THE FUTURE OF SPEECH THERAPY.

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The rapid expansion of Speech Therapy during the last few years is satisfactory in so far as it indicates a growing realization that the stammering habit can be corrected under the guidance of a speech therapist, and that the chance of "growing out of it" is almost a remote one, but it is not at all certain that a large proportion of this expansion is in the direction most calculated to help sufferers to gain control of their speech.

The stammering habit may be described, as everyone knows, as lack of co-ordination of the factors which are combined in speech, but in order to understand the breakdown in co-ordination, it is necessary to consider speech co-ordination at its best, that is, in the case of an expert speaker.

The vibration caused by the breath passing between the approximated edges of the vocal cords is called vocal tone, but the quality of that tone depends principally on maintaining the ideal balance between breath supply and vocal cord resistance. In the case of the expert the vocal cords are firmly approximated with the result that the maximum vocal tone is produced with the minimum breath supply. The stammerer, on the other hand, failing to approximate the vocal cords firmly, uses more breath but produces less tone, in fact the vocal tone of the typical stammerer might be described as "breathy," a considerable proportion of the breath escaping between the vocal cords without contributing to their vibration. Thus, the first failure in co-ordination is caused by insufficient vocal cord resistance, but since the vocal cords are not under the direct control of the will and can only be controlled by the mental conception of the sound required, cord resistance must be increased by the thought of full and firm tone.

The vocal tone produced in the larynx is converted into speech as it passes through and out of the mouth; the size and shape of this most important resonator are constantly being changed by movements of the tongue, soft-palate, lips and jaws, the resultant "shapes" converting the vocal tone and breath into the vowels and consonants which are combined in words. Once again, there is an ideal balance between the flow of vocal tone passing through the mouth and the resistance to that flow of tone caused by the formation of the vowels and consonants, the resistance being strongest in the case of the explosive consonants p, b, t, d, k & g. The expert speaker reduces the resistance caused by the formation of the consonants to a minimum and depends for audibility on the smooth, rhythmic flow of the vowels. The stammerer, on the other hand, by increasing consonant resistance at the expense of the flow of vocal tone, upsets the correct balance between the two to such an extent that for the moment speech becomes impossible. The remedy is obvious, the stammerer must concentrate on the outward flow of tone rather than on the movements which convert that tone into words; so once again, it is necessary to form a mental picture of a smooth flow of vocal tone passing through and out of the mouth.

That this is the correct explanation of the stammerer's breakdown is indicated by two well known facts, first, that nearly all stammerers find their greatest difficulties in words containing explosive consonants when consonant resistance is at its maximum; secondly, that nearly all stammerers can sing fluently, because while singing the attention is necessarily although subconsciously concentrated on the outward flow of vocal tone. Since we are not bi-vocal, but use the same organs

for speech and song, it is clear that the stammerer who can sing fluently (as most of them can) needs very little readjustment to enable him to speak fluently. The readjustment consisting in making the flow of firm vocal tone the predominant factor while speaking, as it necessarily is in song. Thus the mental picture of a firm vocal tone solves both the problems of inco-ordination, it increases the vocal cord resistance and so corrects the balance between breath supply and cord resistance, while it also makes the flow of vocal tone the predominant factor in speech and thus keeps the consonant resistance in its correct proportion.

There is a close similarity between the jerky speech and breathy tone of the stammerer and that of the normal child while learning to speak; if then, by stammering we mean stumbling over words, then all small children may be said to stammer while learning to speak. Since one per cent. of children develop a stammer there must be a determining factor which causes the breakdown; it seems that excessive speed is the cause. That this is the correct solution is indicated by the fact that in almost every case the stammer is decreased by speaking slowly.

Some boys can run more quickly than others and no amount of training will make a slow mover into a sprinter. Some people cannot write quickly and no amount of practice will make them do so. Similarly, there are children who cannot speak quickly and it is the attempt to do so which causes the breakdown in co-ordination. The stammerer as a small child goes through the stumbling stage in the mastery of his speech, but whereas the others overcome the stumble, he continues to do so, becomes conscious of his failure and apprehensive of more failure, with the result that a vicious circle is formed and the habit of stammering is gradually established. Long experience as well as the statements of stammerers and their parents shows that speed is the determining physical factor. Speaking slowly lengthens the vowels and facilitates the use of a full vocal tone, the neglect of which is the cause of the intermittent breakdown, as has been explained above.

This brings us naturally to the consideration of the fear factor in stammering. That fear is the determining psychological factor is proved by the fact that all stammerers can speak fluently when alone, but whether fear is the cause or the result of the stammer has for a long time divided speech therapists into two definite groups. Those who have made a study of the voice and its production realize that vocal tone must be the predominant factor if speech is developed on correct lines. They recognize a stammer as a failure to co-ordinate correctly the speech factors, so that consonant formation wrongly becomes the predominant factor and therefore vocal tone, which is the essential factor in all speech, is intermittently "smothered."

In the ranks of the neurologists and psychologists, on the other hand, there are many who hold the opinion that a stammer is merely a symptom of nervous disturbance, to which the child has a hereditary tendency, or which has been caused by shock, fright or illness. It is, however, interesting to note that opinion is once more divided and that some of the leading neurologists and psychologists agree with the voice producers that stammering is a habit of incorrect speech, resulting in intermittent breakdown, and that the stammer is the cause of the fear and anxiety. To quote but one example, Dr. Henry Devine, O.B.E., ex-President of the section of Psychiatry of the Royal Medical Society and ex-President of the Neurological section of the British Medical Association, evidenced his complete agreement with my definition of a stammer and my method of correction, by adopting them *in toto* and without any remarks of his own in his contribution on stammering in the 1936 edition of the Medical Annual.

It is interesting to note that at the time when doctors regarded the theory and practice of speech therapy as part of their work, the explanation of the stammering habit and the method suggested for its correction were similar to those described in this article. Writing in 1851 John Bishop, F.R.S., F.R.C.S., says, "The most common cases of stammering occur, when persons attempt to articulate the desired sounds without putting the glottis into vibratory action; and, therefore, in order to remove this kind of impediment, the treatment consists in instructing and exercising the patient in the method of using the vocal apparatus properly." In 1879 E. B. Shuldhham, M.D., says, "The patient cannot adjust the mechanism of speech with sufficient art, so as to produce continuous, uninterrupted sounds." In 1883 William Abbotts, M.D., defines a stammer by quoting the words of John Bishop (1851). In 1889 A. G. Bernard, M.R.C.S., L.R.C.P., writes, "Stammering is occasioned by the disorderly and unnecessarily accentuated efforts of the stammerer to articulate" and "the slower and more deliberate his articulatory efforts, the more perfect they will be. In singing, where the movements of these parts are slower, and the notes are sustained, stammering rarely, if ever, occurs." In 1894 John Wyllie, M.D., F.R.C.P. says, "Stammering is in the great majority of cases due to delayed action of the laryngeal mechanism" and "All this tends to show that when a primary demand for voice is made, as in song, the difficulties of the stammerer can be made to disappear" and "A general injunction to the stammerer, that in speaking, he should employ a full tone of voice, is always of use to him." In addition to the above another book deserves special mention, first because it was the work of Lennox Browne, F.R.C.S. in collaboration with Emil Behnke, a teacher of voice production, secondly, because it has reached its twenty-third edition! Published first in 1883 the definition in this book is given thus, "Stuttering is a fault of co-ordination between articulation and vocalisation." It is of special interest to note that these writers considered that faults in respiration were at the root of the trouble. As we have seen above there is a correct balance between breath supply and vocal cord resistance; if the resistance is increased the breath will be automatically regulated. Thus, although the opinions expressed in Browne and Behnke's book are not in absolute agreement with those of the other writers, the actual difference is rather one of the wording of the definition than of any fundamental change of idea such as describing a stammer as a nervous disorder. With this slight qualification it may be said that among the doctors, with the exception of those employed in public appointments other than hospital appointments, stammering has been looked on for the most part as a bad habit of speech, which can and should be corrected through speech re-education, and that this opinion has been consistently held for the last eighty-six years, since we find that the medical books of reference accept the same definition as can be seen in the Index of Treatment, 10th and 11th editions, as well as the Medical Annual whenever an article on stammering has been included in the edition, for instance in 1934 and 1936.

Miss Freda Parsons, whose speech training is so well known and deservedly appreciated in the Midlands, agrees that stammering is a habit of inco-ordination of the speech factors, and that the speech breakdown reacts mentally, thereby causing anxiety and fear. In her recent book, "*The Gateway of Speech*," she points out that speech is a muscle habit, and that *any individuality of speech is also a muscle habit*.

When, however, we turn to "*The Nature and Treatment of Stammering*" by Dr. Boome & Miss Richardson, in which they describe their system of speech correction as used in the L.C.C. Speech Clinics, we find that stammering is described

as merely a symptom of a condition of nervous disturbance. These writers assert that owing to the apathy of the medical profession the treatment of stammering is mainly in the hands of quacks and charlatans. In actual fact there are speech clinics under the supervision of the medical staff at several of the London hospitals; in order of seniority these clinics have been in existence for 25, 24, 18, 14 and 12 years, and there are at least half a dozen of more recent creation. That the L.C.C. method is not ideal is indicated by the fact that, although the ground is theoretically covered by them, the hospitals have found it necessary to increase the number of hospital speech clinics.

These writers assert that stammering is caused by a neuropathic tendency with an hereditary proneness to stammering or an inborn liability to nervous disturbance due to instability of the nervous system; they consider that fright, shock, illness or strain may be considered as secondary or determining factors.

In the chapter entitled "The Stammerer's Point of View" one paragraph is of particular interest, especially when it is compared with the earlier part of this article. The stammerer writes:—"A great help, I find, is to listen to the quality of one's voice, instead of the actual words; to try and attain a pleasing intonation, and if you like, acquire certain mannerisms from other people. For instance, I found that I could manage better if I spoke with a Scotch accent, or better still with a drawl. But of course the only lasting and complete source of help is in relaxation, although only a stammerer knows how terribly difficult that is when speaking." It is difficult to understand why it is considered to be more advantageous to learn relaxation, which the stammerer himself describes as "terribly difficult," than to rely on the imitation of well balanced speech until it becomes a habit.

On the subject of correction these writers say:—"One hears *ad nauseam* of methods based on the need for re-education of speech.... the teacher ignoring the obvious fact that a stammerer is already obsessed with the mechanism of speech, and that he needs to be led *away* from, and not *towards*, his obsession." If this is sound reasoning it would seem that coaching in cricket and lawn tennis is valueless! Observations, however, make it clear that the lawn tennis player, who plays his shots off his wrong foot and without full use of his shoulders, will improve his game by learning the correct co-ordination of wrist, arm, shoulder and foot-work and that as his game improves by coaching so will his self confidence increase. It is logical to suppose that the muscle habit of speech will also be improved by mastering correct co-ordination and that confidence will be increased thereby.

The writers continue, "The originators of these methods appear to have overlooked the fact that the neurosis causing the stammer is also causing the muscular hypertonicity which results in an unnatural voice, and that once this tension has been conquered, the patient is usually found to have quite a good voice of his own." The writers have overlooked the fact that the voice producer knows that the stammerer has "quite a good voice" which has been smothered by hypertonicity of the muscles of the throat and neck and his efforts to form into words vocal tone which intermittently fails to function. His efforts are to teach correct co-ordination so that the "good voice" may take its correct predominant position as a speech factor. Every singing pupil has to overcome hypertonicity and he is taught to do so by learning to use correctly the muscles which are required, in the case of the stammerer the hypertonicity is merely present in a greater degree, so that instead of the tone of the voice being spoilt as in the case of the untaught singer, in the case of the stammerer the voice is intermittently "smothered" by the effort to articulate the consonants.

When comparing the explanation of the stammering habit given by Dr. Boome with that of other speech therapists, it may be presumed that his conclusions are largely based on his study of the histories of L.C.C. school children, who provide an ideal type to substantiate his theory that shock, fright and illness are determining factors of stammering. Many of these children may be said to live in an atmosphere of fear; if, then, fear is indeed a determining factor, it is surprising that stammering is not found more frequently than it is among these children.

It is difficult to arrive at an accurate comparison of the L.C.C. method with the methods used in the hospitals, for it must be remembered that the L.C.C. method is compulsory; the children who come to hospital are generally sent by their headmaster, who seems to prefer the short time which can be given to each case in hospital to the two long sessions per week at the speech centre. It should also be remembered that the L.C.C. treatment is free, so complain's are naturally rare; nevertheless, quite a number of children are brought to hospital by their parents, who consider that the two to four years required by the L.C.C. method is unreasonably slow. As far as the children are concerned, this method attracts the lazy child who enjoys the welcome change from the routine of school subjects to the study of complete relaxation. Transport to the speech centre by special ambulances is an additional attraction.

It is very difficult to form an accurate estimate of the value of the remedial work of a body such as the L.C.C. which has the advantages of comparatively unlimited powers, supply of cases and time.

Turning now to the important questions of development and expansion of speech therapy, the L.C.C. have the full control of what might be and should be an ideal training organization, inasmuch as they have an ample supply of patients, a large choice of suitable premises and last but not least, sufficient funds to pay for reasonable alteration and expansion. The fact remains, however, that speech therapy in the hospitals is on the increase, where different methods are employed, and that children are attending some of the hospital clinics in preference to the speech centres.

In view of these facts it would seem only fair and just to the children, their parents and the ratepayers that the L.C.C. should make some use of the methods which have enjoyed the continued approval of those in charge of the hospitals and which are accepted by the medical profession as a whole as reliable and sound. The correction of stammering through speech training is quick and effective; within a month it is obvious whether it is going to benefit the patient. If this system were used in some of the speech centres, many children would be saved the disappointment of being told after three or four years that correction by relaxation was unsuited to their particular cases.

At the present time opinion with regard to speech therapy is divided, not, as we might suppose, between the psychologists who attribute the disorder to fear and the voice producers who consider that the fear is caused by the stammer, but between those speech therapists who are attached to the section of the medical profession employed in the Government and municipal services and those attached to the rest of the medical profession engaged in general and special practice. Until there is some exchange of opinion and a willingness to consider and try other methods, it can hardly be claimed that the best that can be done for the stammerer is being done.