

Guidelines for Administering and Scoring the Brief Test of Adult Cognition by Telephone (BTACT)

Patricia A. Tun & Margie E. Lachman
Brandeis University
February 9, 2006

Administration

- 1) General instructions for interviewers
 - please do not repeat any items in the exercises themselves (i.e. words from the word lists, digits, etc.)
 - if the subject does not understand the instructions the first time, and does not complete the practice successfully, repeat the instructions until he/she understands
 - please do not give specific feedback as to which items they got correct or incorrect
 - if the subject asks for repetition or feedback in the middle of a series, say “I am sorry, I can’t repeat items (or can’t say anymore) right now.” Then at the end politely explain that the way the test is set up you are not able to give feedback.

- 2) General encouragement
 - if the person expresses concern about performance during the test, interviewer can say:
 - “Just do the best you can.”
 - “Remember, we do not expect anyone to get all of these questions correct.”
 - “Don’t worry. We have deliberately made these questions challenging. If people could get them all right, we would not learn anything. We’re trying to find which questions are harder than others.”
 - In between tests, interviewer could say “Now let’s try something different” to indicate a change of pace

- 3) Recording responses
 - Individual copies of the BTACT can be used by the interviewer for scoring while testing.
 - In addition, it is useful to record a sound file (or audio tape) of the interview in case one wishes to check responses for a subtest.
 - A computer sound file of the Red- Green task-switching test is necessary for scoring latencies.

Handling responses and errors for subtests

The following sections spell out some details as to exactly what constitutes an error on the different subtests, based on our experience with the kind of situations that may arise. In each case we define the overall goal of the test, then describe some possible mistakes participants may make.

On all tests except the Red-Green task-switch, the primary interest is in accuracy - whether the participant can get the correct response. Therefore if he/she makes a mistake but immediately recognize the mistake and corrects it, we give them credit for being able to do the problem.

- A) Word list: the goal is to recall words from the studied list.
- the interviewer checks off words recalled from the list on the script; repetitions can be checked twice, and intrusions written in
 - credit is given if a noun is made plural (FARMERS instead of FARMER)
 - An intrusion error is a word that was clearly not on the list (e.g. COWBOY instead of FARMER)
 - Partial words are not correct (e.g. FARM instead of FARMER)
 - A repetition is defined as a failure of self-monitoring. So if someone says DRUM, CURTAIN, BELL, DRUM, they are failing to remember they already said DRUM.
 - Sometimes people use a thinking-out-loud strategy that is not a failure of self-monitoring: they might say “DRUM, CURTAIN, BELL...hmmm... DRUM, CURTAIN, BELL, HOUSE”... where they are running through the list again in their minds but are aware that they already said those words. Or they might say “DRUM, I already said DRUM”, so we know that they know they are repeating. These situations do not count as repetitions.
 - Sometimes we will need to depend on tone of voice: e.g. if someone says “DRUM, CURTAIN, BELL.... Did I say DRUM?” or sounds questioning. The key issue is whether they are aware that they have said the word already.
 - In cases where the interviewer is unsure, it is best to note the case and listen to the sound file after the interview.
- B) Backward digit span: the goal is to repeat the numbers in the correct sequence.
- the interviewer checks off correct trials and notes incorrect trials with a 0
 - when participant gets one trial correct at a level, move on to the next level. If the first trial is incorrect, give a second trial. Discontinue when no correct response is given at a level.
 - please say all digits up to the last one in list intonation, then drop voice on the last one to indicate it is the end and S should respond
 - if participant immediately self-corrects, do not count it as an error (“9, 6,..no, 9,2, 6”)
- C) Category fluency: the goal is for the participant to produce as many unique words as possible. The same criteria apply as for word list recall.
- the interviewer records all responses that are produced on separate lines on the response sheet. If desired, a temporal breakdown can be obtained by dividing the sheet into four sections and noting first responses produced in the first 15 seconds, then moving to the second section to record responses in the second 15 seconds; repeat for third and fourth sections.
 - it may be necessary to check the sound file after the interview to determine repetitions

- we accept birds, fish, insects, etc. as animal names. Do not inform participants of this ahead of time, but if they specifically ask you if these are acceptable while they are naming items, say “yes, go ahead”.
- If a participant says a category such as “bird”, then names a specific, “robin”, credit is given for each of these responses
- we do not accept mythical animals such as dragons and unicorns

D) Number series: the goal is to see if participants can detect the pattern in order to produce the correct number to complete the series

- the interviewer records the response given for each problem
- if participant immediately self-corrects and gets the right answer, give credit (e.g. “47... no, 48)
- to give a small breather after each trial, interviewer can say “Okay. Are you ready for another? The next set is...” after each trial.

E) Backward counting: the goal is to see how far participants can get in counting back from 100 without omitting any numbers from the proper sequence.

- the interviewer records the last number reached, and also keeps track of the number of errors
- if a number is omitted entirely, it is an error (99, 98, 96...). Each number omitted counts as one error. So (99,98,95,94...) would be 2 numbers missed, 2 errors.
- Occasionally a participant will skip an entire decade of numbers: e.g. go from 91 to 80. This counts as 10 errors.
- Repeating the same number (“99, 98, 97, 97, 96”) is also scored as an error; We are currently exploring the implications of another scoring option for repeats, i.e., to count them as correct. Note that repeats are already self-penalizing as repetitions reduce the number reached. We plan to compute two scores: one for number of errors and one for the actual number reached.

F) Red/Green task-switching

- the interviewer records the first word the subject utters after each stimulus, by checking off accuracy on the test sheet.
- we are interested in the speed of the first response the participant produces
- allow a pause of one second between responses and the next stimulus, and between cues and stimuli (e.g. "Normal" ..."Green")
- trials are scored as invalid if the subject produces extraneous noises such as coughs, comments, or there are other external distractions that would invalidate the latency
- if they give an incorrect response and then self-correct (“stop... no, go”) we take the first thing they say as the response

- if they do not say the whole word, (e.g. “s-s-s....go) we count the first full word (go) as the response

Scoring

Word List Recall – Immediate & Delayed

Total number unique is total number of correct responses (range 0-15)

Total repetitions is total number of repetitions

Total intrusions is total number of intrusions

Backward Digit Span

Score is highest number of digits reached (range 0, 2-8)

Category Fluency

Total number unique is total number of correct responses

Total repetitions is total number of repetitions

Total intrusions is total number of intrusions

(Can also be divided into quartiles by time to show temporal pattern)

Red/Green Accuracy

Normal baseline score is total number correct in normal baseline condition (range 0-20)

Reverse baseline score is total number correct in reverse baseline condition (range 0-20)

Experimental score is total number correct in experimental condition (range 0-32)

- Switch trials score is total number of trials correct after switch in experimental condition (range 0-6) (Trials 4, 9, 15, 19, 24, 29 in experimental block)
- Noswitch trials score is total number of other experimental trials correct (range 0-23) (Trials 5-8, 10-14, 16-18, 20-23, 25-28, 30-32 in experimental block)
- Note that first 3 trials are a warm-up and are not included in switch or noswitch scores

Number Series

Total number of items correct (range 0-5)

Backward Counting

Last number reached

Total number of errors

Total number of digits produced is calculated as:

$$100 - (\text{number reached} + \text{number errors})$$