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The Acquisition of Speech Through Speech-Movement Therapy: An Exploratory Study

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Introduction

This paper describes an experimental programme of speech-movement therapy which was used with two boys who had a learning disability. In present day terminology they would be classified as having a specific language impairment; however, the old definition of executive or motor dysphasia characterises more accurately their difficulties.

Regular sessions using the method to be described started when Chris was 10 years old and continued until he left school at 18; for Jack the method was introduced on his arrival at school when he was 14 and continued until his departure at 18. More was achieved with Chris, partly because he started earlier and at a more pliable age and because his family gave positive support to his progress, whereas Jack's family did not value his tremendous efforts but preferred to see the application of technical means for facilitating communication.

Both Chris and Jack had mild dsypraxia and moved in an odd and jerky manner. Both were extremely shy and lacking in self-confidence; they were acutely aware when their attempts to pronounce sounds went awry and needed great encouragement to try again. Chris's sense of shame showed itself by his hiding his face in his arms, or by pointing wildly at random in order to direct attention away from himself. Jack would prefer to cross his arms and shake his head vehemently, remaining 'stuck' in this posture for a long time. Both had a reasonable understanding of everyday language and enjoyed simple jokes. Both were friendly, sociable and sought contact, mainly with adults or by assuming a caring attitude with children who had a physical disability. They avoided their peers. However, they were loved by everyone, despite Chris's hyperactivity and Jack's occasional strong temper outbursts.

Method

In order to understand the speech-movement therapy adopted it is necessary to clarify two assumptions that underpin this therapy; first, the perception of speech as a direct sensory process; and, second the art of eurythmy which has an influence on speech.

Perception of speech as a direct sensory process

The system of sense physiology described by Steiner (1996), the Austrian philosopher and inaugurator of Waldorf education (Blunt, 1995), contains twelve senses; one of which is

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*the **sense of word**. Steiner describes the **sense of word** as enabling a child to have a direct sensory perception of speech sounds, phonemes and syllables. The **sense of word** is quite different from the sense of hearing, as its function is to pick out speech sounds amongst other sounds, noises and tones. Contrary to most theorists, Steiner did not see this as a cognitive process. He argued that the child was able to pick out speech sounds and practice them, before being able to judge their meaning.*

In 1905 Steiner described the sensory process in the following terms. A speaks and B listens. When A speaks the larynx of B vibrates in exact synchrony with A's speaking larynx. B then makes these movements of his larynx conscious through the appropriate nervous system. At the beginning of the 20th century, Steiner's statement was a bold and unproven assumption.

William Condon (1985) has described his experiments in the field of linguistic kinesia in the sixties and seventies which resulted in the introduction of kinetic aspects to the study of linguistics. He showed that through interactional synchrony the speaking of the speaker influences directly the body movements of the listener.

> *"When A speaks and B listens there exists an exact and flowing reaction of movement from listener in synchrony with the speaker in 40-50 milliseconds." (Condon and Ogston, 1967).*

*These findings vindicated the earlier statements of Steiner as to how the **sense of word** functions. Condon (1976) used a powerful metaphor to describe this process. He indicated that it was: "as if the body of the listener dances precisely to the spoken word."*

Condon's research on microkinetic reactions to speech has had little influence on the field of psycholinguistics, other than psycholinguists becoming more aware of the importance of movement in speech and language training.

Having read Condon's findings, the following question arose: If speech creates the 'flowing movement' in the listener, can we assume that the use of movement enhances speech in a similar and directly related manner?

*The concept of interactional synchrony would also appear to shed light on Steiner's cryptic description of the sense organ of the **sense of the word**:*

> *"That organisation that allows us to move is at the same time the perceptive organ for the words someone else speaks to us." (Koenig, 1984)*

In other words the voluntary muscles, which allow us to move, withhold this activity and become instead an instrument of reception and resonance. This is precisely what Condon is arguing when he states that the listener's muscles are the perceptive organs for the speaker's muscle movements. We are familiar with the phenomenon where children find difficulty in listening when they are in constant movement, for the muscles which are used in such activity cannot also be fully receptive.

Lutzker (1996) has explored in depth the relation of Steiner's sense physiology and Condon's experiments. In the light of these research findings, motor dysphasia may perhaps be best understood as a lack of movement perception in the realm of speech. Condon (1985) assumes that the asynchrony in the movement interaction is the cause of speech dysfunction. If that is so, it follows that one would expect some degree of dyspraxia in such children.

The specific influence of the art of eurythmy

The use of the art of eurythmy is the second pillar on which the therapy for motor dysphasia rests. Eurythmy was described by Steiner as a new art of movement which can be used as a performing art, an educational tool or therapeutically. It is difficult to give a clear idea of the value and impact of eurythmy, if one has neither seen nor engaged in the process. What follows then is the most rudimentary description.

Each consonant and vowel is expressed by a specific gesture of the arms. These gestures cannot be executed in a mechanical manner but need a 'flowing awareness' or an experience of the inner quality of the gesture. Steiner states that these are not 'thought-out' gestures, but that they correspond exactly to the air-movement brought about when a particular sound is spoken.

Oordt (1980) has expressed it in this way:

> *"The movement that is invisible but audible in the sounding word is to be made visible in the movement of the whole body. Audible sounds transformed into visible movements, into visible speech: that is eurythmy."*

Although attempts have been made to photograph the air movements of sounds spoken into smoke, these experiments have yet to be published. The research described in this paper has proceeded on the working assumption that each speech sound has a corresponding eurythmy gesture.

When combining Condon's findings on interactional synchrony in the field of linguistics, with the notion that specific gestures in eurythmy relate to specific sounds, we arrive at the following question: 'Can the use of movements induce and enhance speech?' In other words, can the speech organ be sensitised to move by making the child copy eurythmy gestures? Or put more directly: If the child and I make the eurythmy gesture for 'T', will the speech organs of the child eventually produce a 'T'? This was the challenge.

Structure of Therapy Sessions

Each boy had a half hour session two to four times a week in a well-sized room which allowed space for moving. The colour decor and furnishings of the room were designed to produce a warm and welcoming atmosphere. I greeted each boy with a clearly spoken "Good morning Chris/Jack" and did not expect any oral response. I then set the tone for the session by saying a simple, rhythmical poem accompanied by free, expressive but not eurythmy movements.

Here are two examples of verses used. The verses would change according to the seasons and the ability of the boys.

The sun says	I glow
The wind says	I blow
The brook says	I flow
The plant says	I grow
And man says	I know

In this instance I would not use the eurythmy gestures for G, B, etc. but would act the verb. Another example:

Words are like birds
For words can sing
Words are like bells
For words can ring

Then followed, what initially had to be the focus of the session: the practice of gross motor movements. Movement control was enhanced by walking, by clapping rhythms, by learning to differentiate 'long' and 'short' and learning to stop.

Marching Every morning at 8 o'clock
(stop)
I can hear the postman knock
(stop)

It took Chris a full year before he could stop between the lines and put his foot down decisively. We walked up and down stairs; we jumped and later used finger games to pave the way for finer motor skills (finger movement focused particularly on tongue movements).

From the simple four beat of marching, I would clap various rhythms, e.g. the anapaest (short-short-long)

I have been, in my class
I have come, over here
I have knocked at the door . . .

Only at this point would I introduce eurythmy gestures and these would always be accompanied by my sounding the specific 'letter'. I would start with those consonants which come first in child development: B-M-D. When the boys were familiar with the gesture, we would 'do' them each time that they were heard in simple verses. Thus the perception of different sounds was sharpened.

I would ask the boy to make the gesture for 'B' each time he heard the sound.

I hear **b**oy's **b**oots on the floor**b**oards

It has been my experience that intensive practice of eurythmy gestures, large and small with their arms, feet and fingers, eventually helps the child to pronounce the consonant. Even after years of practice, when the child has actually acquired the sounds but suddenly at the end of a word hesitates e.g. book is boo . . ., I only need to indicate the gesture for 'K' and the child, relieved by the visual stimulus completes the word 'book'.

After the movement exercises with their various types of moving, we proceeded to speech exercises. Depending on which vowel-sound the child was able to produce voluntarily, we would now speak, accompanied by rhythmical clapping (to divert the child's anxiety) the practised consonant 'B' combined with the available vowels Bah-Be. Gradually we tried to enlarge the scope of vowels the child could confidently use.

Chris could use the vowels ah and e to begin with. Jack had the vowels e and oh. So we started: ba, ba, ba, be, be, be using again the short-short-long rhythm. After one year Chris could do this exercise combining the consonants B-D-M with the vowels ah-e-oh. It took him another year to place the consonant behind a vowel, e.g. Ab. At first he said A-be not using the consonant as a fermature. Once this was achieved the possibility was opened up for using proper words with the consonants, now extended to B-D-M and N.

This 'speech' part of the session had initially to be kept short in order to allow a gradual build up of trust and self-confidence.

As in normal speech development there came periods of stagnation and then a sudden leap forward, where not only the sounds W-F-S and K were added but also the ability to differentiate B/P, D/T was achieved. In his fourth year of therapy, Chris began to use sentences like: I see a . . , I want a . . . .

In the sixth year a significant step took place. Chris began to transfer practised words to every day situations outside therapy sessions and also picked up words we had not practised. This showed that the motor-memory for words was beginning to work. However it was a fragile achievement for when sounds were not practised regularly, they would become mixed up (T/K) or even lost. At this time he managed - very expressively - three word sentences, although correct syntax was not achieved. Nevertheless he was usually confident enough to make himself understood.

The sessions were formally concluded by my saying a poem and by bidding him 'bye-bye' with a handshake.

Suitability of the Therapy

The question then arises: why use such a time consuming method to call forth speech, when pictorial or technical communication skills for children with learning disabilities are more often encouraged?

First of all, the two boys made good social contact and communicated through facial expression and pointing; they did not need much encouragement here. Although they had a fair understanding of vocabulary, they both realised that they could not really show their potential as far as communication was concerned. In Chris this led to enhanced restlessness, a running away from himself. Jack got 'stuck' or had violent outbursts of temper when, as an adolescent, he could not give vent to his frustration. This changed drastically when he was able to shout "go away" "you gaga". The ability to express himself verbally in this way led to his behaviour becoming more acceptable.

In order to use this kind of therapy professionally it is necessary that the therapist has a good mastery of spoken sounds; a relaxed, warm tone and a sound aptitude for eurythmy.

From this report it will be clear that the therapist cannot expect a quick result. In fact it took Chris a whole year before he could smoothly combine B and ah to Bah and nearly another year before he could reverse it and say AB instead of Ah-Be. Jack had much greater problems in acquiring additional vowel sounds, but was quicker in using consonants at the beginning and end of a word.

As we are speaking about movement training, one has to realise that at age 10, and more so at age 14, the muscles are no longer so flexible in establishing the necessary movement patterns so that they can be produced habitually. For both boys, speech remained a painstaking and conscious struggle for each new word.

The goal of the therapeutic process is to facilitate the development of the right movement patterns. The eurythmy gestures, which are first executed in a large and bold manner, are then progressively refined, until they can awaken the sound gesture - the vocal movement pattern.

Usually it is much more difficult to establish the vowel sounds. Firstly, there are few visual helps to assist their formation; secondly, for correct vowels the very finest movement patterns are needed. We know this from learning a foreign language. When a young child learns a foreign language he can usually speak it without an accent; but when learning as an adult, it is difficult to conceal the mispronunciation of vowels. The lack of differentiation in vowel sounds was an additional handicap for Jack, who started only when he was 14 years.

In certain circumstances this kind of therapy has the greatest success rate if it is started when the child is young. This is my explanation why Chris was so much more able to express himself than Jack, for Jack's muscles, both in speech and fine motor movement were more inflexible.

This report may give some speech therapists food for thought and enthuse others to try to work with this method and to develop it further.

A Brief Progress Report on Chris

Characteristics: *Hyperactivity through oversensitivity; general developmental delay; learning disability; macrocephalic; brain damage; clumsy, gross motor movements; unskilled finer movements; unformed fingers; shy; slow to learn new movements; can speak three words:* mamma, nana, boot.

Age 9:
Increasing gap between speaking and understanding. No ability to produce separate

speech sounds voluntarily, eager to communicate by pointing and through facial expression.

Age 11:
Movement-speech therapy started
(1) Worked on gross motor development in order to enliven Chris' sense of word: *stamping, hopping, running, jumping, clapping and eurythmy gestures.*
(2) Speech B + D together with vowels and rhythm e.g. ba-ba-baaa, *also with* e.

Age 12:
Continued movement exercises.
Use of consonants B - D - M - N *with vowels* ah - e - o h - oo. *Began to use clear fermature. e.g. no longer* Ah-be, *but* AB.

Age 13:
Poor mobility of feet addressed. Using B - D - M - N - F *at beginning and end of word. Can say simple words involving pictures. Change to adopting a working attitude, restlessness less apparent.*

Age 14:
After a period of stagnation sudden leap forward. Using B/P D/T M - N - W - F - S, K + J *come accidentally. Beginning to use sentences 'I see a . . .' .*

Age 15:
Adult approach: tries and perseveres with new sounds; is aware of own achievements in a charming shy manner. All consonants used voluntarily except K - L - Y, *which only come sometimes. Beginning to use composites* SM - SH - ST. *In simple sentences uses nouns-prepositions-verbs. Enjoys speaking simple poems - leaves out words he is able to say, because he wants to jump ahead to next important noun.*

Age 16:
Significant step: begins to use practised words outside speech sessions. Easily falls back into using gestures. Uses words he has picked up outside session.

Age 17:
Encouraged to 'converse' with the office-ladies, as prologue to sessions, to overcome inhibition to speak outside sessions. Able to indicate daily happenings by simple, incomplete sentences. Acquired sounds get lost, or mixed up (T/K) *when not practised regularly. All sounds except* Y; L *at times difficult; all vowels, though differentiation short/long vowel not secure.*

Age 18:
The ability to speak has greatly reduced his hyperactivity. With greater ability to speak understandable words, his sense of failure has sharpened and, if not reassured will withdraw to a deep-rooted insecurity. Can use consonants in initial, middle and end position. Open vowels still blurred.

Over the course of the eight years Chris' achievements have been astounding. He has largely overcome his executive dysphasia. From not knowing where *and* how *to form speech sounds, he is now able to use them and communicates with questions and information. He can express himself intelligibly albeit in a limited manner.*

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