

Techniques in Treating Mild or High-level Aphasic Impairment
Panel Discussion

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Darley

Dr. Scott Moss in his book Recovery with Aphasia complains about the therapy he received at the University of Illinois after he became aphasic. He recounts almost gleefully the discomfiture experienced by the succession of student clinicians who seemed baffled by what to do with him. A high-level aphasic patient with a Ph.D. in psychology, he presented the image of (1) being smarter than all of the people working with him and (2) seeming to know more about the subject of aphasia than anybody else. How can we help patients like Dr. Moss who are aphasic but mildly?

Joseph Wepman in his 1951 Recovery from Aphasia described as a useful regimen the teaching first of a series of nouns, then at a given level of adequacy of retrieval of those nouns the teaching of verbs to go with them. So one might teach the nouns "knife" and "chair," then the verbs "cut" and "sit," and then go on to sentences such as "The knife cuts." Twenty-five years later Wepman has come to advise something quite different. He down-grades work on language as language. He believes that concentration on words leads to a struggle for accuracy in word finding that interferes with thought. He reminds us that it should be the other way around--that thought should be stimulated, which in turn leads to words as a means of its expression. He points out that speech should be the handmaiden of thought, not its master and controller. He advises us to stimulate the patient to think and allow to occur whatever verbal behavior the patient is capable of producing. We should keep the flow of ideas going, directing it toward the specific area of thought one has selected. He likens this process to what Weigl described as deblocking: reorganize the higher mental processes and permit the lower levels (that is, language comprehension and its use) to emerge.

Perhaps Wepman's change of ideas came about as his clientele changed. His first work was with severely aphasic soldiers injured in World War II who needed help in all aspects of language. More lately his clientele appears to have consisted of professional people--lawyers, doctors, psychiatrists--patients perhaps of higher level intellectually and perhaps with milder impairment that required somewhat different treatment.

Whatever the occupation or the intellectual level of the patient, we have the same experience with all patients who recover to a significant degree but who still aren't whole in terms of their language functions. They still show subtle comprehension deficits. They still require more processing time. They still lack some morpho-syntactic finesse perhaps. So we ask, "What works with these people?" What can we do to keep them moving ahead and also keep them content with trying?

I would like to mention two kinds of experiences that I have had. In both of these we were trying to concentrate on components of communicative interaction related to the patients' real world. One of them was a patient similar to some that Wepman has described, a reknowned psychiatrist for whom subtle language was really life itself and his bread and butter. It was clearly inappropriate to try to use something like Sarno's picture kit or Keith's workbook. This patient was ready to go back to work. So we discussed psychiatry. He was an artist of sorts and this interest seemed to constitute another appropriate vehicle for our work together. We discussed, for example, the painting that he brought me which represented aphasia. Our discourse would be something like this: "Why these dismal colors?" And then he would tell me of his selection of the colors to suggest that his life as an aphasic patient seemed dismal and depressed. "Why is there no blending together of the colors?" "Why does the white background show through?" He would tell me about the unfinishedness of everything as viewed by the aphasic patient who is never sure that he has his fingers on everything that is going on. "Why is that legend scrawled over it--'Aphasia--no clear channel.?'?" He would tell about his problems with spelling and his problems in coping with competing inputs. Since he knew more about modern art than I did, I would ask him questions about specific pieces of modern art. "What is Picasso doing in 'Les Demoiselles d'Avignon'?" "What was revolutionary about that painting?" "Where did Picasso go from there?"

Something we did we should have called "divergent semantic behavior" but not until Roberta Chapey came along and helped us understand it better did we have this name for it. The patient was enormously incapacitated in trying to think of groups of things fast. So we worked on having him think of as many of anything in a given classification as he could think of as rapidly as possible.

A second patient was a 17-year-old high school student with a traumatically incurred aphasia who was ready to return to school. We engaged in critical listening activities that seemed to be relevant to what he would have to do when he got back in the classroom, taking notes and understanding lectures. I would read something like this to him: "In 64 A.D. fire destroyed most of Rome. Christians were blamed for the fire. Many were executed as arsonists." Then it was the patient's task to give back to me all of the salient facts. We used this as a springboard and I would ask him, "Have you ever heard of anything else that happened like that?" "Did anything like that happen in Nazi Germany?" Later the paragraphs were longer: "A volcanic eruption occurred in southern Italy in the year 1631. Mt. Vesuvius erupted, then an earthquake and a tidal wave followed. More than 4,000 persons perished in the disaster." The patient tried to capture the salient facts and reconstruct the story, producing a précis. His accuracy increased and his fluency in retelling the stories improved.

These are suggestions of the kinds of things that might be useful with certain kinds of aphasic patients--patients who are well along in their recovery for whom more traditional activities and conventional materials might not seem appropriate.

In the past mildly aphasic patients were rarely seen on the Boston V.A. Aphasia Unit, perhaps because physicians tended to refer only patients who had obviously incapacitating language problems. More recently, however, more mild patients are being referred. We like to think this is because of a growing awareness among physicians that treatment can make a significant difference in the outcome of any aphasic patient. Within the last six months, for example, we have been called upon to treat three or four mild patients with the goal of returning them to the jobs they held before the onset of aphasia. In all cases their employment had been professionally high-level so that even mild language problems could prohibit them from successfully resuming their careers.

Needless to say, all our patients receive the Boston Diagnostic Aphasia Examination (BDAE) as part of their diagnostic work-up. But this test, even though it may tap a higher level of performance than some other aphasia exams, does not always uncover performance deficits in mildly aphasic patients, or in patients who are highly educated. That is not to imply that mild aphasia occurs only in professionals, but that it may be the case that a mild anomia, for example, is tolerated in a gardener, but not in a trial lawyer, to cite two actual cases seen recently in our unit. So, in addition to giving mild patients the BDAE, we administer several supplementary language tests. Many of these tests are found in the Goodglass and Kaplan text The Assessment of Aphasia and Related Disorders. They examine such abilities as appreciation of grammatical relationships. For example, a patient may be told, "That's my wife's brother. Am I talking about a man or a woman?" or "If I tell you 'The lion was killed by the tiger,' which animal is dead?"

We also use the Kaplan Sentence Arrangement Test which is analogous to the WAIS picture arrangement test and is particularly sensitive to stimulus-boundedness. Patients with this characteristic may have difficulty separating lexical items which frequently co-occur in running speech. For example, the patient is given the words "school/children/the/happy/filled/many" and asked to make a sentence. The correct solution is "Many happy children filled the school." A patient with mild aphasia may be unable to separate "school" from "children" and consequently be unable to construct a proper sentence from these words.

Another extremely useful test for mild patients is the Boston Naming Test (BNT) developed by Kaplan, Goodglass, and Weintraub. This tool allows us to identify subtle naming problems which may not be obvious with the BDAE. The naming test contains 85 line drawings of objects which become increasingly less common from the first to last items. To illustrate, the test begins with tree, pencil, and house and ends with spiral, yoke, and trellis. Patients who may name all six objects displayed in the BDAE may be unable to respond to the BNT to the level of their premorbid lexical capacity.

One of the most sensitive tests for minimal aphasia is the animal naming subtest of the BDAE, which measures fluency in controlled association. This requires patients to produce as many animal names as possible for 90 seconds, with the score based on the most productive 60 seconds of consecutive recall. In their 1978 study of patterns of spontaneous recovery from aphasia, Lomas and Kertesz found this test to be a good measure of residual aphasia.

Finally, we find that the information obtained from neuropsychological testing is useful to our management of the mild patient. For example, such patients may have difficulty with proverb interpretation and verbal abstraction tasks. Mild patients may fail to appreciate humor which is based on word play.

All of the information gleaned from supplementary language and neuropsychological testing helps us determine the individual treatment program for mild patients. Some of the materials we use are:

1. Uncaptioned cartoons, many from the New Yorker, for which the patient must supply an appropriate, humorous caption.
2. Sentence formulation tasks which require patients to make sentences out of single compound words by separating the two elements.
3. Multiple step verbal, cognitive tasks, such as giving directions from one geographical site to another.
4. Metaphor interpretation, such as those in which a body part is mentioned, e.g., "Button your lips" and "A chip on his shoulder." This task is less difficult than proverb interpretation since many of the approximately 200 body part metaphors we have thought of can be defined with a single word. For example, "cold feet" means "scared," and "tight fisted" means "stingy." Once a patient can interpret metaphors, proverbs are introduced.

Finally, we do not work directly on animal naming, but rather use this task as the dependent variable for measuring change and noting degree of residual aphasia.

Holland

Dr. Darley has stolen my thunder by his remarks. He has outlined the two best techniques I know of for working with high-functioning aphasic patients.

Before I become specific about a list of suggestions, it seems advisable to caution you that by "high-functioning aphasic patients" I am going to mean patients whose problems with language will slip through most tests for aphasia but who can be counted upon to be able to catalog some very real areas of deficit that they observe in their own language functioning. Usually these deficits involve subtle loss in the ability "to organize thoughts," often reflected in taking a longer time to do so, or some vague sense that they are not doing "it" (whatever organizing thoughts might be) with their former facility and style. In addition, anomia is a frequently encountered difficulty, as is sensitivity to distracting stimuli with some resultant effect on comprehension (reading or speech) or on ability to concentrate, and, finally, verbal memory generally. These are the major problems on which I will concentrate my remarks. These remarks are actually a list of random thoughts, reflecting perhaps my own loss of ability to organize.

1. Insofar as possible, use materials that are the actual stock-in-trade for producing the difficulties the patient has described. It seems silly to use simulations when the real things can be more profitably used. I'm thinking here of novels, crossword puzzles, brain-teasers, games, etc., that non-brain-damaged persons find linguistically satisfying.

2. Often working for more rapid performance is useful. For example, if a patient is being encouraged to read continuing material such as a

novel or biography of his interest, have him clock in and out of the activity, and work to increasing the page-per-minute count. (Clearly, this is a homework example.)

3. Writing is a usually difficult task. I ask patients to keep diaries as a start (again clocking the words written per minute) and work for longer entries and fewer errors. This activity can be expanded ad infinitum. For example, I am presently working with a patient who began with three-sentence diary entries and is presently writing not-bad short stories that I feel inadequate to edit.

4. For memory activities, I often use popular memory-improvement techniques, like Lucas and Lorayne's Memory Book, simplified (or not) to match a patient's level of function. (One of my crowning success stories is an aphasic patient who found that approach to be so useful that he decided to terminate our contacts, stating that he felt that seeing me was taking time away from his therapy.)

5. I feel the need to reiterate Dr. Darley's comments about using the aphasic patient-as-teacher. This is the most useful technique I know. It also has been a good way for me to learn a number of things I never knew about before, like the stock market, conservative politics, fishing, and how to derive a square root by hand.

6. T.V. is a marvelous source. Game shows are the most obvious, but summarizing plots of last night's Mash, taping Meet The Press and having the patient respond before the interviewer, then comparing answers, are also productive of good clinical material.

7. Story retelling and summarizing is a good activity. (If you get interested in discourse analysis, it's a nice data-source as well.)

8. I'll end with on-the-job training, or as close to it as possible. Most of the patients we've been discussing either have returned to work or are excellent candidates for it. They also have fears about this, perhaps justifiably. It is extremely useful to use clinic activities as either dry runs or to work on job-related tasks. An example is an aphasic woman who wished to return to work as a receptionist/typist. Half of her clinic time was spent under stern supervision in relieving the clinic's secretary, with all of the hustle-bustle of ringing phones, taking messages, etc. Over time she became convinced that she could handle a job again.

I've taken up more time than I've been allotted. And I have lots more suggestions. But these capture the flavor of our approach to the rehabilitation of high-functioning patients.

Linebaugh

The quality of verbal interactions depends at least in part on a relatively unimpeded flow of speech, conciseness, and specificity of word usage. Mildly aphasic patients with persisting word retrieval difficulties, however, experience frequent disruptions in their speech flow. Hesitations, verbal paraphasias, and circumlocutions all serve to reduce the quality of their verbal output. In addition, many of the word selection errors produced by aphasic patients indicate that the patient has accessed the appropriate superordinate category, but has failed to retrieve the appropriate lexical item within that category (e.g., knife/fork, chair/table, you know--that thing you comb your hair with). What follows is a brief description of a task designed to improve the lexical dexterity of aphasic patients and the results of the application of this procedure to one patient.

The purpose of this Lexical Focus Task is to improve an individual's ability to retrieve lexical items within a given superordinate category, and thereby improve his overall word retrieval skills. The patient's task is to list as many items as possible within a given category. When a satisfactory number of items has been retrieved in a broader category, the patient is asked to list items in progressively narrower categories. Thus, once a patient has listed 12-15 fruits and vegetables, for example, he is asked to list fruits or vegetables alone and subsequently green vegetables, citrus fruits, etc. In addition, the use of strategies which may facilitate retrieval (e.g., What do you have in your refrigerator? Imagine you are walking through the supermarket.) is encouraged.

We used this approach with a 41-year-old woman who had undergone surgical resectioning of a left AVM three months prior to the initiation of language rehabilitation. Auditory and reading comprehension were excellent. Visual confrontation naming was marked by occasional verbal paraphasias. Conspicuous word retrieval difficulties were noted in the patient's narrative and conversational speech. Baseline performance on the Animal Naming subtest of the BDAE and Word Fluency measure is shown in Table 1.

Table 1. Performance on Animal Naming and Word Fluency Tasks.

<u>Task</u>		<u>Score</u>
Animal Naming	Baseline	11
	After 4 sessions	12
	After 8 sessions	13
Word Fluency	Baseline	13
	After 4 sessions	15
	After 8 sessions	16

The patient's description of the "Cookie Theft" picture was also analyzed using the procedure described by Yorkston and Beukelman (JSHD 45, 27-36, 1980) (Table 2). In addition, the mean number of syllables per content unit

Table 2. "Cookie Theft" Picture Description.

<u>Measure</u>	<u>Baseline</u>	<u>After 8 sessions</u>
Number of Syllables	124	67
Number of Content Units	23	18
Syllables/Content Unit	5.39	3.72
Hesitation Behaviors	9	3
Pauses	6	3
MLU (in syllables)	5.9	8.5

was calculated. Extrapolation from the Yorkston and Beukelman data suggests that the mean number of syllables per content unit is directly related to the presence and severity of a language impairment (Table 3).

Table 3. Mean Number of Syllables per Content Unit (Derived from Yorkston and Beukelman, 1980).

Group	Syllables/Content Unit
Normal	
19-49 years old	4.8
58-93 years old	5.7
Aphasic	
Mild	6.3
High-Moderate	7.4
Low-Moderate	7.7

The Lexical Focus Task was employed with this patient in eight treatment sessions over a two-week period. The results are shown in Tables 1 and 2. Note that while little change was observed in the patient's Animal Naming and Word Fluency scores, a substantial reduction in the number of hesitation behaviors and pauses, as well as the mean number of syllables per content unit was observed in her picture description. These findings are suggestive of improved word retrieval ability.

DISCUSSION

Comment: One thing I've done is to use the "Dear Abby" column. I read the letter to the patient and he must come up with the answer. Then we compare that with what Abby has to say.

Comment: I have a rather interesting situation at home where I am in charge of the lay readers for an Episcopal church. These are people from the congregation who get up and read a lesson. In this congregation there is a man who had a CVA and ended up very severely right hemiplegic. He was one of the lay readers before his stroke, and after his stroke he got back into the lay reading with my encouragement and with some assignments that I made. As soon as he began to visualize and to bring into his interaction with that reading to the congregation the feeling of having been there-- and he had actually served in Palestine during the '40's as an Army officer-- there was a striking impression that this was no longer somebody who had had brain damage talking.

Dr. Helm: You may recall my paper this morning in which I talked about the Landis-Graves-Goodglass study in which they looked at patients' ability to read aloud emotionally-laden words vs. nonemotional words, vs. concrete words. The patients were quite astounding in their ability to read the emotional words aloud much better. These were not necessarily bad, unpleasant emotions; these were also pleasant emotions, like love. Even global patients who could read nothing else aloud could read some of these emotionally-laden words aloud.

Comment: I got lots of ideas from your suggestions and I'm sure that they work. I have no doubt that they improve some abilities in mild patients. But it strikes me that we ought to be careful in working with some of these patients that we don't foster unrealistic expectations of return to normalcy, and delay or even make it difficult for them to get about the business of living with a mild deficit.

Moderator: You seem to be afraid that these people are going to think they are going to recover completely and may not be willing to live with some residual deficit. Where did that come from out of what we said?

Comment: Because the concentration was totally on improving their ability, as opposed to accepting some inevitable residual deficit.

Moderator: But you wouldn't want to sit around and talk about how they have got to be reconciled to it, now would you?

Comment: Well, I think that is just as important as trying to get them to their maximum abilities.

Dr. Holland: My sense was that we were to be talking about techniques for working with high-level patients, and I think that one of the reasons that we did not talk about counseling aspects, which I think are very important, is because of that focus. But I think that is a precaution well taken.

Comment: Occasionally when I have one of these experts (aphasic patients) teaching me something, I have misgivings sometimes that what he is teaching me is not quite right. If I know enough about it to help him find his own errors, then sometimes I do some homework and try to upgrade the quality of his teaching. Did you ever face that problem of not being sure that you were really teaching them so much as you were letting them have the opportunity to expand upon anything--right or wrong?

Moderator: I haven't worried too much about that. I'm glad to have them talking. I'm glad to have them regaining the security of talking about what is important to them. And I haven't set up a check list of accuracy.