Cueing verbs: A treatment strategy for aphasic adults (CVT)

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Abstract—This investigation demonstrated that the treatment protocol, “Cueing Verbs: A Treatment Strategy for Aphasic Adults” (hereafter referred to as CVT), was an effective rehabilitation technique. Specifically, this CVT was shown to be beneficial with marked/moderate to mild fluent aphasic adults. Additionally, the study addressed such issues as optimal treatment frequencies, treatment initiation and termination points, and criteria for success and failure. Finally, the six-tier hierarchy of treatment levels are presented with all variables operationally defined.

INTRODUCTION

The establishment of efficacious treatment protocols for aphasic adults is a complicated, time-consuming, and difficult endeavor. The need for reliable treatments for various types and degrees of aphasia, with factors such as optimal treatment frequencies, continues to be in high demand for most clinicians treating this population of patients. The present study reports an early stage in an attempt to provide these health care professionals with an effective treatment tool, “Cueing Verbs: A Treatment Strategy for Aphasic Adults (CVT),” based on sound theoretic and behavioral evidence.

One language theory, quite common in the fields of cognitive psychology and generative semantics, proposes a case grammar in which the verb is the predicate core of all simple sentences (6). A predicate can be defined as a “general function that specifies the relationships that might exist among some set of concepts.” Utilizing the verb as the propositional core of sentences has allowed several researchers (11,15,18,19) to postulate that language and memory are in fact built around the verb. Most commonly, events of an individual’s database (knowledge and memory) are represented by centering all language procedures around the action. Therefore, action, in our opinion, is the central node.

For an individual to utilize language, it is first necessary to identify the relationships of the language concept to the action being described. To generate the meaning of an event without dealing with the ambiguities at the surface structure, the action must first be identified. The verb is chosen because it is the only terminal element in the structure; any change in the verb form would necessarily change the meaning of the event (4).

Figure 1 depicts the system based on the verb as the central node which specifies that: 1) the individual or thing that carries out the action is the agent or instrument; 2) the person or thing that is affected by the action is the object or recipient; 3) any object that the actor uses is the instrument; 4) the thing that causes the action to take place is the purpose; 5) the place where the action takes place is the
Figure 1. Language system based on the verb as the central node.

In order to tap the most useful and meaningful aspects of language, it appears advantageous to use the internal structure. Since transformations are operations applied to the internal structure, they may be superfluous in terms of language stimulation. The actor-action-object framework, by previous definition, supercedes grammatical function, and therefore, transformations. As seen in Figure 1, the interrogatives who, what, when, where, why, and how are linguistically analogous to the constructs discussed by Bever. Linguistically, the verb and action appear equivalent.

Shafto (20) examined memory for simple sentences in 12 undergraduate students. He found that memory is a function of the predicate structures of the main verbs, rather than of the surface structures or noun elements of the sentences. These results further support the notion that the internal structure is the center point for language and that the verb is the pivot point for language knowledge as well as for memory. Further, researchers have developed computer languages (18) and language models (14,15,19) based on the verbs that have provided a structural framework wherein language concepts can be fastened. Utilizing the verb as the central node allows for expansion into the subject-verb-object framework via the strategies of wh-cueing.

The previous flexible, highly functional mode of language representation appears to be applicable to the field of aphasiology. Yet, investigations into the linguistic deficits of aphasic patients have neglected the verb and its application to internal structure. Nouns, transformations, and morphology are among the most researched areas in aphasiology, while only a few researchers have included the verb in their analysis of aphasic disorders. Wepman, Bock, Jones, and VanPelt (25) considered the disorder of anomia. In addition to difficulty in noun naming, their aphasic subjects showed an absence of all but the most frequent verbs and adjectives. Both Halpern (9) and Siegel (22) examined repetition of nouns, verbs, and adjectives, and their findings indicated that both verbs and adjectives were more severely disturbed than were nouns in their aphasic patients. These results for verbs and nouns have been corroborated by Loverso and Craft (12).

In 1973, Goodglass (7) observed agrammatic patients. The results of these observations may shed an interesting light on the preponderance of noun-centered approaches in aphasiology. Goodglass found that his subjects tended to produce one-word sentences, where all words, whether they represent
nouns or verbs, were transformed to a nominal function. Nouns (or the nominal case) appear on the surface to be what is least disturbed, and therefore should be an adequate stepping stone from which to build language rehabilitation. In fact, the opposite may be true; perhaps it is the nature of the disorder to nominalize all language forms and therefore cause a dead end to further language facilitation. Most recently, cross-linguistic studies of aphasic patients' comprehension strongly support the verb as the central unit for language/information processing (1).

It was the purpose of this investigation to examine the applicability of the CVT to treatment for patients exhibiting aphasia. Our aim is to provide initial behavioral evidence about the effectiveness of treatment in improving productive language skills and the actual treatment approach utilized in this study.

METHODS

Subjects
The following selectional criteria were used to establish candidacy for inclusion in this study:

1. All subjects were at least 6 months past the onset of aphasia.
2. Each subject was at or above the 50th percentile on the Porch Index of Communicative Ability (PICA) overall measure (16).
3. All subjects showed a stable baseline (plus or minus 5 percentile points) for the overall measure of the PICA over a 3-consecutive-month period.
4. Each subject was left-brain-damaged as confirmed by 3 of the following 4 procedures: a) abnormal angiogram; b) abnormal motor signs; c) abnormal CT scan; or, d) abnormal brain scan. (Any subject who exhibited right hemispheric brain damage was excluded from the study.)
5. Each subject showed no more than 30dB hearing level as measured by a hearing screening test.
6. Each subject had sufficient visual acuity to perform the task as measured by a visual screening procedure.

Subject No. 1 was a 68-year-old right-handed male who sustained a left temporal parietal infarct 8 months prior to inclusion in the study. Initial speech/language testing indicated a moderate aphasia. This patient had a high school education and was a retired bricklayer.

Subject No. 2 was a 59-year-old right-handed male who suffered a left temporal lobe infarct 7 years prior to participation in this investigation. This patient’s initial speech/language evaluation, 3 months before beginning this treatment protocol, indicated that his performance was in the moderate range of aphasia. This subject was divorced, lived alone, and had a college education.

Based on speech/language performance, three independent judges, all of whom hold doctorates in Speech/Language Pathology, determined that both the patients had fluent aphasia. Additionally, each subject had reached maximum benefit from treatment, as indicated by stable speech/language performance.

Scoring
Both graphic and verbal output for each patient was scored. This scoring system was liberally adapted from the multidimensional scoring system for the PICA. Criterion scores were PICA scores of 13, 14, 15, and 16. Any score falling below criterion range was considered incorrect. Scores were tallied for each session and the percentage correct was graphed. Scores of 90 percent for 3 consecutive sessions were considered criterion for moving on to the next level. Patients were given scores for their initial response. Since this is a treatment technique, treatment interactions were initiated only after the first response was obtained and scored. See Table 1 for a complete description of scoring methods.

Treatment frequency/duration
Subjects were scheduled for 1-hour treatment sessions at least 3 times weekly. Duration of treatment was established by each subject’s individual performance at each treatment level. Treatment continued at each level until 90 percent performance for verbal and graphic scores was observed over 3 consecutive trials or 20 sessions at any given level was recorded.

Stimuli
The stimuli for this investigation were 30 verbs (same) at each level. They were: give, learn, run, think, buy, feel, find, keep, call, write, read, want, have, like, eat, help, look, cut, live, speak, win, go, draw, play, start, grow, move, plant, make, and hit.
Table 1.
Summary of scoring descriptions.

Scoring: Scoring both verbal and graphic output x/o, x-verbal, o-graphic

A. Criterion for each level (PICA 13, 14, or 15)
   1. 15 = complete response
   2. 14 = distorted but intelligible (graph or verbal)
   3. 13 = complete with delay including self corrects.

B. Below Criterion (PICA 12 or under)
   1. 12 = syntactical error
   2. 11 = syntactical error with delay
   3. 9 = repeat input if:
      a. Patient asks for a repeat.
      b. There is no response for 30 seconds.
      c. Patient does not do task.
   4. 8 = wh words such as who and what are repeated with the verb after a repeat has occurred.
   5. 7 = spelling errors or related semantic errors.
   6. 6 = unrelated semantic errors, e.g., patient given who cue for subject and responds with an inanimate or nonhuman noun. An occupation human noun is acceptable for a what cue.

The linguistic stimuli were controlled with respect to frequency of occurrence (23), imagery (24), and concreteness (16). Additionally, the emotional content of these verbs was specifically addressed. No differences were noted between verbs of high emotional and low emotional content.

The wh-question cues utilized were: who, what, when, where, why, and how. All stimuli were randomly presented to all subjects studied.

Baseline testing
Each patient included in this investigation exhibited a stable speech/language baseline (plus or minus 5 percentile points) on the PICA overall measure for 3 consecutive tests. These evaluations were administered in 1-month increments.

To establish an initial CVT treatment level commensurate with each patient’s abilities, treatment task baselines were administered. As seen in Table 2, on the first day of treatment, a patient was administered overall Level I. If the patient was unable to score at the 60th percentile or greater on this initial session, he/she proceeded through all sub-levels of the first level of this program. The same approach was utilized for Level II after completion of Level I.

Treatment protocol
In this approach, verbs are presented as pivots and wh-questions provided strategic cues to elicit sentences in an actor-action then actor-action-object framework (for complete Verbing Manual see Appendix 1). There are six hierarchical levels to this treatment with 30 verb stimuli at each level. All verb stimuli and wh-cues were randomly presented to each patient.

Each CVT treatment level and the sequence of stimuli presentation are provided below:

**Level IA:** As depicted in Figure 2, this treatment level requires the patient to repeat and copy a subject-plus-verb combination. All stimuli are provided by the clinician.

**Level IB:** Figure 3 illustrates the next treatment level. At this level, the patient is provided with the verb, the wh-cue, and a choice of subjects. Based on the wh-cues, the patient chooses the correct subject.

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LEVEL IA:
REPEAT S–V COMBINATION BOTH VRB. AND GPH.

Figure 2.
Level IA: Patient is to repeat and copy a subject-plus-verb combination (stimuli provided by clinician).

and completes the subject-plus-verb combination.

Level I: At this treatment level (Figure 4), the patient self-generates a subject-plus-verb combination. Only the verb and the wh-cue are provided.

Level IIA: As seen in Figure 5, this treatment level is similar to the treatment in Level IA, with the exception that a recipient to the action is required.

Level IIB: Figure 6 depicts the sequence of stimuli for the next treatment level. Like treatment Level IB, this level requires the patient, guided by a wh-cue, to choose a subject from an array. At this level, however, the patient must also choose a recipient of the verb.

Level II: This treatment level (Figure 7) is designed to elicit a self-generated subject-plus-verb-plus-object combination. As seen in this figure, the patient is provided with the verb, a subject cue, and an object cue.

Procedures

The following procedures were utilized for each subject. Once PICA baseline was accomplished, each patient was given CVT Level I to establish whether or not all three initial CVT treatment levels were indicated. If the patient scored 60 percent or greater on this initial session, he/she remained at this CVT Level I. If 60 percent was not reached on this initial session, the patient proceeded through the program in the following manner: IA, IB, I. The same sequence was utilized for Level II.

After all baselining procedures were accomplished, the patients were scheduled for treatment 3 to 5 times weekly. All verb, subject, recipient, and wh-cue stimuli were randomly presented to each patient at each CVT level. Following the completion of any CVT treatment level, the PICA was again administered to each patient. Patients were also tested 1 month following completion of treatment.

RESULTS

To establish whether or not treatment effects were observed, all performances on the standardized tests (PICA) were compared and contrasted, using an
LEVEL I: 
*GENERATE S, STATE S-V COMBINATION BOTH VRB. AND GPH.*

Figure 4. 
Level I: Patient self-generates a subject-plus-verb combination (only verb and wh-cue provided).

**Figure 4.**

The analysis of variance with repeated measures procedure (10). Data for each subject was analyzed individually over time and individual analyses were computed for the PICA overall, gestural, verbal, graphic, and isolated subtest scores. The locus of these differences was determined by computing the significant gap (26) for each mean comparison. The results for both subjects are summarized in Table 3.

Results for Subject No. 1 reveal statistically significant ($p<.05$) differences for the overall PICA scores over time, as well as for graphic, verbal, and sub-test I and sub-test C performance. **Figure 8** illustrates this patient’s overall speech/language functioning as measured by the PICA from the initial baselines through treatment levels I and II and for the maintenance measure. As seen in this Figure, Subject No. 1 received only the two overall CVT treatment levels, as initial treatment baselines for both Level I and II revealed greater than 60 percent performance. As seen in **Figure 8**, Subject No. 1’s verbal performance was statistically ($p<.05$) different from baseline to completion of overall Level I. A similar pattern of performance was observed for graphic scores as seen in **Figure 10**.

Subject No. 2 demonstrated a statistically significant ($p<.05$) performance on the overall, graphic, verbal, and sub-test I, C, D, and VI measures. Initial treatment baselines indicated task performance below the 60th percentile. Therefore, Subject No. 2 received treatment levels IA, IB, and I. Subsequent baselining for treatment Level II revealed performance greater than 60 percent, resulting in the patient receiving Level II without sub-levels IIA and IIB.

**LEVEL II A: REPEAT S-V-O COMBINATION BOTH VRB. AND GPH.**

**Figure 5.**

Level IIA: Patient is to repeat and copy a subject-plus-verb combination (recipient to the action required).
Table 3.
Results of analysis of variance procedures.

<table>
<thead>
<tr>
<th>Subject # 1</th>
<th>Subject # 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>P &lt; .05</td>
</tr>
<tr>
<td>Graphic</td>
<td>P &lt; .01</td>
</tr>
<tr>
<td>Verbal</td>
<td>P &lt; .05</td>
</tr>
<tr>
<td>Subtest # I</td>
<td>P &lt; .01</td>
</tr>
<tr>
<td>Subtest # C</td>
<td>P &lt; .05</td>
</tr>
<tr>
<td>Subtest # D</td>
<td>P &lt; .05</td>
</tr>
<tr>
<td>Subtest # VI</td>
<td>P &lt; .05</td>
</tr>
</tbody>
</table>

Figure 11 illustrates Subject No. 2’s overall speech/language performance. Like Subject No. 1, Subject No. 2 demonstrated stable baseline performance with overall speech/language treatment effects noted through the treatment phase of this study. Maintenance of overall speech/language functioning was observed. Figure 12 and Figure 13 show this patient’s verbal and graphic performance respectively, as measured by the PICA. Treatment effects again can be seen, as well as maintenance of performance, following treatment from a stable baseline for each output modality.

In addition to the overall speech/language and verbal and graphic modality measures, each patient demonstrated statistically significant (p < .05) different performance on sub-tests I and C. Performance on sub-test I, which is designed to assess spontaneous speech in response to describing the function of common objects, for both subjects were similar to their performance on the verbal modality measures. Performance on sub-test C, which requires the patient to write names of common objects to dictation, was quite different for each subject. Subject No. 1 improved his abilities on this task and maintained those gains following treatment. Subject No. 2, on the other hand, reverted to the original sub-test C level following treatment. Additionally, Subject No. 2’s performance on sub-test D (writing names of common objects after being spelled by the examiner) and VI (pointing to objects named) was similar to those previously described, in that treatment results were observed, as well as maintenance of those behaviors following treatment.

CONCLUSIONS

Darley (5) suggests that instead of asking the question, “Does treatment work?”, clinicians would do well to ask the questions: 1) For whom does it work? 2) What does the treatment consist of? 3) When should treatment begin and end? and, 4) How

LEVEL IIB: AFTER CHOOSING A CORRECT S. & O.,
STATE S-V-O COMBINATION BOTH VRB. AND GPH.

Figure 6.
Level IIB: Guided by wh-cues, patient chooses a subject from an array and a recipient of the verb.
frequently should treatment be provided? While the present investigation demonstrates that CVT, as applied to our subjects, was worthwhile in terms of statistically significant improvement in speech/language functioning, the research also attempts to answer the basic Darley questions. Responses to those questions should provide clinicians with the information needed to apply treatment techniques in an optimal fashion. It is hoped that this would result in more timely, efficacious treatment directed at the target population for whom the technique was designed.

CVT was designed for marked/moderate, moderate, and mild fluent aphasic adults. These severity levels were targeted because the technique itself requires abilities that allow the patient to follow basic instructions and to possess output skills that are variably accurate and appropriate. This technique builds on the input skills of auditory and visual processing and enhances verbal and graphic output abilities. It also appears that fluent aphasic adults may fare much better with CVT than do the nonfluent aphasic adults. The findings reported here, as well as data from patients presently receiving this treatment, suggest that the difficulties fluent aphasic patients experience are directly related to the very direction of this treatment technique. For example, Shewan (21) pointed out that aphasic patients make more errors on verb phrases than noun phrases. Our treatment protocol attacks a verb phrase and its structural sequence. It is also our belief that a linguistic technique such as this may not be robust enough, by itself, to combat the motor-programming deficits present in most nonfluent aphasic persons.

The second Darley question, "What does the treatment consist of?", can be summarized as follows. CVT emphasizes the verb or action versus the traditional noun-centered approaches used in aphasia rehabilitation. The cueing strategies implemented from the verb or pivot allow the patient to build on his/her language skills rather than being cornered with one-word noun phrases. It appears that, by using this approach, one can enhance the potential for resultant functional communication by aphasic adults. It is our belief, and one that was confirmed by family-member reports, that functional communicative abilities are aided because use of the verb in this pivot role results in the direct, systematic application of strategies (wh-questions) by the aphasic patient. In addition, by specifying function, the patient is able to narrow the semantic

![Diagram](image)

**LEVEL II: GENERATE S. & O., STATE S-V-O COMBINATION BOTH VRB. AND GPH.**

Figure 7.
Level II: Provided with the verb, subject cue, and object cue, patient self-generates the subject-plus-verb-plus-object combination.
field referring to the ideas he/she wishes to communicate. Consequently, there is an increase in the chance of eliciting utterances appropriate to the communicative situation. McNeil and Kozminsly (13) have urged clinicians working with aphasic adults to direct their rehabilitation efforts toward establishing a number of strategies the patient can utilize to maximize his/her language use. The present study attempts just that. Based on sound theoretical and clinical models, CVT is constructed on the structure of language while reinforcing and teaching self-cueing strategies.

Establishing a beginning and ending point for any effective treatment program requires the clinician to define the behaviors to be elicited in a consistent manner. CVT uses a six-tier hierarchy of task continuum from repetition of two-word utterances to self-generation of subject-verb-object combinations. By utilizing the initial probe technique previously described, a clinician can zero in on the target performance. This should allow the clinician and patient to begin at a level of complexity appropriate for that individual patient. Sixty percent performance criteria was used to establish a treatment initiation point. As Brookshire (3) suggests, clinicians should attempt to provide aphasic patients with treatment tasks at a level where performance begins to break down and correct responses outnumber incorrect responses. This investigation attempted

Figure 8.
Subject No. 1: Overall speech/language functioning.

Figure 9.
Subject No. 1: Verbal performance.

Figure 10.
Subject No. 1: Graphic scores.
to direct treatment activities at levels that were initially taxing, yet not impossible or frustrating for the patients to endure. On the other end of the continuum, treatment was terminated when the patient performed with 90 percent accuracy for three consecutive trials. This traditional approach, used by most clinicians dealing with treatment of aphasic adults, has been observed to demonstrate competency of the behaviors desired. Based on the data presented for both the treatment and maintenance phases of this study, termination-of-treatment criteria seemed appropriate, because each patient was able to maintain performance after reaching criterion performance during treatment.

Finally, Darley asked the question regarding frequency of treatment. In this investigation, we attempted to study the treatment approach in a practical, traditional environment. We scheduled patients at least three times weekly, which was felt to be representative of what most clinicians do in rehabilitative settings. This, too, appeared effective, because both patients met overall treatment goals on that treatment schedule. We are presently exploring the effects of scheduling fewer than, and more than, three sessions weekly.

In summary, this investigation has demonstrated that CVT is an effective rehabilitation program for
aphasic adults. Specifically, the authors believe that fluent aphasic patients in the marked-to-moderate, moderate, and mild severity levels of aphasia might do well with the use of the verb-as-pivot and wh-question cueing strategies as applied in this investigation.

Continuation of this study with increased numbers of aphasic persons is presently underway in our clinics. The authors are also looking at specific treatment media such as the microcomputer, and their capabilities of discharging CVT to aphasic adults.

REFERENCES

APPENDIX I
Verbing Manual

I. Materials:
A. 30 verbs (4 x 6 cards)
B. 6 wh-question cards (4 x 6) / who, what, where, when, why, how
C. Subject and object cards (4 x 6)
D. Subject and object choice cards (4 x 6)

II. Scoring: Scoring both verbal and graphic output
x/o, x-verbal, o-graphic.
A. Criterion for each level (PICA 13, 14, or 15)
1. 15 = complete response
2. 14 = distorted but intelligible (graph or verbal)
3. 13 = complete with delay including self-correction.
B. Below Criterion (PICA 12 or under)
1. 12 = syntactical error
2. 14 = syntactical error with delay
3. 9 = repeat input if:
   a. Patients asks for a repeat.
   b. There is no response for 30 seconds.
   c. Patient does not do task.
4. 8 = wh words such as who and what are repeated with the verb after a repeat has occurred.
5. 7 = spelling errors or related semantic errors.
6. 6 = unrelated semantic errors, e.g., patient given who cue for subject and responds with an inanimate or nonhuman noun. An occupation human noun is acceptable for a what cue.
C. Overall Criterion for each level
1. Three consecutive trials with 90 percent accuracy.
D. Patient is given scores for initial output. Since this is a treatment technique, treatment is initiated only after a response has been made and has been scored.

III. Treatment Frequency:
A. Minimally 3 times weekly and maximally 5 times weekly

IV. Verbing Level Selection:
A. If the patient scores below 60 percent on initial trial, proceed to level “A” and advance through total sequence, e.g., Level A, Level B, Level I.
1. Do not begin treatment at a “B” level.
B. If the patient scores above 60 percent on initial trial, proceed to the overall level, e.g., Levels I or II.

V. Individualized verbing level procedures: (See Figures 2 through 7)
A. Level # IA
1. Task: The patient will repeat a syntactically correct sentence consisting of a subject-plus-verb after the clinician presents the verb, the cue and subject both graphically and verbally.
   a. Input: The patient is presented with:
      1. The verb (graphic and verbal)
      2. The wh-cue (graphic and verbal)
      3. An appropriate subject (graphic and verbal)
      4. The complete grammatical sentence (graphical and verbal)
   b. Output: The patient is required to:
      1. Repeat the verb
      2. Repeat the subject cue
      3. Repeat the subject
      4. Repeat the subject + verb combination and is given a verbal score
      5. Copy S + V combination from the cards and is given a graphic score
B. Level # IB
1. Task: The patient will generate a subject-plus-verb sentence, given the verb both graphically and verbally and choose the correct subject.
   a. Input: The patient is presented with:
      1. The verb (graphic and verbal)
      2. The wh cue (graphic and verbal)
      3. An appropriate subject (graphic and verbal)
      4. The complete grammatical sentence (graphical and verbal)
   b. Output: The patient is required to:
      1. Repeat the verb
      2. Repeat the subject cue
      3. Repeat the subject
      4. Repeat the subject + verb combination and is given a verbal score
      5. Copy S + V combination from the cards and is given a graphic score
b. Output: The patient is required to:
1. Repeat the verb
2. Repeat the wh cue
3. Choose a correct subject
4. Generate the S + verb combination verbally and is then given a verbal score
5. Copy the S + V combination from the cards and is given a graphic score

C. Level # I
1. Task: The patient will compose a S + V combination using the verb both graphically and verbally. The patient is cued with who or what cues.

   a. Input: The patient is presented with:
      1. The verb (graphic and verbal)
      2. The wh cue (graphic and verbal)

   b. Output: The patient is required to:
1. Respond verbally with an appropriate subject after the wh-cue is given
2. Generate verbally the S+V combination and then is given a verbal score
3. Generate a graphic response which should reflect exactly the verbal utterance and is then given a graphic score
3a. The written cues are removed as the patient writes the subject of the sentence.

D. Level # IIA
1. Task: The patient will repeat a syntactically correct sentence consisting of a S + V + O after the clinician presents the verb, the subject cue, the subject, the object cue and the object both graphically and verbally.

   a. Input: The patient is presented with:
      1. The verb (graphic and verbal)
      2. The subject cue (graphic and verbal)
      3. Subject choice card (graphic only)
      4. Object cue (graphic and verbal)
      5. Object choice card (graphic only)

   b. Output: The patient is required to:
1. Repeat the verb
2. Repeat the subject cue
3. Choose a correct subject
4. Repeat the object cue
5. Choose correct object
6. Generate the S + V + O combination verbally and is given a verbal score
7. Copy the S + V + O combination from the cards and is then given a graphic score

E. Level # IIB
1. Task: The patient will generate a S + V + O sentence after the clinician presents the verb, the subject cue and the object cue both graphically and verbally and choose the correct subject and object.

   a. Input: The patient is presented with:
      1. The verb (graphic and verbal)
      2. The subject cue (graphic and verbal)
      3. Subject choice card (graphic only)
      4. Object cue (graphic and verbal)
      5. Object choice card (graphic only)

   b. Output: The patient is required to:
1. Repeat the verb
2. Repeat the subject cue
3. Choose a correct subject
4. Repeat the object cue
5. Choose correct object
6. Generate the S + V + O combination verbally and is given a verbal score
7. Copy the S + V + O combination from the cards and is then given a graphic score

F. Level # II
1. Task: The patient will compose a S + V + O combination both verbally and graphically. The patient is cued with wh-questions.

   a. Input: The patient is presented with:
      1. The verb (graphic and verbal)
F. Level # II (continued)

2. The subject cue (graphic and verbal)
3. The object cue (graphic and verbal)

b. Output: The patient is required to:
1. Respond verbally with an appropriate subject after the subject cue has been given
2. Respond verbally with an appropriate object after the object cue has been given
3. Generate verbally the full grammatical utterance and is then given a verbal score
4. Generate a graphic response which should reflect exactly the verbal utterance and is then given a graphic score
4a. The written cues are removed as the patient begins writing the subject of the sentence as in Level # I.