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A PSYCHOLOGICAL ANALYSIS OF STUTTERING*

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THE object of this paper is to carry the analysis of stutter phenomena deeper than before. In my last year's paper I showed that chronologically the diagnosis of dyslalia mounted step by step from a material external affair, up through the nerves until we came to the basal ganglia. I showed conclusively that it was an involvement that did not exist in any of these places. I further took steps to demonstrate and present evidence that indicated that dyslalia was in its essence some trouble with the personality. I mean by this: that the trouble was located in the nervous system beyond the lower sensory areas of the sensorium; and also above the lower motor areas on the motor side. By the broad term "personality" I mean the total of the activities and interrelations of mental activities that occur above our lower sensory and motor areas. The paper of last year clearly located the trouble vaguely in this region of the personality.

Since that time I have been interested to ascertain just what the nature of this changed personality is. In order to do so, I have carried on an investigation that has reached interesting conclusions. To me it is new truth. It may not be all the truth, but as far as it goes, and as for what it is, it surely is truth and a new finding! This research is an effort to show not only where it is but *what it is*.

The method was as follows: For the purpose of finding

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out some of the activities going on in the area of collaboration during speech, I asked my stuttering patients two simple questions. I thus found that their methods of collaboration complied to a certain mental type.

Then I carried this same method into the study of normal individuals in the collaboration of their ideas, just before and during speech in order to establish a norm; and to see whether or not it differed from my preliminary test of stuttering cases just mentioned. It did, and therefore I formulated a series of questions in order to pin the type of collaboration down to certain fields of mental action. To make this clear, let me present an outline of these different steps in tabular form.

1. Orientation tests on stutterers.
2. Orientation tests on normal individuals.
3. The research, its objects and methods.
4. Final detailed results.

Let us now pass to a minuter description of each of these procedures and a tabulation of the data that resulted.

1. Psychological Orientation Tests on Stutterers:

By orientation test I mean simply a vague try-out to see just where the problem lies; an initial step to see what further steps are necessary; or in other words enough of an investigation to know where to look next.

The orientation tests consisted in requesting a series of twenty stuttering cases to answer two questions. Following their answers an immediate inspection was made of the content of their consciousness before, during, and after speech. These two questions were as follows:

1. Where do you live?
2. Say after me "The dog ran across the street."

After these questions I asked the patients to state whether there was any picture in the content of consciousness and how long it lasted; also whether that was detailed, intense or weak. I noted the presence of stuttering in relation

to the presence or absence of this mental imagery; and also made a note of any other unusual data that happened. The results of the tests indicated above can be summarized as follows:

Of the twenty stutterers examined, ten made no visualization of their homes, some even after a residence of years; one of these twenty visualized home very faintly; two others visualized home clearly but the picture vanished on speaking; seven others visualized home clearly but these had been under treatment.

On repeating the dog statement, ten stutterers made no visualization whatever; one visualized faintly; four visualized well but the picture vanished on speaking; five others reported visualization, and four of these had been under treatment.

At first I did not know but what this was the norm of average visualization methods; so I tried this same series upon a number of normal individuals for comparison; by normal individuals, I mean, at this time, merely anyone who is free from stuttering, and chosen in a haphazard way from the hospital community; for example, one was our executive secretary, another a typewriter, another a telephone operator and so on.

2. Psychological Orientation Tests on Normal Individuals

The results of these orientation tests upon normal individuals were as follows:

The normal individuals examined almost without exception visualized clearly before and during speech. Sometimes this visualization was very marked in detail and resulted in emotional responses, such as pleasures, etc.

From the above two sets of figures were thus obtained a fair norm of visualization for ordinary individuals; and in comparison a marked variation from this in stutterers. This data therefore warranted the tentative conclusion that stutterers have a loss or diminished power of visualization. This assertion may seem a little more than is warranted by such meagre data and perhaps would be better revised

pending further data into the following: As compared with the normal, stutterers show a weakness in visualization.

3. The Research, its Objects and Methods:

These general orientation tests for a norm and its pathological variation were the basis upon which I proceeded on broader lines with a further and more exhaustive investigation with the following points in view:

To what extent is visualization weak?
Is it weaker in the worst cases?
Is it less and less weak as cases appear less severe?
Is it the same for past, present and future memories?
Is visualization equally at fault in all sensory areas of the cortex?
Do cases approach normal visualization processes in proportion as they progress in their cure? and
Lastly, numerous other minor queries presented themselves.

All these questions were answered in the following research, which after thus much orientation found a more complete and final form.

In order to answer these questions I formulated the following series of tests to the number of twenty-four in all, and asked them in series to nineteen stutterers, making almost four hundred tests:

1. Speech: Say, Today is sunny.
   The dog ran across the street.
   Submarines will sink all the steamers.

2. Motor: Do you dance?
   Did you ever skate?
   Would you sew for a living?

3. General Sensory:
   How does a pinch feel?
   Did you ever get hurt?

What would you like to do if it was very hot next summer?

4. Hearing: (Eyes closed)
   Do you hear anything?
   Did you ever hear a rooster crow?
   What sounds would you like to hear next summer?

5. Sight: (Eyes closed)
   What do you see now?
   What did you see yesterday?
   What would you like to see next summer?

6. Smell: (Eyes closed) (Pen to nose)
   Do you smell anything?
   What have you told by smell?
   What would you like to smell next summer?

7. Taste: (Eyes closed)
   Do you taste anything?
   What have you been able to tell by the taste?
   What would you like to taste next summer?

8. Muscle Sense: (Eyes closed)
   Put one arm up; the other like it.
   Put one arm up, down; the other like it.
   How would you hold a hand to read from it?

This long series of questions with careful introspection tests upon the content of consciousness constituted then my main research in the field of stuttering. Perhaps further details in explanation of the questions chosen is unnecessary. Three or more questions on introspection were asked at each test.

4. FINAL DETAILED RESULTS are found in the following conclusions as drawn from 1440 answers.

In our average conversation a visual picture is created before we begin utterance. Severe stutterers never visualize at all. In direct proportion that these cases become less severe, does visualization increase in frequency, strength and continuation in consciousness before and during utterance.

When severe stutterers are free from spasms they visualize, and when they stutter they do not visualize.

When mild cases are free from spasms, they visualize, and when they stutter they fail to visualize.

In a word, when visualization is present stuttering is absent; when visualization is absent stuttering is present.

This is true not only of *each utterance*, in most cases, but is true of severe as well as mild forms as a whole.

Stutterers gain in visualization as they approach cure.

For past, present and future memories: visualization is slightly more frequent for past and future.

Therefore stuttering is an indication of absent or weak visualization either in isolated words, occasional stutterers, mild stutterers or the severest type, either before or during speech, or both.

The slump, then, in personality which I showed last year as the main thing in stuttering as its cause and condition, is thus found by further psychological analysis, to be a slump in the power to consciously visualize.

By personality I mean as mentioned above the composite of collaborative activities that lie between the low sensory repository areas and the low motor expression areas. In other words, personality includes all those collaborative processes that lie between the sensory intake areas and the motor output areas; in a word, any unexpressed use the mind makes of its intake. Conscious visualization is a part of personality processes, then. In my last year's paper(1) the whole matter was left vague. Here something definite and constant is found. In other words the psychoanalytical method revealed no conscious subconscious cause. Granted there is room here to "interpret" (or create according to Freudian mechanisms) a definite subconscious complex, a

step which I could not feel justified in taking; I leave this to better psychoanalysts than I. For me to twist stutter phenomena to comply to a theoretical complex is unscientific to say the least. But the psychological method—as represented by this paper—shows a definite constant cause for all the phenomena of stuttering.

FAULTY VISUALIZATION EXPLAINS ALL PHENOMENA:

Upon this basis of an involved visualization all the intricate phenomena of stuttering may be explained. Let us take some of these up in detail.

THE START. Visualization processes are a matter of growth through exercise and development and use from the sensory area mostly of the eye. If these processes in their early start and evolution receive a setback through the treatment of people in the environment, such as interruptions of their early speech efforts, constant inattention of those to whom they speak, and persistent refusal by older people to answer questions propounded or the allowing of the little one to ask the same question without hopes of answer for a great number of times, these visualization processes receive a setback. This kind of treatment in the home is one of the chief causes of the slump of visualization processes. Another cause is hearing other stutterers interrupt their own visualization processes as they stutter; and still other minor causes may be almost any psychic trauma; these traumata, such as an operation, an accident or a severe illness, are sufficient to bring to the surface or intensify a growing lack of visualzation that has been started by bad environment long before.

THE DEVELOPMENT OF STUTTERING. When the habit of visualization is lessened, the action upon speech is the same as the withdrawal of an inhibiting or regulating reflex arc.

It is thus that visualization processes act like reflex inhibition. When visualization is present a higher inhibition arc is functioning and we have a normal speech as a consequent reflex expression. When and in proportion as visuali-

ization is absent this higher inhibition arc is not functioning; and the speech thus uncontrolled flies away in spasms which we call stutter. It should be called an exaggerated or uninhibited speech reflex.

The stutter, then, is merely the externalization of an exaggerated reflex of motor speech, exaggerated through the loss of the inhibitory action of a more or less weakened visualization process.

Not only does this explain the phenomena at large but seems to be a satisfactory explanation for all its intricate, minute details. Some examples may, perhaps, be welcome at this point. I say to two stutterers: "Tell your first name." One of them stutters and the other one does not. On furthering questioning, it is found that the one who did not stutter visualized, and the one who did stutter did not visualize.

CONCRETE: These conditions are also seen when stutterers talk about concrete and abstract matters or when they promulgate some important plea that cannot be visualized. On concrete matters that can be easily visualized the stuttering is gone; and on abstract matters where visualization is hard, the stuttering again appears.

ANGER: In anger, when an intense visual picture is presented and occupies the mind, there is then no stuttering, and also in other similar situations there are periods when the individual is abandoned to some visual concept which acts in the same manner.

SINGING: We all know that stutterers can sing without stuttering. The process here is a similar one; only that there is held up over the speech before utterance an auditory image of a melody in place of the visual image as held in normal speech. This auditory image may be more easily applicable as supplying the needed inhibition reflex arc than the visual because it is nearer to the speech area.

PRAYER: For the same reason prayer is uttered without stuttering when there is faith enough in a God to hold an image of Him during utterance. There may also be other images held during prayer.

FAMILIAR SIGHTS: Familiar sights are less stuttered upon than the detailing of situations that are less familiar

and therefore can be less well visualized. This is also true of sights that have been recently seen or that have been repeatedly seen, or that in some other way have been made intense as pictures in the visual field.

As Cure Proceeds: In the process of recovery where visualization is seen to increase as the stutter decreases, there is another illustration where this visualization attitude explains the whole situation. I have taken a severe stutterer and told him a story that could be well pictured, got him to work up the pictures properly by several complicated processes (which we will not consider now) and when he had them well in hand, I have seen him stand up and relate the story from beginning to end with little or no stuttering. If at any point he would trip up, the inevitable confession would be that at that point he dropped the picture, or, in other words, the visualization could not be held over in its inhibitory action; and therefore the stutter came. On further request to hold it over that point, the same passage would be again expressed smoothly if he succeeded in holding the picture.

This constancy, this presence and absence of the picture, its presence to make smooth talk and its absence to cause stuttering, is so constant at every turn of the situation, that I would offer it as a new interpretation of all these phenomena. I know of no other interpretation that can *explain everything under one head* as does this absence, weakness or interruption of visualization processes.

Terminology. We have found in our orientation tests that in a vague way the visualization was at fault. We have also found in normal individuals that a marked visualization was an automatic process that preceded speech, and lasted during utterance; and we have found in the long series of stutterers that visualization is entirely absent in severe cases; that it is weak in milder forms; that it is intermittent in most cases, and that on words that are smooth it always appears, and in occasional stutter it is as occasionally absent.

We have also found that the form of visualization common in normal speech is the visualization of eye sensations; that in unusual situations we may have visualizations from

other sense areas, such as the ear, taste or smell, but these are the *rare exception.*

From all this data it would naturally follow that some sort of term is needed to designate this condition. Last year I probed to find such a term without much success.

At present I see no reason why it should not be called an Asthenia; it is surely the weakening of a mental process that is strong in normal individuals. The evidence here presented shows that. I doubt whether there is any marked pathological change, since the individual may be educated out of it; but this does not necessarily follow as proven with my dog in Berlin.[2] As a general designation, then, I should consider Asthenia as apropos.

One objection to this is that the weakness is by this terminology lacking in localization. Our data above has shown us that the location of the trouble is visual; that is, it is situated about a centre of sensory registration that deposits data from the eye; this must naturally then be located somewhere in or near the cuneus. We could therefore add to the terminology this idea of a minute localization and call it a Centre Asthenia.

Some may prefer to carry the matter one step farther and add the name of the centre in which this weakness is located, but I fear if I take this step and complete my terminology by the word "Visual Centre Asthenia," it will, as such, not cover quite all the cases, for I find that sometimes the visualization is absent in other areas as well, and also the holding of an emotion of pleasure or pain and of other dominating mental attitudes that are sometimes visualized would not, therefore, be included. I would therefore retract the broader claim in order to place the term on a conservative basis and call the essence of the lesion simply no more or less than a Centre Asthenia. As well as Visual Asthenia, the following terms might be considered as applicable: collaborative centre asthenia; imaginative centre asthenia; visual creative centre asthenia; picture producing centre asthenia. We say neurasthenia when the trouble is not in the nerves as such, so much as it is in the collaborative centres. More of this later. Here in stuttering the trouble is also collaborative, and we can be still more definite than

that and say the trouble is with the collaboration of visualization. So if I were forced, however, to choose one term from all these, my choice would be "*Visual Centre Asthenia.*" This indicates a new and rational treatment. But of this later.

SUMMARY: Psychoanalysis reveals stuttering as some vague trouble in the personality[1]. Psychological Analysis shows stuttering is an absent or weak visualization at the time of speech. This new concept of stuttering as faulty visualization may be called Visual Centre Asthenia. This lack or weakness in visualization accounts for all the numerous phenomena of stuttering in severe, medium, or mild cases. A new treatment is indicated.

REFERENCES

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2Swift Walter B., demonstration eines Hundes, dem beide Schafenlappen xtirpiert worden Sind. Neurologisches Centralblatt, 1910, no 13.