

PROFILE OF APHASIA AND APRAXIA: ONSET THROUGH RECOVERY,  
A CASE STUDY

Donnell F. Johns and Sara Macaluso  
University of Texas, Southwestern Medical School

We would like to discuss with you today a speech disorder which has been recognized for over 111 years, yet one which is seldom identified by some speech pathologists, few neurologists, and even fewer neurosurgeons.

This motor speech disorder, best designated as "apraxia of speech," was identified 111 years ago by Paul Broca, but it does not enjoy a clear-cut identity today. It has been called a form of aphasia (motor aphasia, Broca's aphasia, expressive aphasia, paraphasia), which it is not. It has been called a form of dysarthria (cortical dysarthria, anarthria, aphasic anarthria), which it is not. It has been called a form of phonetic disintegration -- a type of disintegration of speech to a more simple level -- which it is not.

What, then, is it? We are talking about an articulatory disorder in patients who have incurred left cerebral hemisphere injury. As they speak, they struggle to position their articulators correctly, and they grope to assume the correct articulatory postures and to accomplish a sequence of postures in word production. They are frequently off target, and their errors are often, but not exclusively, on initial sounds. They will often, in fact usually, recognize that they are off target, and they will try again. Their errors recur, but they are variable. In their struggle to avoid error by careful programming, they will also slow down, space their words and syllables evenly, and stress them equally, so that the prosody -- the melodic patterning of their speech -- may be altered. The dimensions of change, then, are those of articulation and of prosody.

CASE REPORT

On March 30, 1971, we initiated a program of speech therapy for a 17 year old young man who, on March 20, had been struck in the head with a baseball. Before being taken to the emergency room, Randy had experienced projectile vomiting, and was in a semicomatose to comatose state. Both his neurologist and neurosurgeon diagnosed his condition as globally aphasic. When we were called in, we did find him to be aphasic, however the aphasia was clearing rapidly.

We further diagnosed a "plus 4" apraxia of speech, and a "plus 2" oral apraxia. One week later, at the time of his release from the hospital, the "plus 4" apraxia of speech remained, but there was no further evidence of oral apraxia. He continued to show a slight droop on the right side of the mouth. Randy's physicians doubted the diagnosis of apraxia and suggested that he be placed in a nursing home-type setting because of the global aphasia. Fortunately, this did not occur. He was, instead, immediately enrolled in a five day a week speech therapy program in Callier.

His initial PICA profile indicated an overall score of 12.69. Deficits in the verbal modality were apraxic in nature. A dip on graphic subtest A was due primarily to incomplete sentence formation. EEG findings revealed focal deltas in the inferior frontal region.

In designing a therapy program for this apraxia of speech, our experiences in therapy suggested the following approaches. These are not proposed as new or unique, but they are, perhaps, more efficient than some that are currently popular.

Direct articulation therapy, designed to strengthen correct motor patterns and sequencing--primarily through repetition--appear to be of value. General language stimulation, as employed for language retraining of patients with aphasia, does not appear beneficial. Therefore, direct techniques such as mirror practice, phonetic placement, and phonetic approximation and progression techniques appear to constitute the best approach. In short, the clinician should use methods designed to attack articulatory difficulties directly by employing tactile, kinesthetic, and visual cues.

We have seen that the articulation of apraxic subjects is negatively affected by word length. As the number of units increases, correctness of articulation significantly decreases. This indicates we should start with a nucleus of monosyllabic words, and progress to two and three or more syllables.

In terms of variability and carry-over, we have been encouraged by the progress made by some of these patients, and this seems to be largely dependent upon the nature of a planned, systematic attack on the disorder and on the frequency and intensity of the therapy. In other words, daily drill sessions appear to be more beneficial than a once, twice, or three times a week approach that is commonly used in clinics throughout the nation.

We have been somewhat dismayed, however, as to the lack of generalization. If we are working on one consonant cluster or a group of consonant clusters, there seems to be very little generalization to a larger group of consonant clusters.

The therapy regimen we designed for Randy Christian included:

1. Direct articulation therapy, utilizing mirror practice, phonetic placement and phonetic approximation.
2. The use of monosyllabic words first, followed by words of two and three syllables.
3. Daily drill sessions.

We found the results of this approach to be extremely successful. On May 28, Randy was dismissed from therapy in Callier. In February, we brought him back for a reevaluation and found no further difficulties with his speech.

We would like to emphasize several points about the management of this case, and perhaps, others like it. First, we were given a great deal of credit for the dramatic recovery which was seen in Randy's speech. We accepted it. Yet, it points out to us the continuing need for early diagnosis and treatment of apraxia of speech, as well as a clear cut differentiation between aphasia and apraxia. In Randy's case, it meant the difference between a nursing home and a college education. Both the neurologist and the neurosurgeon gave Randy a poor prognosis. Ours was favorable, because we were able to identify the problem.

Perhaps, as we become more sophisticated in our diagnosis and treatment of neurological speech disorders, we will be able to present more papers entitled "Onset Through Recovery."