

# **ECOLOGICAL VALIDITY**

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# The Ultimate Aptitude Test

Standardized tests getting you down? This one'll raise your spirits.

**1**

Which figure does not belong?

**2**

is to as

is to a. b. c.

Analogy: Circle the correct choice.

**3**

Which of these is least likely to be named Skippy?

**4**

1 = 4 = 7 =

Math: What is the square root of

+ = 7

**5**

What is the main theme?

a. fear of shoes b. love is all c. fish are smart  
d. cosine of 30 degrees

**6**

Other side of the road

Chicken

Essay question

**Directions**

1. Take your chronological age. Add your chronological height and weight.
2. Divide your raw score by 11.
3. Bake at 325 degrees. Salt and pepper to taste.

**Scoring**

70-90: You don't know squat.  
91-100: You don't know diddly.  
101-110: You don't know diddly about squat.  
111+: Objects in mirror may be closer than they appear.

Dan Greenberg is a cartoonist and the author of several Scholastic Professional Books including *Comic-Strip Grammar* (Scholastic, 2000).

## Referral Questions

1. How much behavioral change has resulted from the structural abnormality?
2. What treatments are needed to maximize recovery?
3. What is the time frame for recovery?
4. What will be the residual behavioral deficits?
5. Will this person be able to return to previous employment? When?
6. What are the practical, real-life problems this individual will face?

The **goal of the assessment** becomes the prediction of behavior in the open environment. **Ecological validity** refers to the **inferences** we are able to make about behaviors in situations beyond those involved in the actual assessment procedure.

Sbordone, R.J. (1996)

## **Fallacious Assumptions**

1. It is not necessary to take a detailed clinical history, since such information may bias test interpretation.
2. It is not necessary to review collateral sources, since such information may bias test interpretation.
3. Test data can accurately be interpreted in the absence of information from other sources (e.g. historical information, medical records). It is not essential for the neuropsychologist to review the patient's medical chart if the neuropsychologist is trying to determine whether the patient has sustained a brain injury, since this can be determined by careful review of the test data.

## **Fallacious Assumptions (continued)**

4. It is not necessary to review the patient's educational, vocational, or medical records if the neuropsychological test data shows strong indication of brain damage.
5. Rather than wasting valuable time taking a history from the patient, the neuropsychologist can simply rely on the patient's medical records to arrive at an understanding of the types of injuries the patient has sustained.
6. It is not essential that the neuropsychologist actually test or interview a particular patient if the neuropsychologist has access to the patient's raw data.

## History & Subject Factors

- Education
- Language
- Culture
- Immigration
- Prior history:    Medical  
                      Psychosocial  
                      Employment
- Prior ability level and how evaluated
- Purpose of testing and potential for secondary gain
- Prior testing experience
- Prior experience that interfaces with examiner's

## **Fallacious Assumptions (continued)**

7. Collecting reliable test data is the primary goal of the neuropsychologist and/or psychological assistant.
8. Careful interpretation of test data using appropriate norms is essential in arriving at accurate opinions about the patient's cognitive impairments and/or localization of brain dysfunction.
9. It is essential that standardized tests and/or batteries are utilized to arrive at meaningful conclusions about the presence or absence of cognitive dysfunction and/or brain damage.
10. The results of neuropsychological testing should be consistent with the patient's complaints.
11. It is essential that standardized tests and/or batteries are utilized to arrive at meaningful conclusions about the presence or absence of cognitive dysfunction and/or brain damage.
12. Defective performances on neuropsychological tests are indicative of cognitive dysfunction and/or brain damage.



## Fallacious Assumptions (continued)

13. Defective performances on certain neuropsychological tests are indicative of dysfunction or damage to specific areas of the brain.
14. Intact performance on a standardized neuropsychological test battery (e.g. WAIS-R, *WAIS-III*, HRNB, LNNB), rules out the likelihood that the patient has cognitive deficits or sustained a brain insult.
15. Neuropsychological tests are sensitive to brain damage and can reliably be used to identify such a damage is present.
16. 16. Intact performance on a variety of neuropsychological tests (e.g. Category, Wisconsin Card Sorting, and Trail Making), known to be sensitive to frontal lobe damage rules out frontal lobe pathology.
17. Changes in cognitive functioning are best determined by careful examination of the serial neuropsychological test data.

## **Prediction Accuracy Requires:**

- 1) Understanding the cognitive skills required for task
- 2) Using enough tests to measure the skills
- 3) Studying the relationship between the test scores and the cognitive skills to be measured.

## **Skills Involved in Attention / Concentration**

1. Alertness, which is defined as the general state of readiness of the individual to respond to the environment.
2. Stimulus selectivity, which is defined as the patient's ability to select specific stimuli from the environment.
3. The ability to maintain a particular attentional set.
4. Freedom from distraction: The ability to inhibit inappropriate shifting or loss of mental set.
5. Vigilance: The ability to detect small changes in stimulus input.
6. Flexibility: The ability to initiate the shifting or discarding of mental sets.

## **Skills Involved in Attention / Concentration**

7. Capacity: The amount of information which can be effectively processed by a particular individual at any one time.
8. Speed of processing: The speed at which attentional tasks can be processed.
9. Resistance to fatigue: The ability to prevent set deterioration.
10. Resistance to emotional factors: The ability to maintain a particular attentional set in the presence of emotional factors.
11. Resistance to interference from stimulus overload: The ability to preserve a particular attentional set under conditions of stimulus overload.
12. Resistance to contiguous stimuli: The ability to maintain a particular attentional set when presented with contiguous stimuli.

## **Two Aspects of Ecological Validity**

1. Verisimilitude - The similarity of the data collection method to tasks and skills required in the free and open environment. Does a test that is said to measure memory contain tasks that resemble everyday tasks that require memory processes.
2. Veridicality - The extent to which test results can predict phenomenon in the open environment. Involves predictive validity (correlation) of test instruments and behaviors in the free environment.

## **Fallacious Assumptions (continued)**

18. Patients who sustain traumatic brain damage will make most of their recovery during the first six months and continue to recover for up to two years post injury.
19. It is essential to test brain damaged patients in relatively quiet settings that are free from distraction or extraneous stimuli.
20. The neuropsychologist's primary responsibility is to record the patient's specific responses to specific test stimuli during testing.
21. It is not essential to record the amount and type of practice, cues, prompts or strategies given to or utilized by the patient during testing, since the raw test data is sufficient to determine the patient's cognitive impairments.

## **Fallacious Assumptions (continued)**

22. It is unwise to continue testing a brain injured patient if they become fatigued, since the test data will become unreliable.
23. Neuropsychological test reports need only contain a brief description of the reason for referral, identifying information about the patient, the names of the tests administered, the raw test data, and an interpretation of the test data.
24. Interpretations, based upon test data alone, can predict the patient's ability to function in the workplace, school, at home, or in real-world settings.
25. It is not essential to observe the patient function outside of the testing (laboratory) environment, since careful interpretation of the test data will provide us with a sufficient basis to predict how the patient is likely to respond in real-world settings (e.g. work, community, school).

# DIFFERENTIAL TASK DEMANDS

## Clinical (Testing) Setting:

Structured by examiner

Assisted in task focus by examiner

Nonpunitive setting

Planning aided by examiner

Motivation aided by examiner

Persistence encouraged

Failure not emphasized

Protected environment

Inadequacies not exposed

Competition absent

## Everyday Life:

Unstructured

Little task focus provided

Negative feedback on errors

Planning by individual

Self-motivation necessary

Persistence up to individual

Fear of failure

Minimally protective milieu

Inadequacies visible to others

Competition present



# **SOME EVERYDAY SKILLS REQUIRED OF BARTENDERS**

## **Generic**

Clean, dress and care for self

Drive a car or engage public transportation

Basic communication skills

Basic arithmetic

## **Specific**

Drink mixing

Conversational skills

Maintaining an inventory

Discriminating sobriety from  
drunkenness

# CONSTRUCT-SPECIFIC EVERYDAY SKILLS

Everyday Environment	Language	Memory	Spatial Processing	Motor & Sensory Coordination
<b>Living</b>	Conversation. Following instructions. General reading & writing.	Remembering the daily schedule of activities	Finding a new place while driving in the car. Drawing a map for someone else.	Driving the car. Using tools to fix something.
<b>Working</b>	Reading or hearing instructions. Giving instructions. Making notes or reports of work activities. Comprehension of instructions for using a computer.	Remembering instructions. Remembering names and faces of customers and clients. Remembering the daily work schedule of activities.	Finding the location of objects in a warehouse. or the location of files for recordkeeping. Finding new locations to make deliveries.	Operating machinery. Driving a forklift or tractor, Using tools to construct products.
<b>Learning</b>	Reading textbooks, writing school papers and reports. Comprehending lectures or complex presentations. Note-taking skills	Remembering reading material, memorizing facts	Drawing diagrams or schematics for courses which require them. Visualizing the placement or arrangement of objects in schematics (i.e. plumbing diagrams)	Simple writing skills operating machinery and tool use for technical courses

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