

DYSLEXIA, LEFT-HANDENESS, STUTTERING

-  
One cause, One treatment

The left-handed youngster, the dyslexic student, the child who stutters are all deep down victims of poor lateralization. It is not a disease, even less a handicap or a deficiency, lack of lateralization is a mis-adaptation to the environment, due to lack of harmony between the two hemispheres of the brain. From that one root stem various troubles which are today being ever more actively treated and successfully cured.

Eleven years old and in second grade, A.A had his parents worried about how poorly he was doing at school. He read badly, made twenty to twenty-five mistakes in spelling per dictation, could not remember his homework and made very slow progress in spite of normal intelligence ( I.Q.100 ). His raucous voice compounded a certain difficulty of pronunciation ( he had trouble articulating "r" sounds ). After several attempts at treatment, a method was tried, involving education of the ear. Twelve half-hour sessions later the child already spoke better. In forty, his voice had become normal, he read well and only made an average of three mistakes per dictation. His progress in school extended to all subjects ; he advanced to fourth grade. Very clumsy until then, he soon became fast and efficient in volley-ball. One last result of the treatment was an improvement in a chronic inflammation of the nasal mucus membranes, which has previously given the child colds.

There are many comparable stories. The reason we picked this one was that A.A. presented together a number of symptoms which are found separately in other children ( or adults ).

There are in the world countless dyslexic children who cannot learn to read correctly in spite of otherwise normal or even above average intelligence and in spite of being nothing organically wrong with their senses. They have trouble making the distinction between symmetrical letters : p-q, d-b, u-n, and between sounds that are close to each other : c-g, p-b, f-v. They have the same difficulties in writing, they invert letters and syllables. Their hand-writing is misshapen, irregular and scratchy.

Many of the children are left-handed ; others have speech-problems, they lisp or stutter : some talk in a harsh voice or in a voice that lacks timbre.

All these phenomena, in spite of their outward differences, have a common origin, poor lateralization, which has only been under study a short time and is not yet widely known.

For many of us to be poorly lateralized means to be left handed and we see only one major inconvenience in it : the lack of skill and strength in the right hand and the resulting practical problems, slowness in particular.

Laterality goes well beyond this definition. Discovery of it reaches back to the 19<sup>th</sup> century with surgeon and anatomist Broca who found that the two cerebral hemispheres have different functions. He succeeded in localizing the language center in the left hemisphere.

At first, it was thought that to each function there was a seat in the cerebral cortex, and that left-handedness involved cortical inversion. We know now that most functions only correspond to a certain specialization of each hemisphere : the right commands certain functions while the left commands others.

Each hemisphere has a part to play. Lateralization consists in the proper operation of each and in the establishment of a balance. It is not a question of one dominating the other, but of tasks being shared between them. The left hemisphere seems to hold under its thumb the motor functions while the right apparently follows the work of the left. In other words, the left brain gives the commands while the right brain carries them out.

A child has trouble with lateralization when the duties are no longer properly distributed among the two circuits. He does partly or wholly on the right what he ought to do on the left and vice versa ( it is possible to be left handed not only of the hand but also the foot, the eye, the ear ... )

The lack of harmony between the two hemispheres is at the origin of the many troubles we are familiar with : dyslexia, left-handedness, language problems, phonation problems, etc, ...

The child determines his position in space with reference to himself. If he cannot recognize top, bottom, left and right on his own body, he will feel disoriented with respect to the environment. The individual who cannot situate himself ( what is called "having a poor body scheme") and cannot direct his movements with respect to his body, has trouble organizing his life with regard to the outside world. He has difficulty finding his position in space as well as in time ( resulting for example in syllable inversion or letter omission when reading).

Partial lateralization ( of the hand, the eye or the foot only) or non-lateralization – "ambidexterity" indicates the child's poor adaptation. There is no question of disease, handicap or deficiency, but simply of functional disorder. There is much talk about whether the disorder is inborn or effect of family environment or both. At the moment, there is no clear scientific answer but the important thing is that a treatment is known.

Ambidexterity is the worst instance : it is necessary to instill laterality, what is more to do so homogeneously, and not only in the hand, if a good adaptation is to be obtained and each hemisphere is to be returned to its own function.

Among the various methods, the one we have chosen to report on is that of Dr Tomatis, which rallies wide support and seems to hold the broadest view of the problem. It has given excellent results, over the last fifty years in more than thousands of cases.

Its goal is to educate the child to the right. In effect, history tells us that no civilization nor any great man was ever left-handed. The left-hander makes poor use of longer circuits to reach his brain. He is in a daze, he is slow, "out of it", always less efficient than a right hander. It is not by repressing manual left-handedness, however, that the purpose can be achieved. Education has to be done through the right ear. Language, secretion of thought, is right-sided. Humanization depends on right-sidedness because it depends on language. Language in turn is under the command of the right ear, the essential and leading element of audio-vocal control.

When language is not acquired ( or poorly acquired ), neither is laterality. Deaf-mutes are non-lateralized ; mental defectives are poorly lateralized. By educating the ear, the rest of the person becomes lateralized.

Experiments involving many well lateralized subjects, particularly professional singers, demonstrate the leading role of the right ear. A subject listening with both ears, talks or sings in his usual voice. If he is only allowed to listen with the right ear, the voice does not change much. Only to a skilled listener do the sound appear more airy, light, modulated, precise, connected. By contrast, if the subject only listens with the left ear, he loses not only this exceptional facility but even his usual professional quality. The voice becomes heavy, tough, dull, off pitch and above all

the rate slows right down ; a speaker starts to stutter, a musician may become incapable of keeping up with tempo.

There is thus a preferential ear which regulates the singing and spoken voice.

This leading ear also controls the "aiming" or focusing on sounds ( in the sense that the eye aims at a target ). It also rules attention, memory, and the proper conditioning of auto-control and auto-information.

Many children ( and adults ! ) hear but they don't listen. Dr Tomatis has developed an electronical apparatus of great complexity (for the layman) to improve self-hearing and consequently self-listening and thus to improve speech.

The first dialogue in life begins, according to him in the womb ( the foetus can already perceive sounds). Then the ear, adapted to hearing in a liquid, has to adjust at birth to aerial sounds. The first sounds are cradling, caressing and reassuring; they are the sounds of the mother's voice that already spoke in the darkness of the womb and that comes when the infant calls out his hunger : audio-vocal conditioning has begun. The first words : ma-ma, pa-pa, pi-pi, do-do have no real sense at the beginning. This message addressed to the mother has to be later transformed into the social convention of language. The child trains for it during the first talks with the "other", who is most frequently the father. Now it becomes necessary to lend an ear, and the right one, the pilot ear which informs the left brain, the emitter (both the thought circuit and the feedback circuit are shorter through the right ear).

This right fixation of the auditory control causes establishment of the laterality of the rest of the body on the same side.

On the symbolic plane the mother identifies with left, with the past, while the father represents the right, speech future. If the mother rejects the child, language has trouble taking form. If the father is hard to approach, the child protects himself by interposing distance, by passing through the left circuit which, as is known is longer than the right. Thus the left ear, mouth and larynx become the conductors of a long and complex circuit which moves away the father's image but also slows down "verbal flow". If the father cannot be encountered, the child cannot achieve laterality and no circuit becomes dominant.

This non-lateralization of the ear makes it impossible for the child to locate himself in space and time. Language remains fixed at the stage where it is meant for the mother only, and the early babbling which is sung to her, turns into stuttering.

Poor lateralization can also explain dyslexia. The written sign is merely a sound to be reproduced. The first "record", writing, only becomes meaningful if it can be played back acoustically revived, which demands perfect formation of the right auto-control circuit.

The treatment consists in teaching everyone, child or adult, to use their right ear as an apparatus capable of listening, creates a desire to communicate and brings about rapid decrease and eventual disappearance of the disorders.

To prepare the child, his mother's voice is played for him as he perceived it during the foetal stage. This calms the child and makes him forget the affective traumas he suffered during or after birth. The by means of filters and an electronic gate, the circuits and the auditory curves are modified at will to make the child assume the auditory posture of someone who hears normally and auto-controls himself perfectly. As the listening to that "someone" improves, which increases the

attention of the subject, a second phase is introduced. The subject listens to his own rectified voice while he answers or repeats. He is thus conditioned to hear his voice as would a subject who auto-controls himself well.

Once the subject's hearing is trained to good listening, good reading follows. The ear, organ of language in all its forms, is the essential organ of reading as well as of speaking. All phonation is controlled by audition : thus the child who stuttered, by establishing listening with the right ear, finds normal speech.

Once the right is reeducated the left becomes normal spontaneously.

People who have followed the procedure comment that the child' transformation is quite amazing.

A poorly lateralized child is often distractable, taciturn, uncommunicative; his voice is timbreless, harsh, raucus. Little by little, as the listening with the right ear develops, he becomes talkative, euphoric, open, quicker; his voice acquires timbre and modulation, at first during the time that he is listening, then for longer periods, and in the end permanently.

His whole being becomes right-sided : his face becomes dominant on the right side; he talks on the right side; he gesticulates on the right side, he tends to eat on the right side. His concentration and memory increase; normal relations with the environment become established. He reads better.

Well balanced in space and time, he becomes master on himself and his outward thought, more precisely master of his language.