

A NEW THEORY ON THE RELATIONSHIP OF
STUTTERING AND HANDEDNESS.

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Many investigations have been carried out on the relationship of laterality and stuttering, and the majority of these are familiar to all speech therapists. However, recent investigators have forsaken the long established association postulated by Travis and his co-workers, and have introduced a new concept.

The relationship reported by these investigators is not one of cause and effect, but one which pre-supposes a common causal factor for both left-handedness and stuttering. This theory has been investigated by Berry, West, Neilson, Hunter and others and is based on twinning.

Berry in an attempt to find a common denominator for twinning and stuttering collected data on 250 duplicate births. The problem she presented was "does stuttering appear more frequently in twinning families than in families without records of duplicate births?".

The questionnaire covered points in regard to history of handedness in direct and collateral lines and a history of speech defects in the same manner.

In respect of the present discussion she found that in regard to sinistrality in these families, representing 1,205 children, approximately 1 in 10 was left-handed. Jones reported that in the United States 4% of the population was left-handed; there are, therefore, two-and-a-half times more sinistrals in the twinning families than in the general population.

As regards speech in twinning families, there were 66 stutterers in these 250 twinning families. This represents 5.5% of the total number of children and is therefore much higher than the normal expectancy, for in this case expectancy would be 1 in 18, instead of the normal expectancy of 1 in every 100 children.

In an attempt to find a common denominator Berry states that the frequency of left-handedness, of retardation in the onset and development of speech, and in the case of twinning, a higher incidence of stuttering is greater in these families.

Thus it may be postulated, on the assumption that left-handedness is inherited, that stuttering too, is due to heredity.

Twinning, stuttering and left-handedness seem to occur together and to have properties in common. The single siblings in these families tend to have a norm of one (1) in 35 being stutterers. This is very high and, therefore, contra-indicates the assumption that twinning per se produced stuttering or that left-handedness per se produced stuttering.

The factor in the germ plasm producing twins may be a gene which establishes an abnormal biochemical relationship "favourable to the retardation of a single axiate production, and unfavourable to normal speech". Is it possible that the genic force, favourable to twinning and stuttering, may show itself in some process connected with vitamin metabolism?

The theory just expressed may be reiterated for handedness. Left-handedness and twinning may be part of the same basic phenomenon, although they have no direct effect on each other. There are many theories which we may follow in establishing a common basis for left-handedness, twinning and stuttering. For example, if we followed Tauterbach's hypothesis, it may well be that left-handed stutterers lost their mates in utero, they were, in origin, twins. Another line of reasoning which may be pursued is that of Newman - it might be argued that the interference with fetal circulation, which may occur in twinning, could affect both the centres normally dominant in establishing speech and handedness.

"All in all, whatever theory one accepts, the best answer to the question of sinistrality, stuttering and twinning seems to reside in a genic constitution".

Neilson, Hunter and Walker in a study on stuttering in twin types found that the percentage amongst 200 twin pairs was 20%, which is very much higher than that for the general population.

West, Neilson and Berry state that "there are three groups which are innately atypical: the stutterers, the left-handers and the twinningers. They are by no means identical but there is considerable overlapping.

In view of the strongly hereditary factors of all three it is difficult to think of one as being the cause of the others; one is inclined rather to suppose that all three rest upon some common heritable factor of structure or biochemistry".

Thus these investigators postulate that these two rarities of society, stuttering and left-handedness, may be linked by one causal factor, a genic force as yet unknown to science.

REFERENCES.

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| Berry, M. | "A Common Denominator in
Twinning and Stuttering".
(J.S.D. March 1938). |
| West, Neilson & Berry | "Heredity of Stuttering".
(Q.J.S. 1939). |
| Neilson, Hunter & Walker | "Stuttering in Twin Types".
(J.S.D. December 1945). |

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