A Model Treatment Approach for the Acutely Aphasic Patient

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INTRODUCTION

In 1966, Beyn and Shokhor-Trotskaya (1966) outlined what they called a preventive method of speech rehabilitation for patients with cortical motor aphasia, a condition typified by muteness in the face of relatively preserved auditory comprehension. They described a method designed to prevent agrammatism whereby the predicative function, as opposed to the nominative, was stressed in early phases of recovery, as was the use of holophrases that stand as complete sentences. The intent was to reconstruct the patient's "inner speech" by careful manipulation of "external speech." Their method included "auditory speech stimulation, the use of automatized speech combinations, general activation of the patient's psychic tone, and creation of a 'set' which makes the patient believe in the possibility of rehabilitation," and went on to suggest that the method was especially useful at an early stage after the stroke or trauma. Their data, while vague, appear to support their beliefs.

Since that time, and largely in relation to the English language, there has been growing understanding of the importance of pragmatic aspects of language, functional communication, and involvement of the conversational mode in rehabilitation of the aphasic patient. The approach to the very early stages of recovery to be described here reflects those more recent considerations. Yet, the principles relate well to Beyn and Shokhor-Trotskaya's work in another language almost twenty years ago.

TREATMENT PRINCIPLES

This paper describes an approach to early treatment of stroke-induced aphasia based upon three simple principles. The first reflects one of the very few predictable facts about spontaneous recovery--namely, that unless a medical setback occurs, one can count upon the process to produce positive change. Spontaneous recovery is at its maximum relatively soon after stroke, particularly if it has been a thromboembolic event, rather than a hemorrhagic one. The length of the spontaneous recovery period is not presently agreed upon, nor are there presently very good ways to predict its extent. But patients can be counted upon to change, sometimes daily, to the extent that a formal test given one day is passé tomorrow, and treatment plans based on it are equally likely to be outmoded. Aphasic syndromes may evolve as dramatically as the severity of aphasia.

The second principle reflects the fact that immediately following stroke, both patient and family are at their maximum state of ignorance about the event itself and its behavioral consequences. Both patient and family are at least as likely to be flooded with relief at the fact of survival from stroke as they are to be devastated by its consequences. The ability to absorb direct information may be quite limited. For both aphasic patient and family, the need for counseling is very high.

The third principle relates to the notion that in these early stages post stroke, the aphasic patient is inexperienced at being aphasic. S/he is unaware of, or at least unpracticed, in working within the limitations imposed by stroke, or of exploiting the capabilities untouched by the brain damage. In such circumstances, it is important to focus attention on what still can be done, what is improving daily, what positive factors remain, rather than on what the patient cannot do. Focus on strength, rather than deficit. Furthermore, this focus on the positive should occur in natural situations, namely conversation, as opposed to the relative unfamiliarity of across-the-table "treatment."

PROCEDURE OVERVIEW

These three principles; count on spontaneous recovery, provide counseling and use the familiar conversational mode to focus on remaining strengths--are at the heart of the approach evaluated here. The approach has evolved from procedures used in a large-scale study of the earliest phases of spontaneous recovery of 120 consecutive unselected stroke patients. In that study, patients are first seen within 3 days of stroke, and then interviewed daily at bedside for 15 minutes over the course of their hospitalization, a period that ranges anywhere from 4 days to a month or longer. When medical stability is achieved (operationally defined here as being ready to go home, or to be transferred to a rehabilitation center or chronic care facility), all patients are tested for the first time with the Western Aphasia Battery (WAB I) (Kertesz, 1982). If the patient's Aphasia Quotient is within normal limits (93.8), s/he is not seen subsequently. If the score is below that cut-off-point, s/he is retested one month later (WAB II). If aphasia is still unresolved at that point, patients are tested for a third time one month subsequently (WAB III). Thus, we have gathered a fairly complete record of the putative spontaneous recovery period, for both left and right hemisphere and brainstem stroke patients, concentrating our data gathering on the period in which maximum changes are likely to occur.

The daily visits are conducted by two trained speech and language pathologists. One functions as an observer, and tallies features of the interaction being witnessed. The visits are tape recorded for subsequent finer-grain analysis that focuses on the nature of language change in this early period. Our initial intent was merely to use the principles to highlight spontaneous recovery. It dawned on us only slowly that what we were doing was beneficial as well. And the data by which we have evaluated the utility of our approach has been retrospective also. I will describe the study next, and at the end, provide more explicit details of our approach.

Depending upon which hospital a given patient was in, on the orders of the physician, and on the wishes of the patient and family, some patients received formal speech and language therapy in addition to seeing us daily and some did not. From the large pool of patients, it was possible post hoc to match 6 pairs of patients, one of whom received conversational treatment, and one of whom additionally received daily didactic treatment of 30 minutes to one hour during the course of their hospitalization. Patients were matched for age, and for initial type and severity of aphasia using a five-point scale (5 = severe) at the time of the initial contact. All patients in both groups received physical therapy, either at bedside or in the rehabilitation unit. All but patient 2C received aphasia therapy after discharge. All patients had thromboembolic strokes. Patient characteristics and clinical impressions are summarized on Table 1.

Table 1. Summary of patient information and follow-up notes.

PAIR		SEX	AGE	IMPRESSION ENTRY	DAYS TO WAB I	TYPE BY WAB I		IMPRESSION AT WAB I	TYPE BY WAB II		IMPRESSION AT WAB II	TYPE BY WAB III		IMPRESSION AT WAB III	FOLLOW-UP NOTES
1	C	M	48	Global-3	16	Broca	=	Broca-5	Broca	=	Broca-4	Broca	=	Broca-5	-Increasing medical problems related to diabetes and depression.
	C&D	M	49	Global-4	16	Broca	=	Broca-5	Broca	=	Broca-3	Unclassifiable	ǂ	Broca-3	-Subsequent stroke and depression. AQ is now 15.2.
2	C	F	39	Global-5	20	Anomic	=	Anomic-2	Normal	=	Normal	*		*	-Increasing medical problems relating to diabetes.
	C&D	F	35	Global-5	19	TCM	ǂ	Broca-5	Broca	=	Broca-3	Anomic	=	Anomic-3	-Doing very well. WABOUT at 6 months post onset.
3	C	M	61	Broca-4	19	Anomic	ǂ	Broca-2 AOS-3 Dys-3	Normal	ǂ	Anomic-2	*		*	-Doing very well.
	C&D	F	61	Broca-4	16	Anomic	=	Broca-2 AOS-2	Normal	ǂ	Broca-2 AOS-2	*		*	-Doing very well
4	C	F	70	Global-5	9	Global	=	Global-5	Global	=	Global-5	Broca	ǂ	Global-5	-Little improvement. Pt died 7 mo. post onset.
	C&D	M	77	Global-5	17	Global	=	Global-5	Isolation	ǂ	Global-4	Global	=	Global-5	-Subsequent stroke. Pt died 9 mo. post onset.
5	C	M	70	Wernicke-3	10	Anomic	=	Anomic-2	Normal	ǂ	Anomic-2	*		*	-Doing very well.
	C&D	M	71	Wernicke-4	25	Wernicke	=	Wernicke-4	Conduction	ǂ	Wernicke-2	0		0	-Pt died 4 mo post onset due to pancreatic cancer.
6	C	F	68	Conduction-5	10	Wernicke	ǂ	Conduction-4	Conduction	=	Conduction-4 AOS-2	Conduction	=	Conduction-3 AOS-2	-Little improvement
	C&D	M	64	Conduction-4	14	Wernicke	=	? ? ? -4	Conduction	=	Conduction-2	Anomic	ǂ	? ? ? -2	-Continues to improve.
$\bar{X}$	C		50.3		14.0										
$\bar{X}$	C&D		51.0		17.8										

* WABOUT at WAB III
0 Pt not testable
= Clinical impression same as WAB type
ǂ Clinical impression not same as WAB type

RESULTS

Performance on WAB I (at time of discharge) and WAB II (one month subsequently) were compared using a repeated measures analysis of variance (Table 2). Because of the small sample size and because one patient died before WAB III, statistical comparison at 3 months was not possible. Before discussing the results of the comparison of these matched groups, it is important to point out that this study compared treatment approaches; it is not an efficacy study. There is no No-treatment Group; a virtual impossibility given the nature of the time period under study, and the requirement of matching consenting subjects from the data of their earliest observation.

Table 2. Means and standard deviations for both groups at WAB I and II.

	WAB I		WAB II	
	$\bar{X}$	σ	$\bar{X}$	σ
AQ				
Conversation	60.85	37.18	67.15	35.79
Conversation + Didactic	40.15	26.97	70.15	21.55
CQ				
Conversation	59.67	35.15	66.35	33.77
Conversation + Didactic	42.67	24.90	63.32	23.44
LQ				
Conversation	70.45	44.21	78.86	43.29
Conversation + Didactic	47.45	33.37	81.50	27.85

We compared aphasia quotients (AQ) those verbal and language comprehension parts of the WAB; cortical quotients (CQ) which Kertesz describes as a more general measure of cortical functioning; and LS, a language score obtained by adding the reading and writing subtest scores to the verbal and language comprehension scores. For all three measures, time was a significant effect ($F = 46.66$ for AQ; 65.23 for CQ; 47.03 for LS; $p < .01$) suggesting positive change in both groups attributable to spontaneous recovery or treatment or both. However, for each measure, there was also a statistically significant group x time interaction. Figure 1 shows the effect for AQ, CQ and LQ.

Both from this figure and from the means and standard deviations in Table 2, it is apparent that at WABI, the conversation-treated group was functioning at a substantially higher level than was the conversation + didactic group on all three derived measures. The interaction is explained by the statistically significant difference, favoring the conversation-only group at the time of WAB I. By WAB II, the conversation + didactic group had caught up.

These results were unexpected. Although we predicted a significant effect for time, we had anticipated finding no differences between the groups at WAB I. In fact, we would have interpreted such results favorably for our approach.

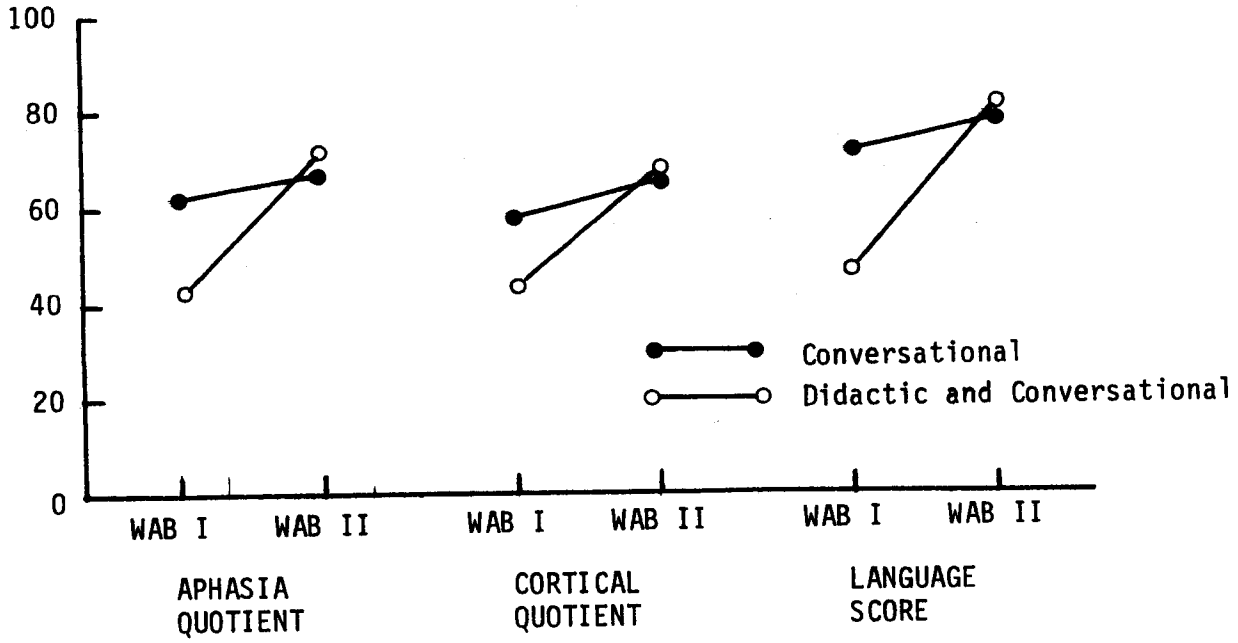

Figure 1. Changes in AQ, CQ, and LS for each group at WAB I and II.

DISCUSSION

Why did the conversation-only group leave the hospital in better condition than the other group did? Several explanations may be offered. First, of course, is that the effect is artifactual, brought about mainly by the one member of Pair 2 who began globally, and left the hospital almost completely recovered. But, given the robustness of the finding in face of small sample size and large variance, it is hard to dismiss. A second explanation comes from our observation that people who were exposed to the full range of rehabilitative effort early in the course of their recovery (a larger group than just these six, incidentally) were typically fatigued, and more easily fatigued than were patients whose formal rehabilitation was somewhat delayed. Not only therapy itself, but waiting for escort service, being shuttled from place to place, and then waiting for clinical services to be performed all contributed to the fatigue. Another possibility relates to our observation that in some patients, particularly those with comprehension deficits, being forced by the direct therapy process to confront their deficits early in the recovery process was agitating and frustrating. In some instances, this frustration and anxiety was directly verbalized to us. And for some patients, such awareness coupled with our more upbeat positive approach could have created confusion. Likely, some combination of these factors resulted in depressed WAB I scores. Certainly the patients were not generally sicker than were the conversation-only group.

It is clear, however, that the conversation-only group did not come off badly, even with the most conservative of interpretations. And since

our approach consumed a maximum of 15 minutes per day, as opposed to the minimum of 45 minutes per day for the augmented group, it was clearly the more efficient in terms of both patient and clinician time and wear-and-tear.

TREATMENT DESCRIPTION

For those who might be compelled by these data, I will conclude by describing the interactions in somewhat more detail. First, we saw all patients at bedside, and while we supplied magic slates or notebooks and pencils to patients who could use them effectively, basically we made use of the surroundings and our knowledge of the patients for treatment materials. Conversation was the clinical medium. These conversations were geared to increase verbal responding, and to increase appropriate responding by patients. The general approach encouraged patients to participate in communicative interactions to the best of their abilities. Each patient's language strengths and weaknesses were discussed with patient and family, and informal practice was given, with feedback to maximize strength and change. Each patient (and family) was informed of improvements over similar activities on previous days. For example, if a patient was demonstrating some anomia, he might be told the words in question, and informed that we'd try to remember to ask him about those words the next day. Then, next day, if, say, one of the four previously-missed words was correct, we'd remind him that yesterday he couldn't say any of them, and one out of four was better than none out of four. For patients with motor speech problems, if approximations were more intelligible, we'd provide that feedback. For patients with comprehension deficits, we might comment on the fact that he followed three commands today, and that yesterday only two similar ones had been understood. We used these patient-generated examples of improvement to illustrate the nature of spontaneous recovery, although we were always careful to point out that we were helpless to predict its full extent or course. We encouraged talking as a form of positive treatment. We encouraged the development of communicative strategies. We used our own interactions as models for the family to follow, and carefully explained them to the family. Above all, we gave as much of the communication burden to the patient as he could handle, in close-to-normal coversational interchange. Finally, we counseled both patient and family about the problems they were experiencing, and provided information about spontaneous recovery, about stroke, and about evolving rehabilitation plans. And very simply, we held a lot of hands.

CONCLUSIONS

We believe we did, in a dynamic conversational mode, what Beyn and Shokhor-Trotskaya suggested, although their focus was a much more narrow one, centered in structural linguistics. Predicative function is naturally stressed in conversation, allowing the normal practices of conversational cohesion, coherence and presupposition to create communication, if not necessarily sentences. We created a set for rehabilitation by helping patients' "psychic tone" (whatever that is) by our emphasis on the positive and by our counseling. We submit the model in hope that others may find it useful in acute care settings with post-stroke patients in the earliest phases of recovery.

ACKNOWLEDGMENT

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REFERENCES

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DISCUSSION

Q: Could you comment on whether your approach is documentable?

A: We keep track of everyday interaction. We tabulate what we're looking for. We are looking for change over time. We use an observation procedure modeled upon Halliday's work with children and my work on validating CADL. We count communicative events in which the patient has participated in every day, and what has been successful and what has failed. So it's a numeric way to look at change.

Q: How do patients respond to the conversational approach? Do they feel this is what is responsible for their changes?

A: One way aphasic patients in this stage are inexperienced is that they don't have any preconceptions of what treatment should be. We have asked patients much later about what they thought was helpful to them in the hospital. They mostly seem to feel that we were among the helpful folks. We do a lot of other things, incidentally, such as talking to physicians for them and helping families to frame their own questions for their physicians. There were some patients who had excellent comprehension and severe Broca's Aphasia and apraxia of speech, who were very ready for more traditional treatment. One patient (who was in this small study) told us that her recovery set was to show us every day how much better she was.

Q: What about reactive depression? Should it be handled by focus on deficit and by focusing on reinforcing on what he could do before or by focusing on strategies to overcome deficit?

A: We are no strangers to reactive depression. The earliest phases, I think, are not the time to deal with that, either. Reactive depression itself becomes more clearly focused as the spontaneous recovery lessens. In this earliest phase, I think it's best to focus on the inevitability of improvement through recovery.

Q: Do you think your approach could be carried out by nurses?

A: Nurses can do it, but they are very busy doing their own thing. I think speech and language pathologists are in a better position because they have the time to do it. They're the ones who have 15 minutes a day to visit and talk, and that's critical.

Q: Are you saying that our time might be best spent in these short 15-minute stints at bedside?

A: Yes. One of the things that bothers me is that somebody might think I'm advocating no treatment. It's terribly important that we maintain

our own power to define ourselves. I'm really advocating a new type of treatment.

Q: You defined this treatment as upbeat. Are you implying that didactic treatment is downbeat?
A: Yes. What patients have taught me is that focusing on strength and skill is much easier to accept than focusing on deficit.

Q: I always thought that in didactic treatment we exercised patients at levels at which they are successful. So to characterize it as working on deficits seems unfair. Couldn't didactic treatment be done in an upbeat way as well?
A: It could happen. But when you're sitting across the table from a patient who has not become used to aphasia, and externalizing for him that he's going to have problems in this session, I think that's essentially downbeat. It's an unusual situation, and he has no experience with it. It is painful to be faced with one's problems. I mean "upbeat" in a more wholistic sense than simply the nature of the stimulus material.

Q: Are you sure your results are the result of treatment or some other factor?
A: To the best of my knowledge, the patients in each group did not differ medically or in the course of their evolutionary patterns.

Q: You seem to be saying that it is very important to establish rapport before you do formal testing in the early phase.
A: No, I'm saying that tests in these early phases are a waste of time, given the nature of the evolutionary patterns. Being a warm person, using the special skills and tools of the speech patholgist's trade, is what's more important in the early phase.