

A Change of PACE: Spouses as Treatment Targets

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INTRODUCTION

Traditional programs for the treatment of aphasia have been carefully scrutinized by the critical eyes of many speech/language pathologists (Wepman, 1972; Chester and Egolf, 1974; Holland, 1978; Davis and Wilcox, in press). Largely as a result of these discussions the past decade has been an exciting one for those concerned with intervention strategies in the care of the aphasic patient. Notable among this movement have been the writings of Holland (1978) who, based on the study of the pragmatic component of language, has provided a conceptual framework for a basic re-orientation to treatment in clinical aphasiology. Conjointly, and within the context of these changes, spouses and other family members of aphasic patients are more often included as integral parts of a comprehensive language program. Further, recent literature suggests that spouses and other family members can benefit themselves, as well as the aphasic patient, through participation in training programs designed with these goals in mind (Newhoff and Davis, 1978; Webster and Newhoff, 1981).

Recently a unique approach to clinical aphasia treatment has been devised by Davis and Wilcox (in press). In contrast to traditional intervention programs, these authors based the response criterion for aphasic persons on successfully communicating a message. The patient may use any available means to do so—for example, gestures are encouraged as a supplemental mode. The approach is termed Promoting Aphasics' Communicative Effectiveness (PACE) and its objective is to maximize the patient's ability to communicate as independently as possible. Initial observations indicate that the approach is highly successful in improving communication between the clinician and the aphasic patient (Davis, 1980). It is understandable, therefore, that PACE is enjoying increasing popularity among speech and language pathologists as a viable approach to aphasia intervention.

PACE represents a change, however, in the approach employed for treatment of aphasia; a change which followed approximately 25 years of intervention programs which had as their rehabilitative emphasis the patient's language deficits, rather than his/her residual strengths. Small wonder, then, that spouses of these patients, lacking formal training in verbal or nonverbal communication systems, would not substantially modify their conversational roles even when confronted with an obvious lack of communication. Consequently it is also no wonder that interaction between the aphasic patient and his or her spouse is frequently reported to be frustrating and mutually unrewarding (Newhoff and Davis, 1978).

Because it is the case that PACE serves to significantly and positively affect communication between the clinician and aphasic patient, it seemed likely that it would also serve to enhance communication between the patient and his or her spouse. Obviously the aphasic patient must communicate in settings other than that in which she or he receives treatment. Further it

is probable that communication in the home environment is somewhat more meaningful to the patient than that which is accomplished (or avoided) elsewhere. The present study was designed to determine if interaction patterns between an aphasic patient and his or her spouse could be effectively and positively modified through an intensive spouse training program which was based on the principles of PACE. Review of current literature in the area suggested that the study was unique in at least two regards: 1) Spouses of aphasic patients, while recognized as integral parts of a comprehensive language program, have not been previously trained in the specifics of communication with the aphasic person. 2) PACE reflects some of the most current thinking regarding viable approaches to clinical management of the aphasic population. Therefore it seemed likely that the outcomes of this investigation could enhance communication of the aphasic patient generally, and the communication of the patient and spouse specifically.

PROCEDURES

Four spouses of male aphasic patients participated in this investigation. No spouse had a hearing, speech or language deficit and none was neurologically involved. Further selection of the spouses was made on the basis of criteria met by their aphasic husbands. These criteria are summarized in Table 1. There it can be noted that each patient; 1) was at least one year

Table 1. Aphasic patient data, including date of birth, onset date, date of PICA immediately preceding study, PICA percentile results, and pre- and post-taping dates, per spouse.

SPOUSE	BB	FC	JQ	RW
PT D.O.B.	1/7/29	11/28/12	6/12/24	3/6/24
ONSET	5/11/79	1/11/79	4/20/79	9/5/78
D.O. PICA	1/8/80	10/15/79	12/13/79	1/16/80
GESTURAL	40	27	31	87
VERBAL	41	35	8	44
GRAPHIC	38	28	54	81
OA	39	30	30	70
PRE-	4/11/80	4/30/80	4/12/80	4/12/80
POST-	7/31/80	9/26/80	9/26/80	7/11/80

post onset CVA; 2) exhibited primary expressive deficits, based on results of the Porch Index of Communicative Ability (PICA; Porch, 1967); and 3) exhibited an overall performance level in the range of the 30th to 70th percentiles, of the PICA. Additionally, each patient was enrolled in an aphasia intervention program at the initiation of the study. Finally, each

patient demonstrated normal hearing sensitivity for speech frequencies, based on audiometric evaluation. For the purposes of pre- and post-spouse intervention comparisons each subject and her husband were videotaped during a 15 minute interaction. The taping was accomplished in a laboratory setting within the month immediately preceding and immediately following the spouse treatment program. Pre- and post-taping dates are shown in Table 1. Instructions to each dyad at the time of taping were as follows:

I would like for you to spend some time interacting with one another as you might do if you were at home. Obviously this is an unnatural setting and it may be more difficult to converse than it would be at home. There is no right or wrong way to do it, however, so just do the best you can. Feel free to talk with one another about anything that you would like. If, however, you get "stuck" a list of possible topics¹ is on the table. But don't feel like you must use any or all of these topics. You are free to talk with one another in whatever way you choose, and about whatever subject you choose. We will tape approximately 15 minutes. Are there any questions?

Training took place in the home of each spouse. There were a total of eight treatment sessions which varied in length from 45 to 60 minutes. Further, each session included three conditions: 1) a nonverbal segment during which communication between spouse and investigator was solely dependent on gestures and/or pantomime; 2) a verbal segment in which each communicator had a turn at pretending to communicate as she perceived the aphasic husband would attempt verbal communication; and 3) a segment in which to communicate with modified verbalization accompanied by gesture, pantomime, drawing, etc. Following PACE protocol, during each session both investigator and spouse had turns as receivers and senders of messages. Additionally, as suggested by Davis and Wilcox (in press), to insure novel communication, materials provided for the first six sessions included a stack of at least 100 stimulus cards depicting written symbols which reflected that session's goals.

A summary of the treatment protocol is given in Table 2. Goals for each session were based on a sequence judged to become linguistically more complex over the eight sessions. For example, agents of action and objects were depicted in written form on the experimental materials of the second session (i.e., truck, TV, president, etc.). Action items such as love, sit, clean, etc., as well as two-word constructions in either the agent + action or action + object form were goals for session three. Adjectival lexemes were introduced in session four, while complete thoughts were presented in session 5 (i.e., Let's go shopping for food, I hope I didn't get fired, etc.). By session six, stimulus cards depicted only suggestions for topical discourse and in sessions seven and eight, spontaneous dialogue became the goal. At the onset of each session the immediately preceding session was reviewed and responses were made to questions. Throughout all sessions descriptive praise was used liberally to help the spouse recognize the modalities which best increased communicative efficiency. When the spouse message was

¹The list of possible topics included such suggestions as Last night's dinner, A recent TV program you watched, A special trip together, Your grandchildren and A recent happening in the life of a friend.

Table 2. PACE for spouses' protocol, including session number, session goal, and sample conversational stimuli.

Session	Goal	Sample Conversational Stimuli
1	Introduction and <u>PACE</u> rationale	
2	Agent/Object	truck, T.V., paper, president, couple
3 (a)	Action	clean, love, sit, carry lie, visit
(b)	Agent + Action Action + Object	boy run, girl kiss, run home, get money
4	Descriptors	thick, fast, yellow, smooth, impatient
5	Sequencing	Let's go shopping for food. I hope I didn't get fired. A man robbed the store.
6	Selected topic discussion	Something you do well Something you heard on the news Something that gets on your nerves
7	Free topic discussion	(Communicators were free in the
8	Free topic discussion	last two sessions to select from any stack and free associate, or to spontaneously engage in dialogue)

not easily received the investigator said so and encouraged the spouse to improve her communicative attempt.

ANALYSIS OF THE DATA

Five consecutive minutes of each pre- and post-experimental tape were viewed for the purposes of analysis. Language components chosen for statistical comparison included both verbal and nonverbal linguistic domains.

A. Verbal Individuals with aphasia, though demonstrating communicative deficits, are thought to remain linguistically competent (Holland, 1977). Specifically, they demonstrate competence in the area of speech acts. In view of the PACE emphasis on successful communicative attempts, a variety of speech acts were selected as measures of pre- and post-intervention spouse verbal language behavior. These included the following broad categories (Fey and Newhoff, 1978):

- 1) Requests Included herein were requests for action, for information, for permission, elicited imitation, protests, warnings, etc.
- 2) Comments Included herein were comments, praise and encouragement, etc.
- 3) Responses Included herein were answers to preceding dialogue, compliance, noncompliance, agreements, corrections, denial, etc.
- 4) Organizational devices Included herein were those structures which served to maintain contact and conversation such as well, hi, bye, okay now, etc.

B. Nonverbal Based on the work of Harrison (1974) spouse nonverbal behavior was classified as appropriate to one of the following three modes:

- 1) Performance This mode included the use of body movement or kinesics, human sounds, facial expression, and movement and posture of the hands and body.
- 2) Artificial This mode included the use of objects as signs.
- 3) Spatiotemporal This mode included arrangement of space and time to convey information.

C. Successful communicative attempts In this measurement category were all successful attempts at communication, regardless of mode or combination of modes, as previously defined by Davis and Wilcox (in press).

One investigator and a trained assistant simultaneously scored all data making a frequency count of behaviors appropriate to each of the three categories. Calculation by percentage of agreement showed overall interjudge reliability to be 97.6. The investigator subsequently rescored 50 percent of the data and intrajudge reliability by percentage of agreement was calculated to be 85.8. Although frequency counts were made of behaviors both within and between categories, many behaviors occurred too infrequently to allow for adequate statistical analysis. Additionally there appeared to be a great deal of variability between dyads. Thus, behaviors within each category were collapsed and comparisons made between categories both by individual and as a group.

Chi square statistical analyses, implementing Yate's correction factor for two conditions, were applied to each individual spouse's performance and to the four spouses as a group. All chi square values, by category, are contained within Table 3.

Table 3. Chi square values per category, by spouse and as a group.

Ss	Nonverbal	Verbal	Successes
JQ	11.0**	0.223	1.49
BB	1.63	2.01	0.029
RW	0.0357	0.0360	1.08
FC	0.0714	2.88	4.5*
GROUP	1.08	0.0096	0.00568

** p < .001

* p < .05

RESULTS AND DISCUSSION

As noted in Table 3 there were two significant results in the individual data: first, there was a significant pre- and post-treatment change in the nonverbal category for JQ; and second, there was a significant difference in successful communicative attempts for FC. Also noteworthy is the lack of significant results for the group comparisons.

In considering the change in nonverbal behavior observed by the spouse of JQ, the direction of change indicated that the significant difference was represented by a decrease in nonverbal categories post-treatment. A look at frequency counts within individual categories revealed negligible change in the artificial mode (pre = 4, post = 1) and no change in the spatiotemporal mode (pre = 2, post = 2). The major change was in the category of performance, where frequency counts decreased from 25 occurrences pre-treatment to six occurrences post-treatment. Thus it is the case that the major number of nonverbal behaviors in either the pre- or post-treatment data were in the performance mode. It is interesting that behaviors in the performance category are byproducts of, and/or accompaniments to, normal discourse. Further, this category represents the one nonverbal domain specifically not trained in the investigation. In fact, the decrease may well be explained by the training; that is, within the context of the treatment protocol "normal" discourse was replaced by quite modified communicative attempts. It is likely therefore that nonverbal accompaniments to dialogue would reduce due to a lack of iconicity in their use.

The second finding from the individual analyses, that there was a significant change in number of successful communicative attempts by the spouse of FC, was of particular interest to the investigators in view of the fact that successful attempts decreased post-treatment. Was not one of the purposes of treatment to positively effect a change in spouse/patient interaction? In an attempt to understand this finding the tapes were reviewed again, the raw data scrutinized and chi square values reexamined.

Suggestions for the decrease in successful communicative attempts resulted. First, it was observed that the couple became more interactive, with the patient assuming a larger share of the conversational load. In the same vein it was observed that this spouse reduced her verbalizations to a level closely approaching statistical significance. Finally frequency counts in the nonverbal area, by category, indicated that FC's spouse decreased her use of the performance mode following treatment (pre = 7, post = 3) and increased her use of the spatiotemporal mode (pre = 0, post = 4). As spatiotemporal usage was emphasized so heavily in treatment, and, as previously mentioned, performance usage was not a natural occurrence in treatment, the nonverbal change observed can be assumed to be a result of the treatment protocol. It was the case, therefore, that post-treatment, FC's spouse said less and showed more, while she requested increased verbal and nonverbal behavior from her husband and generally allowed him more opportunities for participation in the dialogue. Thus it would logically be expected that the number of events in which she successfully communicated a message to her husband decreased as she made fewer communicative attempts generally.

It was surprising to find that as a group there were no significant changes pre- and post-treatment. Perusal of the raw data seemed to indicate a fair amount of variability between patients, while variability within patients seemed less. This concern suggested the application of heterogeneity chi square analysis to determine sameness of the group. Results were significant ($p = < .01$) suggesting that the individuals were strongly different from one another. The difficulties which are pervasive in attempting to choose a homogenous population for aphasia experimentation are widely acknowledged. In the present investigation, homogeneity of spouses was not accomplished. It seems highly likely that heterogeneity of spouses might occur as a result of the patients' differences. That is to say, the behavior observed in spouses is perhaps influenced to such a degree by the husbands' output that great variability is to be expected. The present study was limited by the choice to study spouses with very little regard for the patients' contributions to the dialogue. Future attempts to resolve this issue should focus on the reciprocal nature of aphasic patient and spouse dyadic interchange.

Heterogeneity of the group under study may be due as well to pre-trauma communicative states. Informal observations of the pre- and post-treatment tapes lead to a number of questions in this regard. Do these couples "sit down and just talk" as they were requested to do for experimental purposes? The feeling of the investigators was that perhaps some do while others don't. For example, one spouse seemed to participate as a "token" conversationalist while another seemed to grant the patient and husband that role. Two spouses seemed particularly warm, yet assertive, exemplified in utterances such as I don't know what you're pointing to, Show me with paper and pencil, etc. Similarly, general conversational styles seemed to differ. For example, one spouse consistently allowed her husband the conversational lead, making her responses contingent on his. Although the husband's utterances were largely stereotypic (good or better, eat meat, go down there and I'm a too), the spouse seemed to accept such verbalizations as communicative. As she used them to attempt comprehension, it seemed she took them to be appropriate. Specific aspects of spouse input however, and its effects on dyadic interchange, await further study.

A number of other factors may have colored the findings. First, pre- and post-treatment taping was accomplished in a laboratory setting and while every attempt was made to put each couple at ease, it may well be the case that the dialogues are not adequately representative of daily discourse. Natural settings might be included in such studies in the future to increase probability of representativeness. Second, the sample size was small and the five minute period used for analysis might have been inadequate for conversational representativeness.

In general, however, it seemed to be the case that treatment affected discourse in ways not readily apparent in the statistical analyses. For example, there appeared to be more interaction in each dyad; a fact substantiated by increased communicative attempts by the husband post-treatment and a change in verbal strategies of each spouse. Whereas earlier, husbands remained more often in the receiver role, later they more often took the sender role. Discussion, disagreement and spouse utterances indicating lack of comprehension increased. Thus it occurred that a treatment protocol for spouses of aphasic patients, which had as its primary emphasis the nonverbal communication domain, affected change in verbal communication between the aphasic patient and his spouse. Nonverbal communication systems are enjoying increasing popularity in speech and language intervention programs as avenues to increased verbalization of language. Indeed Wilcox² has reported that when PACE principles are applied to intervention with aphasic patients, positive changes are in the verbal, rather than nonverbal areas. This seems to be the case when principles are applied to spouses with intact language systems.

The door to discourse analysis and the reciprocal nature of spouse-patient as well as other-patient interactions has only been opened. Further study of this area is warranted for a more thorough understanding of aphasia treatment in general, and spouse intervention specifically. Presently it appears that principles of PACE can be extended to treatment of spouses with random success. The complexity of the variables involved in choosing which spouses might benefit from the approach remains of concern.

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DISCUSSION

- Q: Did you train the spouse with the patient present?
- A: One of the things we considered at the outset was exactly that. However, the purpose of this present and initial study was to determine if a change could be affected in spouse-patient discourse by training the spouse exclusively. So we did not include the patient in the training sessions. It may well be the case that had training involved both patient and spouse we might have seen some changes that were not observed in the results we obtained. At the San Diego VAMC spouses are included in the patient treatment program. And they have begun to include PACE as a portion of the patient's treatment. To my knowledge, however, they don't specifically train the spouses, and if the effects of spouse inclusion have been measured, I'm unaware of the results.
- Q: Could you provide the sequence of events in your training, for example in Session 5?
- A: A stack of cards with written topics, for example Let's go shopping was placed on a table between us face down. Then, depending on who was sender, a card was drawn and attempts made to convey the message. When the spouse was the sender, and the message was received, I described for her those aspects which made the message easiest to receive. Conversely, if I acted as sender, upon receipt of the message I asked her what in my behavior seemed to facilitate her understanding.

Q: How accurate in terms of specifics did the message have to be?

A: Following PACE principles, each word did not have to be received. Rather the gist of the message was the element of concern, i.e., a successful communicative attempt.

Q: (Not intelligible from discussion tape)

A: Although this protocol was highly structured conceptually, at no time were spouses presented with a format which should have made them feel that this was a form of communication they should adopt. As I mentioned in the discussion section of the paper, a number of variables contribute to decisions regarding what spouses might benefit from such a treatment plan and which might not. Further studies are needed to delineate those variables.

Q: Is this a service you feel strongly enough about to charge for it?

A: Spouse intervention is such an important treatment aspect to me, that if you have a protocol which you feel works it's certainly justifiable financially. As long as we can effect positive changes in spouse-patient communication it should warrant fees as our other services do.