of the subject, by dentists and laryngologists, and from special articles by geneticians, it appears that in the case of the human palate the share of *Umweltfaktoren* must be very considerable, much more so than for other parts of the human skull.

If we wish to bring speech and palate into relation with each other, we shall have to consider rather definite groups of people, speaking the Dutch language in a definite way. In this case even the *Umweltfaktoren* will be similar to a certain degree, so that we may consider the group as a whole, even though it be a very complicated one. As I wished to know something about the relation between the shape of the palate and the normal Dutch speech I could not even take my subjects from the country, where a much more nearly pure stock is found, but where speech bears dialectal features.

So I compared the palates of 186 male and 186 female students of Amsterdam University. These subjects were young adults of 19 to 25 years of age, a few, however, being considerably older (up to 40). Most of them had a complete set of teeth. Several others, however, had had one or two teeth extracted. From the literature I gathered that the lack of a few teeth does not considerably alter the shape of the palate. Moreover it did not seem right to select for this purpose possessors of sound teeth only, because the others contribute just as much to the general character of speech.

The measurements were taken from Stent's negatives. I pass over the technique of measuring. I would only say that for this special purpose, it seemed unnecessary to take into consideration the *Frankfurter Horizontale*, which is indispensable in anthropological measurements.

To give you an impression of the manner in which the values of the different dimensions vary, I can show you the following curves.

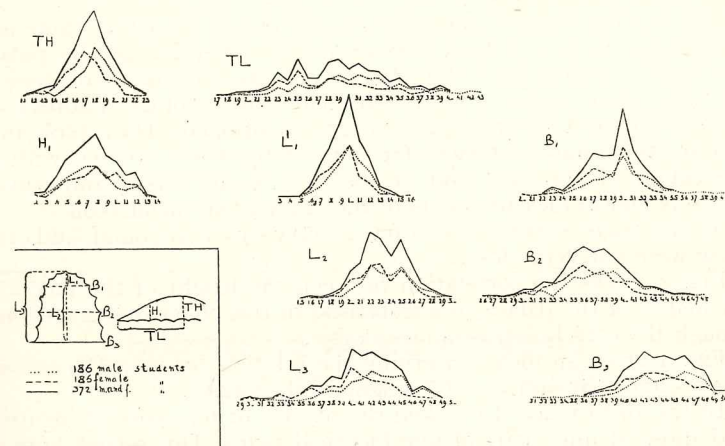


Fig. 1

At any rate it is obvious that we are justified in speaking of a Dutch palate. For comparison I only obtained data concerning German and Danish palates. From this comparison I gathered that the Dutch palate is higher than the German and the Danish, and that probably the top of the Dutch palate is situated more to the back than that of the German palate (HARTH, BLOCH).

As to correlation between the various dimensions of the palate, I found that the generally supposed correlation between highness and narrowness does not exist (as LAVRAND has already stated). The most important positive result was a correlation between top height and length, whereby the lower palates have their highest point nearer the front, the higher palates have the highest point nearer the back.

Fig. 2 indicates this relation between top height and top length.

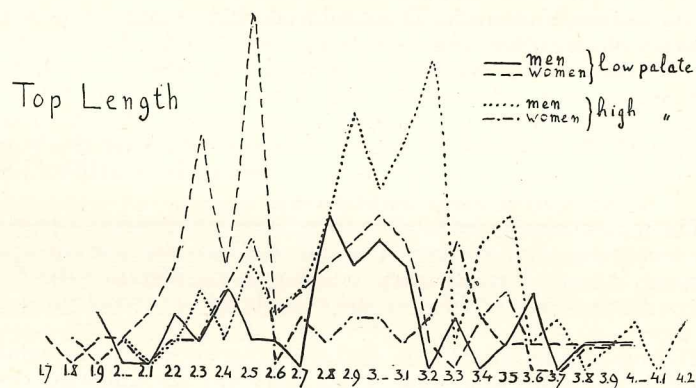


Fig. 2

The second thing we did was to try to find out whether there is a correlation, however slight, between any dimension of the palate and some anthropological factor. For this purpose two medical students, Mr VISSER and Mr ROSSI, made anthropological notes concerning 118 out of the 372 students mentioned. They took into account the family history as far as the subject was familiar with it, the colour of the eyes and of the hair, body length and eleven anthropological measurements of the cranial and facial skull.

As one might expect, only a few correlations were found, and even these were not very close.

Fig. 3 shows the correlation between the height of the face and the height of the palate; the feebleness of this connexion is striking, though the correlation is unmistakable.

Fig. 4 gives an idea concerning the relation between the colours of eyes and hair and the top height of the palate.

In the third place, I checked the palates of ten pairs of identical and those of nine pairs of non-identical twins. This served both to get an impression of the heredity of the palate and to control the

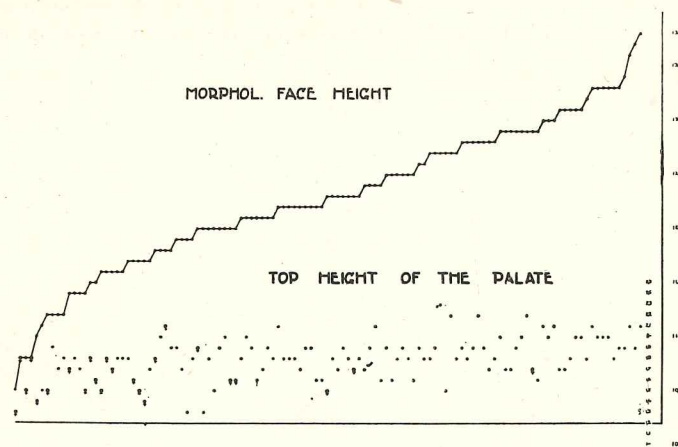
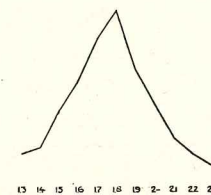
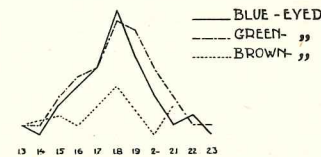
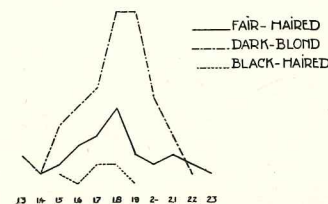


Fig. 3



HEIGHT OF THE PALATE ACCORDING TO HAIR COLOUR - EYE COLOUR

Fig. 4

efficiency of the measurements taken. Here the greater similarity of the palates of identical twins as compared with those of non-identical twins, stated by others (ZEIGER) on the evidence of much more material, revealed itself.

In the fourth place, from twenty-five students palatograms of various sounds were taken. This part of the investigation was done by Mr WILLEMSSEN, student of linguistics. From these subjects also gramophone records, consisting partly of the same sound combinations as the palatograms, were taken. It was by hearing and rehearsing these discs that we tried to find some indication of a relation between the shape of the palate and the acoustical properties of speech. The results were as follows.

It appeared that subjects with low palates pronounced the consonants more sharply and clearly, whereas their vowels often were rather dull. Subjects with high palates on the contrary usually gave clear, sonorous vowels, whereas their consonants were often indistinct. It seemed to me that the latter pronunciation was the more typically Dutch one, the first reminding one somewhat of the pronunciation of Italian by Italians and of the Dutch that is characteristic of the Dutch Indies.

Fig. 5 shows some sets of palatograms.



Fig. 5

As a contribution to the knowledge of the relation between speech and personality I might say that about the speakers with low palates there was, to me at least, something simple and honest, whereas the other speakers gave me the impression of being more complicated. This would agree very well with the statements that the high palate is a mark of civilization and of neurosis.

In the fifth and last place, I made a beginning with the comparing of palatograms and gramophone discs in the case of identical twins. Fig. 6 serves to give an idea of this beginning.



Fig. 6

Unfortunately in both pairs of twins extractions had been performed, which disturbed the likeness somewhat.

It appears that the articulation of consonants shows much greater similarity than that of vowels. Here I should add, that as far as I know the articulation of vowels in one individual does not vary more than that of consonants.

In consonants the greatest similarity appeared in the direction from front to back, the transversal direction showing much more variability. This agrees very well with the statement of KORKHAUS and others that the transversal dimensions are most affected by paratypical influences.

What I have shown you is only a beginning. Data from other countries will be necessary to develop it into something that may be of importance for our knowledge of speech. I am glad to add that already Prof. BLANQUAERT in Ghent and Dr ZWIRNER in Berlin have joined me in these investigations.

5. Sir RICHARD PAGET (London): *The relation of the deaf mute sign language to the sign languages of North America and Queensland, Australia.*

In two previous Congresses—at Geneva and Amsterdam—I have offered evidence to show that audible human speech is the result of significant but *unconscious* mouth gestures, and that the *meaning* of our speech (in any language) is carried by the gestures which we make with our tongues, lips, and the other movable parts of our vocal cavities.

According to this view, the sounds of speech are only convenient *consequences* of the gestures by which they can be subconsciously recognized without the aid of sight.

If speech is really a branch of the human instinct to express ideas by bodily pantomime—in which the mouth unconsciously moves in sympathy with the hands—then it is evidently important that we should also study the *other* branches of behaviour in which this pantomimic instinct is used.

It is well known to anthropologists that there are several forms of silent gesture language, or sign language, by which men have been able to express ideas as we normally do by audible speech.

The best known of these are: (1) the sign language of uneducated deaf mutes, (2) the universal Red Indian sign language, (3) the less known, but equally interesting, Australian aboriginal sign language, as developed by the natives of North-West-Central Queensland. Mr IVAN T. SANDERSON has recently found a sign language in use in the Assembo Hill country—Manse district of the Cameroons—but this has not yet been recorded.

As to the deaf mute sign language, my chief authority has been the Rev. ALBERT SMITH, the Chaplain to the Royal Association in Aid of the Deaf and Dumb.

Mr SMITH confirms the fact (which I have known to be questioned by at least one reputable anthropologist) that this language is truly *universal* and instinctive. Thus, an uneducated deaf mute from China or Japan or Africa, finding himself in England, *can* “talk” (in his sign language) with English deaf mutes, so as to make himself understood without difficulty. He will use a natural pantomime which every deaf mute can understand. In his own country, and especially if he lives in a community where there are other deaf mutes, he will use many special, conventional signs, peculiar to that community, signs which other deaf mutes would not understand unless they had learnt them; *but* the basis of the deaf mute sign language is natural, instinctive and universal.

As to the Red Indian sign language, I have relied mainly on the little book of WILLIAM TOMKINS, *Universal Indian Sign Language*, published in 1929. The Red Indian sign language was in use before the European discovery of America; it continued to be the universal language of the various tribes of North America until English became their universal language.

As to the Australian aboriginal sign language, my sole authority has been WALTER E. ROTH, whose *Ethnological Studies among the North-West-Central Queensland Aborigines* was published in 1897.

With the help of the Rev. ALBERT SMITH, I have compared the signs given by ROTH—about 200 in all—and the signs for similar objects, actions and ideas, given by TOMKINS (Red Indian sign language), with the deaf mutes’ signs for the same ideas.

The results may be summarized as follows:

(1) The underlying principle of all three languages is the same, viz. natural pantomime.

(2) There are certain differences depending on racial psychology and outlook.

Thus, the Red Indian sign language is entirely signed with the hands, facial expression takes no part: but this does not prevent the sign language from expressing emotions, or such mental attitudes as humour, sarcasm, poetry, etc.

The deaf mute sign language is not so austere as the Red Indian, it is freely supplemented by facial expression.

As to the Australian sign language ROTH makes no mention of facial expression; it may be therefore that this language is (in this respect) more akin to the Red Indian, but this is not certain.

As to differences depending on differences of knowledge and outlook: the Red Indian considered the heart as the *seat* of knowledge as well as of emotion; on the other hand, the deaf mute considers the brain (forehead) as the seat of knowledge, memory, etc., and the heart as the seat of emotion.

The Australian apparently considered the head as the seat of knowledge. No heart sign is given by ROTH.

In the few minutes available I will give examples:

(1) of similar signs } in the three systems.
(2) of different signs }

As the Red Indian and Australian signs are derived only from illustrations and brief written descriptions, I cannot guarantee that my “pronunciation” (so to call it) would be considered satisfactory by a Red Indian or an Australian “Aborigine”; but we are, in this case, not concerned with niceties of pronunciation, but only with the fundamental roots, the nature of the pantomimic gestures by which the ideas are *naturally* expressed.

I. Similar Gestures. Three sheets of drawings were exhibited showing signs for the following:

Horned Cattle	Belt	Go
Bird	(Necklace)	Question
(Diving Bird)	Bag	Yes
Snake	Run	No
Frog	Sleep	
House	Swim	

in Australian, Red Indian and Deaf Mute.

II. Differing Signs. One sheet of drawings was exhibited showing signs for the following:

Brother	Anger	Forget
Doctor	Sick	Good

in Australian, Red Indian and Deaf Mute.