

A COMPARISON of SEMANTIC FEATURE ANALYSIS AND PROMOTING APHASIC COMMUNICATIVE EFFECTIVENESS FOR TREATING ANOMIA IN PATIENTS WITH APHASIA

This study used an alternating single-subject design to compare the effects of SFA and PACE on the long-term naming accuracy of two participants with chronic Broca's aphasia. Each participant was treated using the traditional form of SFA and PACE independently. Naming probes were taken to provide data in order to compare the two treatments. The results indicated that both procedures produced similar long-term improvements in naming the target stimuli but that both participants preferred PACE over SFA.

This study compared the effectiveness of Semantic Feature Analysis (SFA) and Promoting Aphasics' Communicative Efficiency (PACE) in treating the word-finding difficulties of two individuals with Broca's aphasia. SFA was designed to improve naming accuracy by presenting semantically related cues in a structured activity. There are six types of semantic cues in SFA: (a) semantic category, (b) use, (c) action, (d) properties, (e) location, and (f) associations. The theoretical basis of SFA is that these semantic cues can improve word finding by enhancing access to semantic networks, thereby allowing the aphasic patient to recall a word or the meaning of a word (Boyle, 2004; Boyle & Coelho, 1995).

PACE also seeks to improve a patient's word finding abilities by improving the ability to convey a message successfully. PACE is based on pragmatic communication and targets turn taking, conversational maintenance, and conversational recovery. There are four principles in PACE: (a) the clinician and participant participating equally as sender and receiver of the target stimuli, (b) a dynamic exchange of new information between the clinician and participant, (c) allowing the participant to communicate the target picture in any form (i.e., verbal, gestures, etc.), and (d) providing feedback from the clinician based on the participant's success in communicating the target concept (Davis & Wilcox, 1985).

This study compared SFA and PACE to determine which method is more effective and durable over time in the treatment of aphasic word finding difficulties. Accordingly, this study asked the following research question: Which treatment for anomia is more effective and durable, SFA or PACE?

METHOD

The study used an alternating treatment single-subject design to compare the effectiveness of these two procedures. There were 2 participants, LP and IM. Both were diagnosed with chronic

Broca's aphasia via neurological evaluation and standardized language assessment. Each treatment procedure was administered the same number of times. The participants started with opposite treatments as their first therapy session; LP started with PACE, and IM started with SFA. After the first treatment was assigned, the order of the remaining 23 sessions was semi-randomized to ensure that both participants received a total of 12 training sessions for each treatment.

Experimental Stimuli

A set of 220, 4 x 6 colored photo cards were used to obtain experimental stimuli. The cards showed common items and activities, including clothing, food, household goods, occupations, places, everyday tasks, sporting activities, and hobbies. The participants were asked to name each of these picture cards during three separate baseline data sessions. From the picture cards that could not be named over all three baseline sessions, two sets of 30 cards were randomly selected for each participant. Then the two sets of 30 cards were randomly divided into two sets of 20 pictures (treatment stimuli) and 10 pictures (untrained generalization stimuli).

Treatment Procedures

Treatment procedures used in this study closely followed those described by Boyle (2004) for SFA and by Davis and Wilcox (1985) for PACE.

RESULTS

The results in this study resembled those of previous studies where both treatments were shown to be effective (Boyle, 2004; Davis & Wilcox, 1985). The participants significantly improved in their naming accuracy of the 20 trained words in both treatment conditions. Long-term naming probe data (taken after the sixth treatment session, the last day of treatment, 1 week, 1 month, 2 months and 3 months (LP only) posttreatment) provided information on the long term effects of both treatments. At the 3-month probe, participant LP correctly named 7 (35%) of the treatment stimuli with SFA, and also named 7 words (35%) correctly with PACE. At the 2-month probe, IM named 5 (25%) of the treatment stimuli with SFA, and named 9 (45%) of the treatment stimuli with PACE. These data suggest that treatment effects for these two procedures are durable, at least for a sizable number of stimuli. Also, both participants showed modest improvement on the generalization stimuli. Participant LP accurately named 3 (30%) of these items on the 3-month naming probe with SFA; and with PACE, she ended with the same amount, accurately naming 3 (30%) of the 10 generalization stimuli. Participant IM correctly named 2 (20%) of the generalization stimuli with SFA, and with PACE, she accurately named 4 (40%) of these items. This naming probe data suggest that both treatments provided a modest generalization spread to untrained stimuli.

Inter-Judge Reliability

All naming probe sessions were videotaped. A second examiner viewed each session to rescore the probes, from which a unit-by-unit agreement ratio was calculated. To obtain the percentage, the number of responses agreed on was divided by the total number of responses reviewed. That number was then multiplied by 100 to obtain a percentage. This was done separately for SFA and PACE; however, the two participants' scores were combined for the final percentages. Inter-judge reliability for the naming probes for SFA was 94.3%, and 96.7% for PACE.

DISCUSSION

This study found that both treatment methods were equally effective in improving naming accuracy of trained stimuli and that modest generalization to untrained stimuli also occurred in both conditions. Furthermore, the naming probe data revealed that the long-term duration of the treatment effects were similar. On the 2 and 3 months naming probes, the participants were able to accurately name 30-40% of the trained stimuli in both conditions. However, throughout the study, the participants strongly preferred the PACE treatment. The beginning stages of the PACE treatment took approximately the same amount of time as the SFA sessions, but as the participants became more familiar with the two procedures, the PACE sessions only required 25 to 35 minutes, which was about an hour less than that for SFA. Moreover, the participants reported that PACE treatment was less stressful, as both the participant and the clinician participated equally as sender and receiver. Additionally, the cues used during PACE treatment were more contextual and natural. During the PACE treatment sessions, the examiner noted that the participants spontaneously began to better attend to the face of the examiner when the message was not understood, and they would try to send the message using another modality (e.g., gestures). This ability to use any form of communication necessary to convey the message was appreciated by the participants. Both participants primarily used verbal responses and some supplemental gestures to communicate, but by the end of the study, IM's daughter noted that IM started to use gestures more effectively and creatively to communicate in day-to-day situations.

It must be noted, however, that in the PACE condition the participants did not have to verbally produce the target word in order to be correct. As long as the target word was successfully conveyed to the examiner through any modality, the participant could be successful. This distinction, along with the shorter duration of the sessions, probably accounts for participants' preference for PACE over SFA.

REFERENCES

Boyle, M. (2004). Semantic feature analysis treatment for anomia in two fluent aphasia syndromes. *American Journal of Speech Language Pathology*, 13(3), 236-249.

Davis, G. A., & Wilcox, M. J. (1985). *Adult aphasia rehabilitation: Applied pragmatics*. San Diego, CA: College-Hill Press.