Response Elaboration Training: Application to Procedural Discourse and Personal Recounts

Response Elaboration Training (RET; Kearns, 1985) is a verbal production treatment for aphasia that was designed to facilitate increased content and length of utterances. RET was developed on the premise that treatment should encourage the creative use of language rather than restrict the speaker's productions to predetermined, convergent responses.

RET entails elicitation of verbal productions of the speaker's choice in response to action pictures. Then, clinician modeling and forward-chaining are employed to assist the speaker in expanding upon his/her original production.

Kearns and colleagues conducted a systematic series of investigations to examine the effects of RET (Gaddie, Kearns, & Yedor, 1991; Kearns, 1985; Kearns, 1986; Kearns & Scher, 1989; Kearns & Yedor, 1991). Wambaugh and colleagues (2000; 2001) modified RET to allow application with persons with apraxia of speech and Conley and Coelho (2003) combined RET with Semantic Feature Analysis (Boyle & Coelho, 1995). Across the relatively numerous RET investigations, 17 persons with aphasia have demonstrated positive effects of treatment (12 with Broca's aphasia, 3 with anomic aphasia, and 2 with conduction aphasia). Aphasia severity among participants has ranged from relatively mild to severe.

Although strong response generalization effects of treatment have been demonstrated for RET (i.e., improved responding with similar, untrained pictures), stimulus generalization has received relatively limited study. Kearns and Scher (1989) found mixed results with respect to elicited discourse for three speakers. Wambaugh and Martinez (2000) reported modest changes in personal recounts for two of three speakers as a result of picture level RET training. When they modified RET to apply it without pictures in a personal recount condition, slight additional gains were evidenced.

We speculated that application of RET without pictures, but in a more structured condition than personal recounts, may stimulate generalized responding. Consequently, this investigation was designed to explore the effects of RET applied to procedural discourse as well as to personal recounts.

Method

Participants

Three individuals with chronic aphasia served as participants. Participants 1 and 3 received a diagnosis of anomic aphasia and Participant 2 received a diagnosis of Broca's aphasia according to Western Aphasia Battery criteria (WAB; Kertesz, 1982). All exhibited word-retrieval difficulties and inefficiencies in production of information in discourse. Descriptive data and pre treatment assessment results are shown in Tables 1 and 2.

Experimental Stimuli/Discourse Elicitation

Procedural Discourse. A pool of twenty items was developed to elicit procedural discourse (see Appendix). Items, such as the following, required the participants to provide detailed procedures concerning activities that were known to each of them:

Tell me in detail how you would go about moving to a new house.
Tell me in detail how you would go about getting groceries.

For each participant, the items were quasi randomly assigned to two sets of 10 items each. These sets were balanced in terms of production of number of correct information units (CIUs; after Nicholas & Brookshire, 1993) in the baseline phase. The participants were allowed as much time as needed to respond to each item. Following an indication by the participant that he/she was finished responding to an item or upon a silence of at least 15 seconds, the examiner provided one prompt for additional information (i.e., "Is there anything else?").

Personal Recounts. Participants were asked to talk about any topic or topics of their choice for a period of five minutes (after Wambaugh & Martinez, 2000). They were always reminded in the session prior to the conduct of a personal recount probe that this elicitation condition was going to occur in the upcoming session. In instances in which the participant stopped talking prior to the end of the timed session, the examiner provided prompts to encourage continued talking (e.g., "Anything else?"; `What else can you talk about?'; `You still have time left.'). The examiner provided minimal interaction during the personal recounts; only verbal and non verbal minimal encouragers (e.g., head nod, "mm hm) were used.

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Experimental Design

Multiple baseline designs across behaviors and subjects were used to examine the effects of treatment on the production of CIUs and words in the procedural discourse and personal recount conditions.

In the baseline phase, production of CIUs and words was measured repeatedly for each set of procedural discourse items and the personal recount condition. The number of baseline sessions was extended across participants, with probing continuing until behavioral stability was evident (or performance was not increasing).

Following the baseline phase, treatment was applied sequentially to the procedural discourse sets and the personal recount with the order of application being counterbalanced across participants. During the treatment phases, probes were continued to measure performance with trained and untrained behaviors. Follow up probes were conducted at 2 and 4 weeks following completion of treatment.

Dependent Variables

In probe sessions, the order of administration of the two procedural sets and personal recount was randomized. The order of the ten items within the sets was counterbalanced. All responses were audio recorded and then orthographically transcribed by the examiner. Number of CIUs and words were calculated for each condition following procedures described by Nicholas and Brookshire (1993). For the discourse sets, responses to the 10 items were totaled to obtain an overall total. All productions in the 5 minute discourse sample were used to calculate totals.

Treatment

Treatment was modeled after RET procedures employed by Wambaugh and Martinez (2000). For treatment in the personal recount condition, procedures were identical to those of Wambaugh and Martinez (2000). In the procedural discourse condition, minor modifications were made: 1) modeling of procedural steps was used rather than modeling of verb or noun phrases, 2) requests for elaborations were specific to the procedure rather than being general in nature, and 3) retelling of the procedure was required. Each of the ten procedural items in the set designated for treatment received treatment every session.

Treatment was administered by an ASHA certified speech-language pathologist three times per week. Sessions were approximately 45-60 minutes in length.

Results

The number of CIUs and words produced in probes is displayed in Figures 1-3 for Participants 1-3, respectively (note: proportional CIU production can be inferred from the figures).

As seen in Figure 1, Participant 1 demonstrated no clinically meaningful changes in response to treatment of both procedural lists and the personal recount condition. In contrast, Participant 2 evidenced gains in number of CIUs and words with treatment for Procedural Set 1. Gains were evident for both the treated and the untreated procedural lists. No changes were noted for the personal recount condition for Participant 2. Participant 3 also demonstrated gains in production of CIUs and words with treatment of Procedural Set 1. However, no concurrent changes were noted in the untreated procedural set. Like the other participants, no changes were observed with treatment of the personal recount condition.

Efficiency data (CIUs/time) will be calculated.

Conclusions/Discussion

The results of this preliminary application of RET to procedural discourse indicate that such treatment may have benefit for some persons with aphasia. However, changes in procedural discourse were not associated with changes in personal recounts. Possible explanations for the lack of improvements noted with the personal recount condition (and for Participant 1 in all conditions) will be addressed.

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Table 1

Participant Characteristics

Characteristic	P1	P2	P3
Age	73	55	36
Gender	Male	Female	Male
Month post-onset	12	424	36
Years of Education	12	14	16
Lesion	L MCA	L MCA	L MCA
Former Occupation	Construction foreman	N/A	Mortgage broker
Marital Status	Married	Single	Married
Living Arrangement	With spouse	Independent	With Spouse

Table 2

Pre Treatment Assessment Results

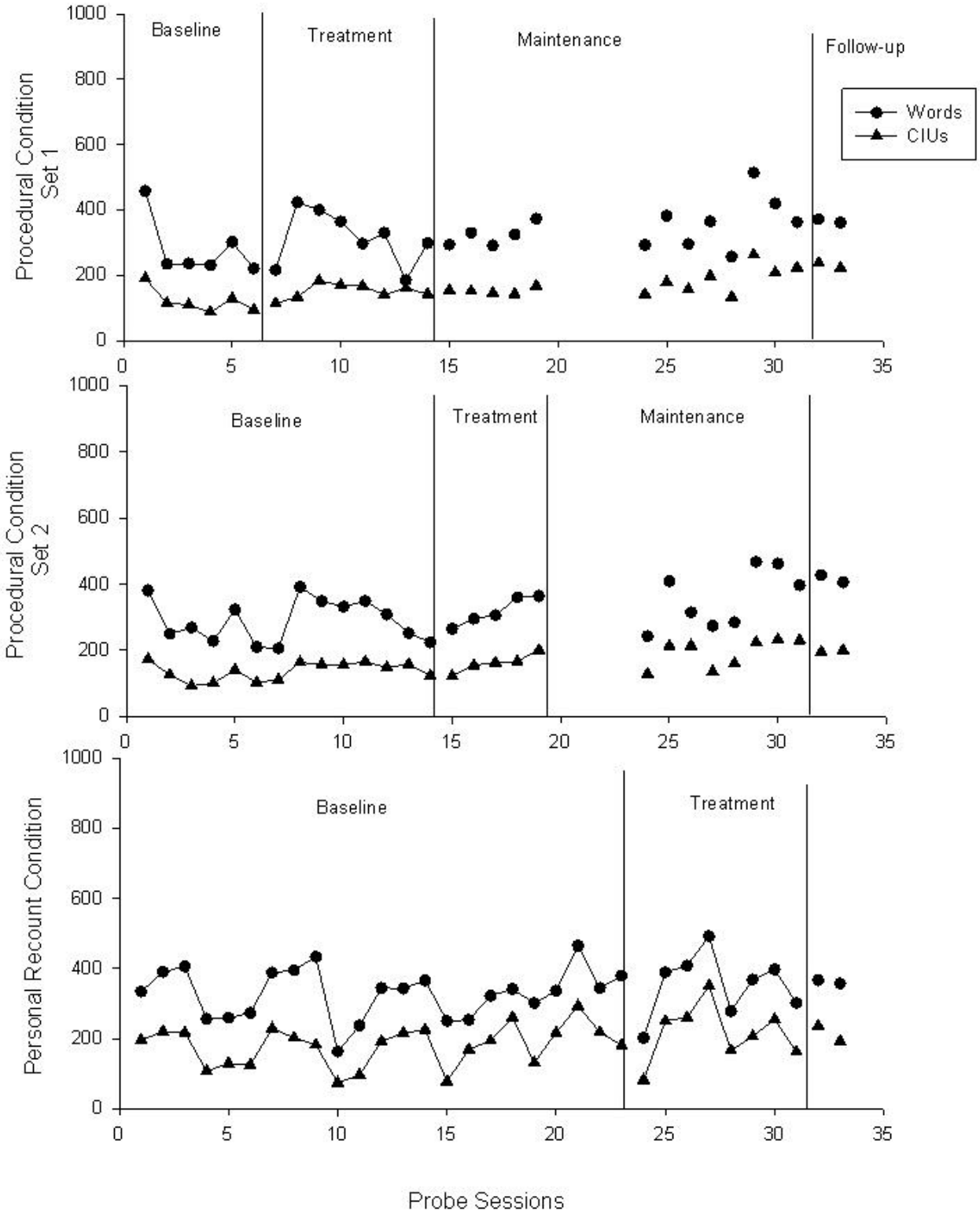
Measure	P1	P2	P3
TONI-3 (Brown, Sherbenou, & Johnsen, 1997)			
Raw Score	9	23	30
Percentile	10*	26	98
Hearing Screen 40dB HL			
500, 1k, 2k, 3k at least 1 ear	Passed	Passed	Passed
Western Aphasia Battery (Kertesz 1982)			
Aphasia Quotient	74.1	73.8	91.8
Subtests (AQ totals)			
Spontaneous speech	11	13	18
Comprehension	8.75	8.4	9.2
Repetition	9.2	6.9	9.1
Naming	8.1	8.6	9.6
Aphasia type	Anomic	Broca's	Anomic
Porch Index of Communicative Ability (Porch, 2001)			
Overall percentile	46	79	83
Verbal percentile	68	65	81
Auditory percentile	74/99	74/99	74/99
Assessment of Intelligibility of Dysarthric Speech (Yorkston & Beukelman, 1981)			
Word level—percent intelligibility	52	72	100

Apraxia Battery for Adults-2nd Edition (Dabul, 2000)			
Level of impairment	No AOS	mild	mild
Object & Action Naming Battery (Druks & Masterson, 2000)			
Total # objects named correctly Full List A or B (81 possible)	64	75	76
Total # actions named correctly Full List A or B (50 possible)	32	45	45
Test of Adolescent/Adult word Finding (German 1990)			
Total raw score (107 possible)	63	75	90
Percent comprehension	798	100	100
Verb & Sentence Test (Bastiaanse, Edwards, & Rispens, 2002)			
Sentence comprehension	31/40	25/40	37/40
Grammaticality judgment	32/40	30/40	38/40
Filling in finite verbs	5/10	3/10	5/10
Filling in infinitives	6/10	8/10	7/10
Sentence construction	11/20	14/20	14/20
Sentence anagrams with pictures	8/20	20/20	12/20
Sentence anagrams without pictures	9/20	18/20	10/20
Wh anagrams	3/20	7/20	20/20
Nicholas & Brookshire—Discourse tasks (Nicholas & Brookshire, 1993)			
Total # CIUs	498	554	902
Total # words	1113	1323	1348

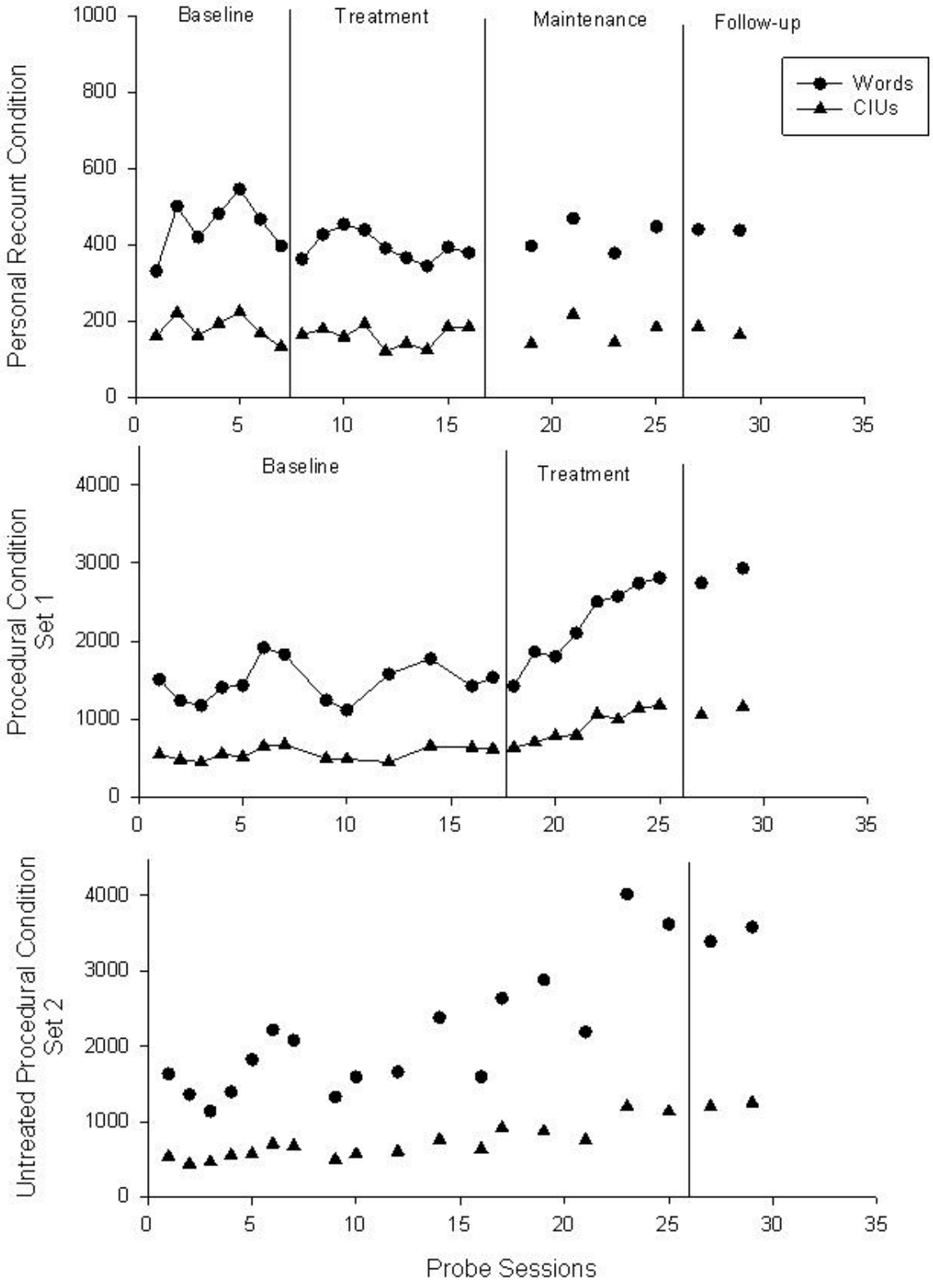
Personal Recount—5 minutes			
Total # CIUs	196		260
Total # words	334		394
Communicative Effectiveness Index (Lomas et al., 1989)			
Total	61/100	89/100	31.5/100
Communication Activities of Daily Living-2 (Holland, Frattali, & Fromm, 1999)			
Raw Score	53/100	96/100	95/100
Percentile	18	97	96

*P1: Ravens Coloured Progressive Matrices score: 21

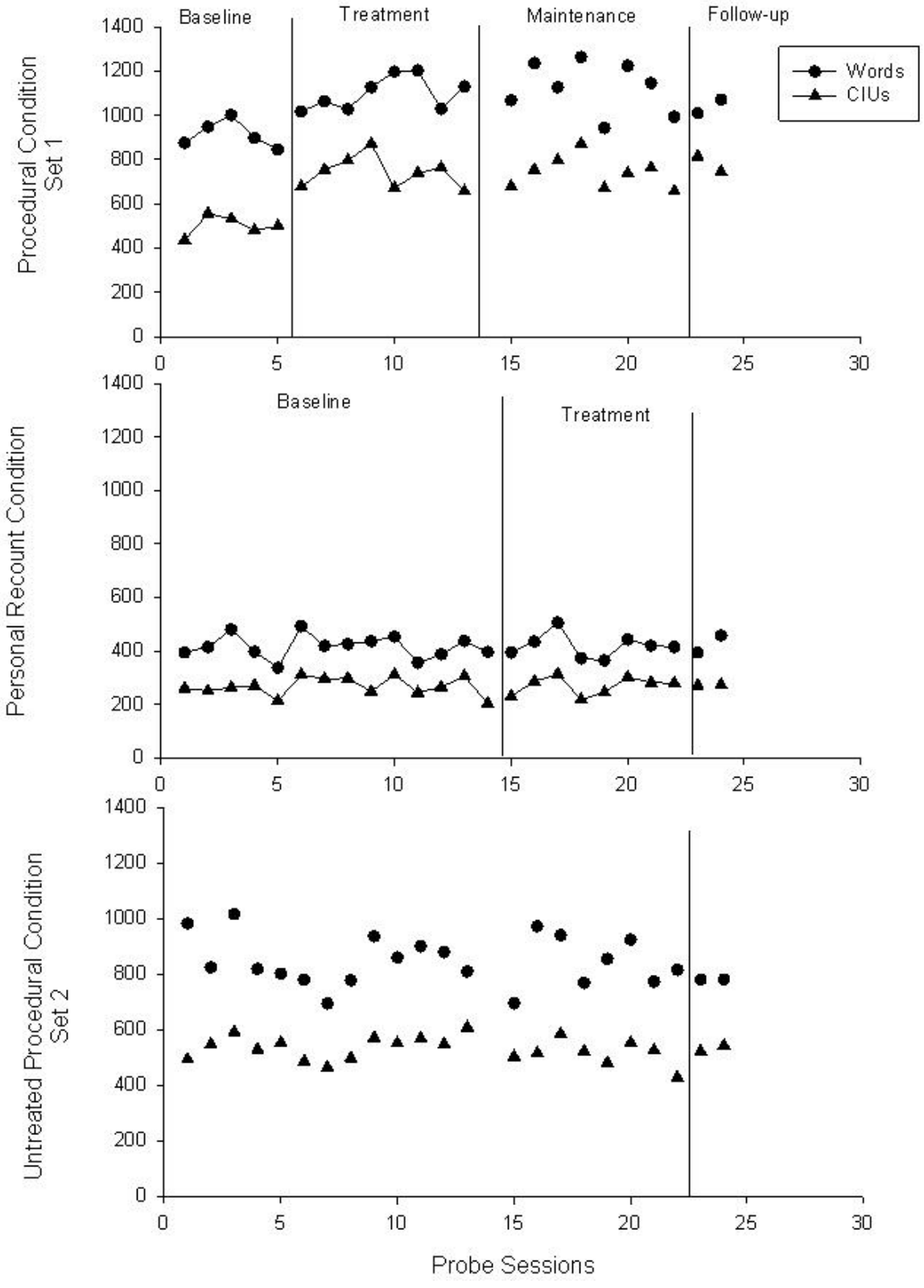
Participant 1: Number of CIUs and Words



Participant 2: Number of CIUs and Words



Participant 3: Number of CIUs and Words



Appendix

Pool of Procedural Items

Experimental items for each participant selected from the following pool of items:

1. Tell me in detail how you would go about laying a cement pad
2. Tell me in detail how you would go about making a tuna
3. Tell me in detail how you would go about getting ready for church
4. Tell me in detail how you would go about washing a car
5. Tell me in detail how you would go about doing the laundry
6. Tell me in detail how you would go about getting gas
7. Tell me in detail how you would go about getting the oil changed
8. Tell me in detail how you would go about shaving
9. Tell me in detail how you would go about fixing breakfast
10. Tell me in detail how you would go about moving to a new house
11. Tell me in detail how you would go about getting groceries
12. Tell me in detail how you would go about putting up a fence
13. Tell me in detail how you would go about planting a tree
14. Tell me in detail how you would go about having a party
15. Tell me in detail how you would go about making the bed
16. Tell me in detail how you would go about making lemonade
17. Tell me in detail how you would go about buying a car
18. Tell me in detail how you would go about fixing a dripping faucet
19. Tell me in detail how you would go about seeing a doctor
20. Tell me in detail how you would go about giving a talk