



Psychological Tests that Examine Brain Functioning

Psychology 372

Physiological Psychology

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Background

- Often involves giving a battery of tests.
- Tests are often based on what you are trying to examine
 - Motor function
 - Memory
 - Sensory-Perceptual Ability
 - Abstract Reasoning
 - Others

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Two Approaches

- Patient Centered
 - Is more flexible
 - Types of tests are based on presenting symptoms and referral issues.
- Fixed Battery of Tests
 - Involves giving specific tests to everyone
 - Adding others if necessary

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Types of Tests

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Halstead-Reitan Neuropsychological Test Battery

- Contains 10 subtests that examine a variety of brain functions
 - Abstract reasoning
 - Kinesthetic and Sensimotor Ability
 - Attention
 - Auditory Perception
 - Sensory-Perceptual ability
 - Others

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Some Tasks

- Have person close their eyes with their hands held out. Have them say which hand is touched when touched.
- Which ear receives a barely audible finger snap.
- Identify a number or shapes traced on a finger or hand.
- Key tapping
- Measuring grip strength by squeezing a dynamometer
- Others

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Issue

- Normal person can perform the tasks well.
- Persons with neurological damage have difficulty with certain tasks.
- Based on anatomy and physiology, you can deduce where the brain damage has occurred.

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Additional Tests added to the H-R

- Memory Tests such as the WAIS-III
- MMPI
- Others

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Luria-Nebraska Neuropsychological Test Battery

- Is a second common test battery
- Consists of 269 discrete items
- Has high reliability
- Also has some problems
 - High rates of false positives in older patients.

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Some Scales

- Motor
- Rhythm
- Receptive Speech
- Reading
- Writing
- Memory
- Others

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Conclusions

- Some people really like it
- Others find problems
- Results mixed

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Aphasia Screening Tests

- Many types
 - Multilingual Aphasia Examination
 - Western Aphasia Battery
 - Boston Diagnostic Aphasia Examination
 - Token Test
 - Others

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Examine

- Spontaneous speech
- Sentence or phrase repetition
- Reading
- Writing and copying
- others

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Bender Gestalt Test

- Used to examine complex motor tasks
- Has nine figures
- Patient is asked to copy one at a time on a blank sheet of paper.
- Accuracy is the key

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Porteus Maze Test

- Is very good at assessing executive functioning
 - Reasoning
 - Planning
 - Flexibility of thinking
- Person has to trace a line through different mazes without lifting a pencil and avoiding dead ends.
- Is very sensitive to brain damage in the frontal lobes

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Conclusion

- There are many types of tests that examine brain functioning
- Some tests are very sensitive and can be highly accurate in assessing damage.
- Can be used to help target brain damage before other techniques are used.
- Are not cheap to administer.

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ARE TO BE GIVEN AND INTERPRETED BY TRAINED PROFESSIONALS.

- Training to give these tests is time intensive
- Interpretation requires very specific knowledge and skills
- Tests take lots of practice to be given and interpreted correctly
- CT Scans and are interpreted by Radiologists MRIs
- Neuropsychological test batteries are interpreted by trained psychologists (usually neuropsychologists)

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