# Sri Lakshmi Narayana Institute of Medical Sciences

Date:02.06.2017

From
DR.V.R Sridhar
Professor and Head,
Department of Psychiatry,
Sri Lakshmi Narayana institute of medical sciences,
Bharath Institute of Higher Education and Research,
Chennai.

To
The Dean,
Sri Lakshmi narayana institute of medical sciences,
Bharath Institute of Higher Education and Research,
Chennai.

**Sub: Permission to conduct value-added course: Various Psychological tests and its application in psychiatry**

Dear Sir,

With reference to the subject mentioned above, the department proposes to conduct a value-added course titled: **Various Psychological tests and its application in psychiatry** on 3/07/2017. We solicit your kind permission for the same. Kind Regards

Dr.V.R. Sridhar

---

**FOR THE USE OF DEANS OFFICE**

Names of Committee members for evaluating the course:

The Dean: **Dr. Jayalakshmi**

The HOD: **Dr. Sridhar**

The Expert: **Dr. Arun Seetharaman.**The committee has discussed about the course and is approved.

| Dean | Subject Expert | HOD |
|---|---|---|
| (Sign & Seal) | (Sign & Seal) | (Sign & Seal) |
| Dr. G. JAYALAKSHMI, BSC., MBBS., DTCD., M.D., DEAN Sri Lakshmi Narayana Institute of Medical Sciences Osudu, Agaram, Kudapakkam Post, Villianur Commune, Puducherry - 605502. | Dr. ARUN SEETHARAMAN, MD., Reg. No. 91440 Associate Professor, Psychiatry Sri Lakshmi Narayana Institute of Medical Sciences Osudu, Kudapakkam, Puducherry-605 502. | Dr. V. R. SRIDHAR, MD.,D.P.M., Reg. No: 30995 Professor & HOD, Psychiatry Sri Lakshmi Narayana Institute of Medical Sciences Osudu, Kudapakkam, Puducherry-605 502. |

OFFICE OF THE DEAN

# Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.
[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]
[ Affiliated to Bharath University, Chennai - TN ]

**Circular**

15.06.2017

**Sub: Organising Value-added Course: Various Psychological tests and its application in psychiatry**

With reference to the above mentioned subject, it is to bring to your notice that Sri Lakshmi Narayana Institute of Medical Sciences, **Bharath Institute of Higher Education and Research** is organizing **"Various Psychological tests and its application in psychiatry for final year students"**. The course content and registration form is enclosed below."

The application must reach the institution along with all the necessary documents as mentioned. The hard copy of the application should be sent to the institution by registered/ speed post only so as to reach on or before 30, June 2017. Applications received after the mentioned date shall not be entertained under any circumstances.

**Dean**

Dr. G. JAYALAKSHMI, BSC., MBBS., DTCD., M.D.,
DEAN
Sri Lakshmi Narayana Institute of Medical Sciences
Osudu, Agaram, Kudapakkam Post,
Villianur Commune, Puducherry - 605502.

Encl: Copy of Course content

# Course Proposal

Course Title: **Various Psychological tests and its application in psychiatry**.

**Course Objective:**

Basics of psychological assessment

Cognitive and neuropsychological assessments

Understanding Measurement

Difference between Physical measurement and Psychological measurement

Defining a Psychological test

Classification of the Psychological test

Characteristics of a Good Psychological Test

Purpose of Psychological test Measurement

**Course Outcome:**

**Course Audience: FINAL YEAR STUDENTS of 2017 Batch**
**Course Coordinator: Dr.V.R. Sridhar**
**Course Faculties with Qualification and Designation:**
**1.Dr.V.R.SRIDHAR, Professor & HOD**
**2.Dr.Arun, Assistant Professor**
**Course Curriculum/Topics with schedule (Min of 30 hours)**

| SlNo | Date | Topic | Resource persons | Time | Hours |
|---|---|---|---|---|---|
| 1. | 03.07.2017 | • Commentary, Projective testing ; Psychological testing in inpatient psychiatry | Dr.Arun | 4-5p.m | 1 |
| 2. | 05.07.2017 | • Measuring coping : examining the internal structure of the COPE | Dr.Arun | 2-3p.m | 1 |
| 3. | 07.07.2017 | • Two different operationalisations of psychological type : comparing the Myers-Briggs Type Indicator and the Keirsey Temperament Sorter | Dr.Arun | 4-6p.m | 2 |
| 4. | 10.07.2017 | • Neuropsychological assessment | Dr.Arun | 4-6p.m | 2 |

| | | | | | |
|---|---|---|---|---|---|
| 5. | 12.07.2017 | • Effects of expertise level and motor skill characteristics on mental rotation | Dr.Arun | 4-6p.m | 2 |
| 6. | 14.07.2017 | • Developing and validating psychometric tests for use in high performance settings | Dr.Arun | 4-5p.m | 2 |
| 7. | 17.07.2017 | • Relationship between accuracy, consistency, and confidence in visual recognition memory over weeks in aging | Dr.Arun | 4-5P.M | 1 |
| 8. | 19.07.2017 | • Behavior assessment in neuro-rehabilitation | Dr.Arun | 4-5p.m | 1 |
| 9. | 21.07.2017 | • Computerized psychodynamic psychotherapy | Dr. Shridhar | 4-6p.m | 1 |
| 10. | 24.07.2017 | • Testing patients with subcortical vascular dementia | Dr.Arun | 4-6p.m | 2 |
| 11. | 26.07.2017 | • Adaptation and validation of the Personality Assessment Questionnaire | Dr.Arun | 4-6p.m | 1 |
| 12. | 28.07.2017 | • Psychometric properties of the Eysenck Personality Questionnaire-brief form | Dr.Arun | 4-6p.m | 2 |
| 13. | 01.08.2017 | • TAT AND RORSCHACH | Dr.Arun | 2-5p.m | 3 |
| | | **Practical Class I** | Dr. Shridhar | | |
| 13. | 03.08.2017 | APPLICATION OF INTELLIGENCE TESTS | Dr. Shridhar | 2-3 PM | 1 |
| 14. | 05.08.2017 | PROJECTIVE PERSONALITY TESTS | Dr. Shridhar | 2-3 PM | 1 |
| 15. | 08.08.2017 | COMPUTERIZED TESTS | Dr. Shridhar | 2-4 PM | 2 |

| | | | | | |
|---|---|---|---|---|---|
| 16. | 11.08.2017 | COGNITIVE BATTERY TESTS | Dr. Shridhar | 2-4 PM | 2 |
| 17. | 13.08.2017 | NEUROPSYCHOLOGICAL TESTS | Dr. Shridhar | 2-4p.m | 2 |
| | | **Total** | | | 30 hrs |

**REFERENCE BOOKS:**

- Comprehensive textbook of psychiatry – Kaplan & Saddock
- Oxford Textbook Of Psychiatry
- Synopsis - Kaplan & Saddock

# VALUE ADDED COURSE

**1. Name of the programme & Code**

Various Psychological tests and its application in psychiatry techniques

**2. Duration & Period**

30 hrs & July– December 2017

**3. Information Brochure and Course Content of Value Added Courses**

*Enclosed as Annexure- I*

**4. List of students enrolled**

*Enclosed as Annexure- II*

**5. Assessment procedures:**

Assessment Evalution by MCQ method - *Enclosed as Annexure- III*

**6. Certificate model**

*Enclosed as Annexure- IV*

**7. No. of times offered during the same year**:

1 time July– December 2017

**8. Year of discontinuation:** 2018

**9. Summary report of each program year-wise**

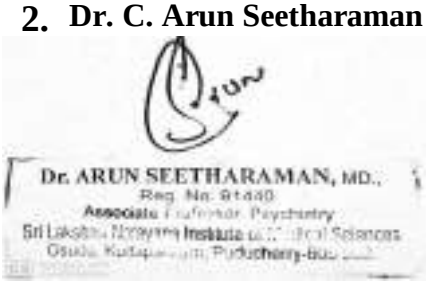
| **Value Added Course-** July– December 2017 & January– June 2018 | | | | | |
|---|---|---|---|---|---|
| **Sl. No** | **Course Code** | **Course Name** | **Resource Persons** | **Target Students** | **Strength & Year** |
| **1** | PSYC05 | Various Psychological tests and its application in psychiatry | Dr. V.R Sridhar<br><br>Dr.Arun Seetharaman | Final Year students | 7 students July– December 2017 |

**10. Course Feed Back**

*Enclosed as Annexure- V*

**Resource Person**

1. **Dr. V.R. Sridhar**
2. **Dr. C. Arun Seetharaman**




**COORDINATOR**

**V.R. Sridhar**

# Psychological tests

# PARTICIPANT HAND BOOK

BIHER SLIMS

**COURSE DETAILS**

| **Particulars** | **Description** |
|---|---|
| Course Title | Psychological assessment |
| Course Code | PSYC05 |
| Objective | 1. Introduction<br>2. Basics of psychological assessment<br>3. Cognitive and neuropsychological assessments<br>4. Understanding Measurement<br>5.Difference between Physical measurement and Psychological measurement<br>6.Defining a Psychological test<br>7.Classification of the Psychological test<br>8.Characteristics of a Good Psychological Test<br>9.Purpose of Psychological test Measurement |
| Further learning opportunities | Assessment |
| Key Competencies | On successful completion of the course the students will have skill in using psychological tests and also apply on patients |
| Target Student | 2$^{ND}$ year MBBS Students |
| Duration | 30hrs Every July 2017 – December 2017 |
| Theory Session | 10hrs |
| Practical Session | 20hrs |
| Assessment Procedure | Multiple choice questions |

- Understanding Measurement
- Difference between Physical measurement and Psychological measurement
- Defining a Psychological test

- Classification of the Psychological test
- Characteristics of a Good Psychological Test
- Purpose of Psychological test Measurement

When the quality and the quantity of anything is measured by using standard equipment or device, it is called Measurement.

In the words of Chaplin (1975)- "Measurement means quantifications of variables." It is an important part of life, which can be divided into two types:

1. Physical Measurement: It is a technique of measuring physical bodies using standard. For example, measurement of a the length of a desk or measurement of the volume of a glass of water, etc.

2. Psychological Measurement: It is a technique of measuring attributes, attitudes, personality characteristics and abilities of living beings. It is of two types

a. Psychological tests.

b. Scales.

Differences between Physical measurement and Psychological measurement – 1. In physical measurement, the measurement starts from true zero but in psychological measurement, zero is just as reference point. It is relative zero, not true zero. For example, psychological attributes such as reaction time can never be zero. –

2. The unit of physical measurement are equal and uniform throughout the measurement but there is a lack of equal and uniform unit in psychological measurement. –

3. Physical measurement is applicable on those things about which we get knowledge by the sense organs but in psychological measurement, we can't get knowledge of it's subject matter such as intelligence and personality characteristics by our sense organs. In other words, physical measurements is direct but psychological measurement is not direct. –

4. Physical measurement are to the point and it's measurement is exact but the psychological measurements are not precise. Defining a Psychological Tests In general life, we often use the term 'Test' which simply means to examine. According to Reber and Reber (2001)- "Test refers to any measurement which yields quantitative data". But in context of Psychology, the meaning of test depends upon it's applications. Qualities such as intelligence, attitude, aptitude, personality characteristics and abilities are the subject matter of the psychological tests, which can not be viewed directly. In psychological test, one observe people's behaviour in a systematic way and make inferences about the underlying attributes that stimulate that behaviour. As Reber and Reber (2001) said, "A psychological test refers to all the test of psychological nature." According to F. S. Freeman (1965)- "A psychological test is a standardized instrument designed to measure objectivity one or more aspects of a total personality by means of samples of verbal and non-verbal responses, or by means of other behaviours." According to Lee. J. Cronbach (1949)- "A test is a systematic procedure for

observing a person's behaviour and describing with the aid of a numerical scale or category system." This way we can say that 'A psychological test' is a structured technique used to generate a carefully selected sample of behaviour. This behaviour sample is used in turn, to make inferences about the psychological attributes of the people who have been tested, attributes such as intelligence, self-esteem and so forth. Psychological tests are behaviour samples that are uniform, objective and interpretable. They are designed to gauge individual differences and norms are often developed to help interpret these differences.

Psychological Tests Classification of Psychological Test According to Anastasi, there are three criteria of classification of the psychological tests:

1. On the basis of Contents: on this basis. psychological tests can be divided into two types-

(i) Cognitive test: Cognitive tests are those tests which are used to measure different abilities and capacities. It is also called Ability test. Some of it's examples are as follows-

(a) Test of general intelligence: these tests are designed to measure general intelligence of people. For example, an adult's ability to cope with general intellectual problems.

(b) Test of creative intelligence: these tests are designed to measure creative capacity.

(c) Test of aptitude: Aptitude usually refers to the ability to learn a particular kind of skill required in a specific situation. Test of aptitude is designed to measure it, such as, musical aptitude test, mechanical aptitude test, clerical aptitude test, etc.

(d) Test of achievement: these tests are designed to measure the capacity or ability to achieve the goal. These tests help in the prediction of the people's achievement in their field.

(ii) Non- Cognitive test: Non-cognitive tests are those tests which are used to measure different aspects of personality. It is also called Personality test. Some of it's examples are as follows-

(a) Test of personality: these tests are designed to reveal an individual's personality which includes characteristics patterns of thinking, feeling and behaving.

(b) Test of traits and temperaments: these tests are the deep study of the traits and temperaments of a person, i.e. the way a person responds emotionally and cognitively to another person, thing and/or situation.

(c) Test of values and interests: these tests focused on the personality attributes of interests and values. For example, vocational interest.

2. On the basis of Purpose: on this basis, psychological tests can be divided into two types:

(i) Descriptive test: these are those tests in which the mode of the answer will be descriptive, i.e. the testee has to give his response in a descriptive manner. Descriptive test may be

(a) Cognitive test or (b) Non-Cognitive test or the mixture of both the types.

(ii) Selection test: in selection test the testee has to choose or select the right choice from the multiple choice questions.

Selection test may also be (a) Cognitive test or (b) Non-Cognitive test.

3. On the basis of Form: on this basis, psychological tests can be divided into five types-

(i) Oral test: the mode of this type of test is oral, i.e. spoken. There is a lack of written work.

(ii) Paper-pencil test: in this type of test, a test booklet and an answer sheet is provided to the testee and he perform written work using paper, pencil, etc.

(iii) Speed test: in this type the questions of the test booklet are arranged in such a manner that it can't be completely solved within that time limit. There is a lot of questions in the test booklet and the testee has to solve it in a short timelimit. The scoring is done on the basis of speed, i.e. number of the solved questions.

(iv) Power test: In this type of test, a test booklet and an answer sheet is provided to the testee and there is also the time limitation but the scoring is done on the basis of correctness, i.e. accuracy of the answers.

(v) Performance test: performance tests are those tests in which the language is either used to direct or may not be used when pantomime and gesture is used for the direction but in the items the language is never used. There are few objects kept physically in front of the testee and they are asked to manipulate and/or disentangle. These tests are both, individual as well as group. One of the performance test which is widely used for the measurement of intelligence is Alexander's Battery of Performance test. Characteristics of a Good Psychological test –

There are five main characteristics of a good psychological tests, which are as follows: ❖ Objectivity ❖ Reliability ❖ Validity ❖ Norms ❖ Practicability ❖ 1. **Objectivity:** The test should be free from subjective judgements such as wish, prejudice, etc. regarding various attributes which are to be measured and evaluated like, the ability, skill, knowledge or potentiality, traits, etc.

❖ 2. **Reliability**: This simply refers to the extent to which the results obtained are consistent or reliable, when the test is administered for more than one with a reasonable gap of time, a reliable test will yield the same scores. It simply shows that the test is trustworthy. Though, there are many methods of testing the reliability of a test.

❖ 3. **Validity:** The validity of the test signifies that the test measures what it meant to measure. For example, when an intelligence test is developed to assess the level of intelligence, it should assess the intelligence of the person, not other factors. There are many ways to assess validity of a test. Simply, we can say that it explains us whether the test fulfils the objective of it's development. Characteristics of a Good Psychological test

❖ 4**. Norms**: It refer to the average performance of a representative sample on a given test. According to Chaplin (1975)- "A norm may be a single value or a range of values expressing the typical performance of a group against which any individual can be prepared. Norms may be expressed in terms of age, percentile or simple average." On the basis of nature, there are mainly four types of normsi. Age norms ii. Grade norms iii. Percentile norms iv. Standard score norms

❖ 5. **Practicability:** The psychological test must be practicable in- time required for completion, the length, number of items or questions, scoring, etc. The test should neither be too lengthy nor too short and difficult to answer as well as scoring. Characteristics of a Good Psychological test Purpose of Psychological test Psychological test is an objective and standardised measure of an individual's mental and/or behavioural characteristics. The purpose of all the psychological tests is to measure or to find out all the dimensions of psychological attributes, i.e. individual differences.

The study of the individual differences is done in the following fields:

1. Prediction: by using psychological test, assessment is done and the gathered information is used for the prediction of future behavioural patterns. There are some fields of prediction which are as follows: (a) Clinical field: for assessment and prediction about any individual, a clinical psychologist generally conduct psychological tests. For example, if he conduct test of emotional adjustment on a person and he finds that the score of that person is very less than the average score of that test, i.e. poor emotional adjustment. Then he can easily predict that the person may suffer from some mental illness if not helped.

(b) Field of academic achievements: Prediction is also done in the field of academic achievements by psychological testing. For example, in schools, the intelligence is measured of the student by using psychological tests and prediction is done about the probability of his future achievements on the basis of his scores.

(c) In the field of selection for employment: tests are also used to select the appropriate person for a particular job. By the help of the score obtained the prediction is done about the performance. The selection of best employee is done on the basis of this prediction, which is based on the psychological tests.

2. Description and Selection: on the basis of psychological tests, the assessment and description of the mental and/or behavioural characteristics of an individual and his selection for a particular job or post is done, where he can perform his best.

3. Diagnosis and treatment: the psychological tests play an important role in the interpretation and analysis of the individual behaviour. There is an analysis of different aspects of behaviour. For example, a school counsellor can easily conclude that why a student who is of high I.Q. fails to perform better in his class, on the basis of the psychological tests. A clinical psychologist can easily diagnose any patient suffering from any mental disease on the basis of psychological testing. The treatment is carried out further after the diagnosis.

4. Research: One of the aim of the psychological test is to research about the new theories and techniques. The psychological tests are used widely now a days in the field of research. According to Gulliken (1954), there is mutual relationship between the psychological test and the research. Many psychological tests are the result of the research and many researches are going on the theories which are the product of the psychological tests. In this way it is clear that, the psychological tests are widely used for the various purposes such as for clinical diagnosis, guidance, personnel selection, placement, training, etc. Thank you

Although cognitive and neuropsychological assessments might overlap, these approaches analyze behavior according to two different paradigms.

***Cognitive assessment*** is undertaken without reference to the possible neurobiological underpinnings of overt behavior, and it describes the patient very much as others might observe him or her in the world.

***Neuropsychological assessment*** is undertaken in the context of growing knowledge about brain–behavior relationships, and it has the additional possibility of describing the child in terms of unseen neural pathways. These approaches provide ways of conceptualizing how children integrate information (and their thinking, learning, and responding) at di□erent levels. General cognitive assessment focuses on understanding behavior at a cognitive level and in descriptive terms. Focused neuropsychological assessment introduces the additional possibility of understanding behavior at neural levels and in neurobiological terms. However, regardless of the theoretical di□erences among the psychologists undertaking these evaluations, in a practical way it is the patient's referral issues that shape the assessment process and focus the interpretation of results.

**BASICS OF PSYCHOLOGICAL ASSESSMENT**

Psychological assessment involves more than testing. Although measurements are useful, testing involves more than scores.

**The Testing Process**

In addition to testing, assessment procedures include examining past records (medical examinations, prior testing, report cards), interviewing the client and his or her family (in structured and unstructured formats), obtaining information from home and school (and, sometimes, onsite observations), and obtaining rating scales that have been □lled out by the child's parents and teachers (regarding developmental, behavioral, emotional, and diagnostic issues). The diagnostic aspect of the process involves an attempt to determine the psychiatric and educational categories for which the client meets the criteria. Cognitive and neuropsychological testings are only two aspects of an attempt to get a broad view of the way a child solves problems in the world, to understand his or her unique interaction with any diagnostic category, and to provide recommendations for interventions.

**Measurements in Testing**

Although many techniques might be used to help understand a child client and his or her

referral question, the emphasis here is on standardized testing (based on regularized procedures as well as normative data). The point of testing is to create a way of comparing one individual to a population of such individuals, as well as the strengths and weaknesses within one individual. The psychologist will select an instrument that is valid (it measures what is intended) and reliable (it measures it consistently). The testing involves establishing a basal level (the level at which all items are passed) and a ceiling (the level at which no items are passed). The testing process involves converting a raw score to a standard score that can be compared with other scores along what is thought of as a normal distribution with predictable statistical properties. The standard deviation (SD) is a measure of dispersion around the mean; the farther scores are from the mean and each other in terms of the SD, the more meaningful is the discrepancy. It is accepted that a measurement is an approximation and not exact. This approximation is recognized by the concept of standard error of measurement (SEM), which is the naturally occurring (random) error that takes place in the real world as one attempts to measure anything. The fact thatmeasurements are not exact is also recognized by the concepts of confidence intervals (the probability that the true score falls within a range of scores) and statistical significance (the probability of finding a result by chance).

**Beyond Scores and Tests**

It should be noted that the testing process involves more than scores. Although scores are important, how the patient goes about
solving cognitive problems is also carefully observed. The examiner is interested not only in test performance, but also in the
patient's reaction. It is important to the psychologist to note how the patient arrives at right as well as wrong answers and to
explore the patient's cognitive strategies on tasks. In general, it is important to note whether the patient responds in a deliberate
or impulsive way.

The testing process is not separate from the therapeutic process. If well handled, the testing can become an extension of the
treatment. Feedback about results and their relationship to the presenting problems can be presented as the evaluation unfolds.

**COGNITIVE AND NEUROPSYCHOLOGICAL ASSESSMENT**

The general cognitive assessment tends to be a descriptive and practical event with an eye to the policies and possibilities in the outside world. As a result, the cognitive tests tend to be "comprehensive" instruments. The very factors that make them useful for general assessment limit them when it comes to understanding neurobiological functioning. The neuropsychological instruments tend to be more "precision" tests that attempt to assess very speci□c behaviors that represent neural constructs in an inner world. Even when the results are explored at more descriptive levels, functioning within the domains is not seen as separate or independent of their neurobiological underpinnings. Tables 5.6-1 and 5.6-2 list the current cognitive and neuropsychological tests.

**Table 5.6-1**
**Cognitive Tests**

**Intellectual Testing.** Intelligence is defined as the ability to learn from and adapt to the environment and the ability to think abstractly. Intelligence tests are used to determine the patient's general intellectual functioning. The intelligence quotient (IQ) is a measure of present intellectual functioning. Although intelligence tests yield one IQ score (or several IQ or index scores), they are, in fact, devices for "sampling" many tasks in a variety of verbal

and nonverbal areas. Intelligence testing is often part of a variety of psychological assessment batteries, including psychoeducational and neuropsychological evaluation, along with more general developmental and clinical evaluations.

Although there is some disagreement, IQ scores tend to be relatively stable starting as young as 5 to 7 years of age. In general, the older the child is when tested and the smaller the interval between test administrations, the greater is the correlation between two IQ scores. Although using an IQ score can be useful as a way of assessing the client's basic trajectory through life, the prudent practitioner must be aware that there are a number of factors that can a□ect intellectual functioning and, thus, IQ scores. Factors associated with a disorder and illness can suppress scores, particularly in psychiatric practice. These can include situational factors, such as lack of motivation, as well as transient factors, including inattention, depression, and psychosis.

Despite conceptual and practical complications, high intelligence is associated with better prognosis in a wide range of psychiatric conditions; lower rates for behavior, conduct, and emotional problems in children; and lower rates of referral for psychiatric problems in adults. In the case of any kind of brain damage (neuronal death), intellectual level accounts for a great deal of variance in predicting outcome, with lower IQs associated with poorer outcomes and higher IQs associated with better outcomes.

**ASSESSMENT.** Although IQ is what is obtained with an IQ test, there are a variety of intellectual tests, as well as other ways of calculating intellectual level. There are a number of instruments from which to choose, and psychologists must make their selection based on the specific characteristics of each test (e.g., normative sample and construction of the instrument) as they relate to the characteristics of the client (e.g., age and referral question). Once the test has been administered, the clinician must make interpretations based on the analysis of overall and subtest scores and their pattern in the context of the diagnostic process.

*Comprehensive Intellectual Tests.* The two best-known intellectual tests are the Wechsler Intelligence Scales and the Stanford-Binet Intelligence Scales (SB). The current editions of both are divided into separate subtests, and the data are analyzed in separate spheres. There are three separate instruments within the Wechsler tests that are designed for three different age groups over the life span: Wechsler Preschool and Primary Scale of Intelligence (WPPSI), Wechsler Intelligence Scale for Children (WISC), and Wechsler Adult Intelligence Scale (WAIS). One SB instrument covers a lifetime. Both instruments have made attempts to assist in decision making regarding attentional problems. The WISC has made particular attempts to link its findings to memory, adaptive, and giftedness scales. The SB includes a routing system so that the examiner can "adapt" the administration to the functioning level of the examinee.

**Achievement Testing.** Achievement testing is used to determine a student's level of functioning in basic academic areas (i.e., reading, mathematics, and writing). The purpose of the assessment is to identify learning problems and usually to rule out other psychological factors that might be complicating learning. Unlike intellectual testing, achievement testing is not necessarily expected to be stable over time because it measures the child's success in formal learning and is highly dependent on the home environment and the school curriculum. Learning disability is commonly defined in terms of "unexpected underachievement"—that is, the child has the potential and opportunities to have learned more. When achievement testing is undertaken along with intellectual and processing testing, the overall evaluation is commonly referred to as a psychoeducational assessment.

**ASSESSMENT.** Psychologists commonly begin an assessment of academic achievement by giving a comprehensive test in order to get a sense of a client's areas of weakness in contrast to his or her strengths in reading, math, and writing. These findings are compared

with school records. Because reading problems are a relatively common reason for referral and their causes are increasingly understood, where indicated, this comprehensive test is commonly followed by other tests of reading skills that separate out accuracy, fluency, and comprehension.

*Comprehensive Achievement Tests.* Each of the tests assesses a range of academic areas, so that they can be compared with each other for any individual or to academic achievement according to more external standards (age/grade expectations). The Wechsler Individual Achievement Tests (WIAT) and the Woodcock-Johnson Tests of Achievement (WJ-ACH) allow for the systematic assessment of reading (basic word recognition/decoding and comprehension), mathematics (calculation and reasoning), and writing (brief to extensive composition), as well as spelling and other academic spheres.

## FOCUSED NEUROPSYCHOLOGICAL ASSESSMENT

Neuropsychology is dedicated to the study of brain–behavior relations and has matured into a clinical discipline for the diagnosis and characterization of brain function and dysfunction.

### Assessment of Functioning

Neuropsychological assessment was originally developed for the assessment of *adult* patients and was not generally applied to child assessment until later. This functional assessment was important because the e□ect of trauma to the brain is highly variable across individuals, even when the precise location and size of the lesion is known. In these situations, neuropsychological tests could provide speci□c functional information that take the child's age and developmental status into account. This continues to be a prominent point of referral for pediatric neuropsychology because it discusses not just the existence of the brain disruption but also its *meaning* in terms of the child's ability to function. This use of neuropsychological assessment is important with gross injury to the brain, but it is also valuable in situations in which sequelae are subtle and at risk of being attributed to psychological factors such as grief or poor motivation.

### Technical Advances

Recent advances in neuroimaging have added to the use of neuropsychology in child assessment. One reason that neuropsychology was later in being applied to children was that technology for learning about *children's normal brain development* was not available. Given that neuropsychology studies the relationship between *behavior and the brain,* this gap in knowledge meant that inferences about brain function could not be applied to children. Because techniques such as positron emission tomography (PET) were prohibited in research with children, it was not until the introduction of functional magnetic resonance imaging (fMRI) in the early 1990s that full-scale research of child brain development could begin. Since that time, there has been an unprecedented explosion of knowledge that has expanded the scienti□c understanding of child brain development exponentially every year up to the present.

### Developments in Test Instruments

Other advances in pediatric neuropsychology include the introduction of tests speci□cally designed for use with children. These instruments assess similar behaviors as do their adult counterparts but use paradigms that are more engaging to children and better measure developmental transitions throughout childhood. These instruments are used in clinical assessments but are now also part of many research protocols examining childhood diseases and genetic conditions. Given its precision in measuring behavior, neuropsychological assessment is now involved, not just in the assessment of function after an injury but also in the initial *diagnostic* processes. Another example of this speci□city is the now-routine use of neuropsychological testing in genetic research of developmental disorders of childhood, given the precision that it adds to questions of endophenotype expression.

**Neuropsychology's Application to Diagnosis and Treatment Planning**

These new technologies have greatly enlarged our understanding of both normal and atypical brain development in children, a□ecting our knowledge of childhood brain–behavior relationships, as well as diagnosis and treatment planning in pediatric groups. This increased understanding of typical as well as atypical brain development has made neuropsychological assessment useful, not just for children with acquired disorders but also in cases of developmental disorders. In this context, the term *developmental disorders* is used in reference to a child who is not developing in step with peers but who for unknown reasons struggles greatly or fails to develop speci□c abilities. Examples are di□culty in learning to read in an otherwise intact child (referred to as the developmental disorder of dyslexia) and problems with developing social or self-regulatory skills (seen in, respectively, autism spectrum and attention-de□cit disorders). These disorders stand in contrast to "acquired" disorders, in which a known event, such as injury or illness, has affected the child's developmental trajectory.

**Integration of Neuropsychological, Educational, and Psychological Paradigms in Testing**

The e□ect on testing that these breakthroughs have made has also been signi□cant. Most of this subsection focuses on test instruments that are foundational when assessing developmental di□erences in children. These measures (including tests of IQ or academic achievement) are central when youngsters are not keeping up with their peers in one regard or another and are the backbone of testing, regardless of whether the assessor is trained as a psychologist or a neuropsychologist or has a background in education. These instruments are pivotal because they measure the major paradigms of both education and psychology, paradigms that govern both diagnosis and the provision of services.

More recently, however, these established paradigms have been joined and a□ected by new information emerging from cognitive and neuropsychology in concert with the aforementioned breakthroughs in neuroimaging. The integration of these □ndings has led to relatively rapid changes in educational law and in the instruments used to test children for learning disabilities.

**Applications of Neuropsychological Assessment**

The functional and diagnostic assessment of children and adolescents often begins (and ends) with the kinds of evaluations described in the "General Cognitive Assessment" subsection. There are situations, however, in which the use of educational or psychological or cognitive testing alone is not able to clarify the diagnosis and determine the most appropriate treatment plan. In those cases, the psychiatrist should consider additional neuropsychological testing.

**Descriptions and Assessment of Typical Neuropsychological Domains**

Typically, in addition to assessing IQ, academic achievement, and social and emotional functioning, neuropsychologists assess domains of memory, attention, executive functioning, language, visual perception, and sensory-motor development. Tests have beendeveloped to examine specific aspects of these domains in isolation so as to increase diagnostic clarity. Although these domains are discussed as di□erent constructs in this subsection, in truth they overlap with one another in many di□erent ways. For example, the term *working memory* is often conceptualized as being an aspect of attention as well as a necessary component of good planning (which is part of executive functioning). It is also a component of memory in that, when it is not well developed, it leads to the phenomenon offorgetfulness.

**Memory.** *Memory* is defined as the ability to reproduce or recall what has been learned or retained through activities or experiences. The process of memorizing includes two steps: encoding and retrieving. One metaphor for this two-step memory process is a filing cabinet.

*Encoding*, then, is when a person puts information into the "filing cabinet drawer." Someone with a true amnesic disorder (such as Alzheimer's disease) never gets the information into the drawer. No amount of cueing or reminders later on will help the person to recall the information because it never "got into the drawer" in the first place. This type of impairment can be seen in some children, most often those with seizure disorders that adversely affect the temporal lobes. For most children, however, the problem described as "poor memory" is actually a difficulty with retrieval. *Retrieval* is the ability to get information out of the "file cabinet drawer" once it has been put in. Poor retrieval is associated with problems of organization (the folders are missing labels) and is more often the issue when children are described as being forgetful.

To di□erentiate between encoding and retrieval, children are asked to memorize material and then, 20 to 30 minutes later, to recall it. If they are unable to remember it spontaneously, the examiner does not know whether they have not encoded it or are having problems with retrieval. If the child can remember the material with cueing (e.g., "In the story I read you, was the boy's name Johnny or Sam?"), retrieval is implicated. For the child who cannot encode, however, cueing will not help.

**ASSESSMENT.** In assessing memory, several guidelines should be followed. Both visual and verbal memory tasks should be given. Visual memory tasks (such as learning the location of dots or memorizing faces) are usually aided by the right hemisphere. In most people, verbal memory tasks (such as memorizing a shopping list or a story) are supported by the left hemisphere. In addition, material to be memorized should include rote tasks (such as word lists) as well as material that is presented in context (such as stories). Some memory tasks assess learning, or the child's ability to benefit from several presentations of the material. It is expected that, after three exposures to a picture of dots, the child's memory of it will be stronger than it was after the first exposure. If not, encoding may be implicated. A 20- to 30-minute delay should also be part of the memory assessment, and cues should be available to differentiate between encoding and retrieval difficulties.

Other terms in the neuropsychological literature appear to describe memory but are actually probably better classi□ed as part of the attention system. These include *short-term memory* and *working memory*. These terms are discussed in the following subsection on attention.

**Attention.** The attention literature is large and includes many different conceptualizations. The following illustration demonstrates some elements of good attention.

Suppose you arrive at a lecture hall, open your notebook, and rather than scanning the room indiscriminately, turn your attention to the instructor, who is just beginning to speak (*selective attention*). The lecture is mildly interesting, and you are able to pay attention for the full 20-minute presentation (*sustained attention* or *vigilance*). At the same time that you are listening to the instructor, you are taking handwritten notes incorporating headings and subheadings. It appears that you are able simultaneously to listen, write, and organize rather e□ortlessly, although you are probably shifting your attention among these competing tasks (*divided attention*). A □re engine goes by the lecture hall and you look up (*distraction*) but are then able to ignore the dimming noise of the siren (*inhibition*) and continue to listen to the lecture (again, *sustained attention*). Suddenly, the

□re alarm rings, and you smell smoke. These distracters capture your full attention (*disengagement* from lecture), and their
importance causes you to change your attention and behavior (*set shifting*) as you hurriedly head for the door. A breakdown in
any one of these areas can lead to a breakdown in attention.

**ASSESSMENT.** Assessment of attention requires a number of approaches. Children with attention problems exhibit them at home and at school whenever a task becomes less interesting to them. They function better when working one-on-one with a person or when working on a new activity because it is more stimulating. For this reason, the testing environment may not elicit the inattentive behavior (especially on the first day). To assess the child's attention "in real life" and across settings, attention questionnaires should be completed by both parents and teachers. Many researchers consider this aspect of the assessment of attention to be the most important. Some neuropsychological measures have been found to be sensitive to attention as well. Computerized measures of sustained attention that are designed to be long and boring can capture the loss of attention described here. In addition, specific kinds of performance patterns on these measures have been shown to differentiate different types of attention problems.

Assessment of *verbal* short-term memory might include the repetition of digits or of short sentences. Assessment of *visual* short-term memory can be achieved by having the child point to dots or circles on the page in the same order in which the examiner has just pointed to them. Working memory is usually assessed as the second part of a short-term memory test. It requires that the material that has been stored in short-term memory be manipulated in some way. Verbal working memory can be assessed by having the child repeat digits backward or by doing mathematics in his or her head. Saying the months of the year backward can also assess verbal working memory (as long as the child is able to give them in their usual order without di□culty). Having the child point to the dots on the page in the reverse order in which they are shown can assess visual-spatial working memory.

**Executive Functioning.** Executive functioning could be considered to be the mature product of good attention. Although not developed in earnest until children reach adolescence, many aspects of executive functioning begin to appear when children are younger and, thus, can be measured. *Executive functioning* refers to the person's ability to organize his or her behaviors to perform a specific goal. Good executive functioning allows a person to identify problems, generate solutions, choose among them, follow through on the chosen strategy, and evaluate its effectiveness as the work progresses. Without good executive functioning, children who are bright have difficulty demonstrating their abilities. Their parents often report school underachievement that cannot be explained by learning problems. The issue is not about "knowledge" but rather the application of that knowledge to everyday functioning.

**ASSESSMENT.** Assessment of executive functioning requires several tests, given its many facets. Good attention and working memory, already discussed, are crucial to goal-directed behavior. Inhibition can be tested by giving the child a task in which he or she must control an automatic response.

Fluency can be assessed by having the child generate category words under a time limit. For example, a child might be asked to name as many kinds of toys as he or she can in 1 minute. A variant of this task requires the child to create as many designs as he or she can in a 1-minute period, according to strict guidelines.

Cognitive □exibility is often tested with the Wisconsin Card Sorting Test (WCST), a measure of problem solving. On this test, the child is not told how to solve the puzzles; rather, he or she must use feedback that his or her attempts are "right" or "wrong" and is

then expected to use this information to generate strategies. During the course of this test, the rules often change without warning, requiring that the child "regroup" and develop a new strategy. This measure generates information about the child's ability to initially □gure out the task, his or her tendency to perseverate on wrong responses, and his or her ability to use feedback to generate new responses.

Planning is another aspect of executive functioning. Variants of a "tower" test are often used to assess this ability. On a tower test, the child is shown a picture with colored balls or disks stacked on top of one another on wooden pegs in a speci□c con□guration. The child is told to move the balls or disks on the pegs for an actual model on the table to match the con□guration shown in the picture. The child is instructed to move only one ball or disk at a time and to use as few moves as possible. To perform the task well, the child must □rst "hold back" and not make impulsive moves that may get him or her "cornered." The child must also visualize the □rst few steps of the problem. Thus, both impulse control and visual working memory are required to exhibit good planning on this rather entertaining test.

**Language.** Human language organizes, supports, and communicates knowledge, memories, and ideas. Beyond just allowing us to communicate with others, language organizes both thoughts and emotions, as well as helping us sequence our actions. Although traditionally discussed in terms of left hemisphere functioning, much of the human cortex is involved in various aspects of language. Communication includes both *speech,* the rapid and complex motor movements involved in talking, and *language*, the code used to express thoughts and ideas.

Linguists conceptualize language as being composed of four separate parts: *phonemes,* de□ned as the smallest units of sound in a language; *morphemes,* the smallest units of meaning; *syntax* at the level of the sentence (e.g., use of direct or indirect pronouns); and *discourse,* the stringing together of sentences to create a narrative.

In considering language, perhaps the most common distinction made is between expressive and receptive language. *Expressive language* requires the production of language, including articulating clearly, □nding the right word, and applying grammar and syntax to one's ideas, in addition to vocal □uency and voice tone (prosody). *Receptive language* involves the ability to comprehend and remember what is said.

Children with expressive language problems may appear to have little to say and considered to be shy. In fact, however, their di□culty may be with self-expression. Some children who are very talkative (fluent) may also have difficulty with finding the word they want or organizing their sentences to make them clear. The paradox of a □uent child with an expressive language disorder may cause his or her problems to be overlooked.

Receptive language, or the ability to understand what is being said, represents another aspect of the language system. Children with poor receptive language have di□culty in processing information that is spoken to them and may have di□culty learning in the classroom or appear to be inattentive. Sometimes they appear to be oppositional because of their difficulty with understanding (and therefore *doing*) what they are told.

Secondary problems of children with language disorders include di□culties with social interactions and processing of emotions. Language is what humans use to interact and communicate their ideas to one another. When this ability is compromised, children may isolate or try to □nd less language-intense activities to occupy their time. Emotional problems may ensue from the child's di□culty with using language to express and, therefore, process his or her inner world.

**ASSESSMENT.** Assessment of language should include several measures meant to identify the

child's specific language profile. Tests should assess all levels of language, including phonemes, single words, simple phrases, complex sentences, and conversation. Measures of

both expressive and receptive language should be included. In the assessment of receptive language, children are asked to distinguish between similar sounds and words, remember and repeat word lists and related strings of words, point to a picture that depicts a vocabulary word, and follow increasingly complex directions presented only once. In the assessment of expressive language, children are asked to perform tasks such as listing as many round objects as they can within a time limit, naming a depicted or described item, defining words or concepts, or creating a syntactically complex sentence according to strict guidelines.

In addition, the psychologist might explore *pragmatics,* which is the child's ability to participate in conversation and use social language. This involves interpreting nonverbal aspects of communication, as well as observing basic social rules, such as turn-taking in conversation. Although neuropsychologists often evaluate pragmatics in addition to receptive and expressive language, they also work in concert with speech and language specialists when additional assessment is indicated.

**Visuoperceptual Functioning.** There are several associated constructs in neuropsychology that reflect people's ability to make sense of what they see, to organize it, or to copy it. These abilities are referred to as *visuoperceptual–visuoconstructive abilities.*

Problems with visuoperception are distinct from problems with vision. A person with acute eyesight can struggle with perceptual difficulties, such as identifying which of several figures are exactly alike. Some children have difficulty seeing exactly where something is, and these children may have trouble localizing a point in space or judging the direction of a line.

*Visuoconstruction* abilities allow a child to join parts to make a whole. These skills require the integration of the motor system with the visual system. Examples include the ability to put together blocks to form a design or to draw three lines to form a triangle.

Problems with visuoperceptual development have academic, as well as social, rami□cations. Academic areas, such as mathematics, that are less reliant on verbal support are at risk. In addition, concepts such as time and monetary values may not be clearly understood. Students with these di□culties often exhibit a poor sense of direction, and problems with integrating complex visual arrays may lead to feelings of being overwhelmed. They may also have di□culty "reading between the lines," thereby making comprehension of less tangible reading concepts (such as theme) more elusive.

Social problems are also often seen in students with these delays. Many elements of good social interactions are nonverbal, including the ability to notice and interpret gestures, facial expression, body posture, and tone of voice. Students with visuoperceptual delays may be overreliant on verbal information and may not understand when people are being sarcastic or when something is said in jest.

**ASSESSMENT.** Assessment of visual processing must address each of the specific elements of this system. The visuoperceptual abilities should be tested using tasks that do not require the child to use his or her hands to produce the response—for example, activities that require the child to identify designs that match or differ from the target, as well as

measures of mental rotation (determining which design is the same as the target, only rotated). Visuoconstruction tasks add the demand of integrating the hands and eyes in producing the response—for example, having the child draw copies of designs or use blocks to create a replica of a model.

**Sensory/Motor Functioning.** The sensory/motor system is also assessed as part of the neuropsychological examination. Lateralized sensory or motor problems suggest neurological problems on the opposite side of the brain and are often correlated with cognitive processes localized to the right or left hemisphere. Tasks requiring the perception of visual or auditory fields or specific actions with right or left sides of the body are part of this domain. In addition, integration of perceptions or movements is also assessed.

Motor assessment is further categorized into the assessment of handedness and tests of large versus □ne motor development, as well as the ability to plan motor responses (praxis).

**ASSESSMENT.** The sensory exam usually includes assessment of visual fields using clinical methods, such as having the child look at the examiner's nose and then determine whether the assessor is moving the right or left extended hand. Similarly, assessment of bilateral auditory perception might include the assessor standing behind the child and rubbing his or her fingers near the child's right or left ear. Other perceptual tests might assess the ability to name unseen objects placed in the child's right or left hand. Finger agnosia is tested by touching a finger when the child's hand is hidden behind a screen and then having him or her indicate which finger was touched. Integration of perception might include having the child follow directions involving a picture that is shown. Age-based normative data are available for all of these tasks.

Both □ne and large motor tests are usually assessed on both the right and left sides of the body. Lateralized □ne motor tasks include quickly placing pegs in holes with each hand or squeezing a hand dynamometer with each hand to assess grip strength. Fingertip tapping is one way of testing motor sequencing, as are activities that require the child to repeat sequences of movements from memory. Handedness is best assessed by having the child do a number of tasks with one hand (e.g., "Show me how you use this spoon," "Hand me the dime," and "Throw me the ball.") in random order. Assessment of di□culties with motor planning can be done using pantomime.

Large motor testing involves having the child demonstrate gait while walking forward and backward, running, skipping, walking a straight line, and balancing on one foot. In cases in which the □ndings of motor screening are signi□cant, the neuropsychologist might refer the child to an occupational or physical therapist for further, more speci□c, evaluation.

Neuropsychological testing is commonly undertaken according to several discrete domains that re□ect areas of brain functioning. Typically, these include attention and executive functioning, memory, and language as well as visuoperceptual and sensory/motor functioning. In considering neuropsychological issues, the following factors should be kept in mind:

After early brain injury, language and motor functioning are the most likely to bene□t from "plasticity." Some research suggests that, with this process of reorganization, other functions (most notably, visuoperceptual abilities) may be "crowded out," yielding scores that are lower than expected.

Interventions for neurologically driven developmental delays have their most profound e□ect on younger children. Recent studies have shown that, in children with reading disabilities, bilateral representation of language identi□ed with fMRI before intervention shifted to the left hemisphere by several orders of magnitude in every subject after only 80 hours of reading intervention. These changes in the brain were accompanied by

improved reading skills. Thus, the philosophy of delaying intervention until a de□cit is fully expressed may keep children from receiving the full bene□t that early intervention provides.
Risk factors for reading disabilities include family history, early language delays, poor articulation, chronic ear infections, poor early rhyming abilities, inability to recite (not sing) the alphabet by the end of kindergarten, and early brain injury.
Ambidexterity (consistently using the right hand for some speci□c tasks and the left hand for other speci□c tasks) often runs in families in which several members are left handed. In contrast, ambiguous handedness (or the use of either hand for the same task; sometimes writing with the right hand, sometimes writing with the left hand) can be a pathognomonic sign suggesting poor cerebral organization for specific behaviors.
Attention-de□cit/hyperactivity disorder (ADHD) more adversely a□ects abilities typically associated with right hemisphere functioning (such as □ne motor skills and visuoperceptual abilities) and a□ects attention and executive functioning. Psychostimulant medication has been shown to improve functioning in all of these domains in children with ADHD.

## Rorschach test

.

The **Rorschach test** is a psychological test in which subjects' perceptions of inkblots are recorded and then analyzed using psychological interpretation, complex algorithms, or both. Some psychologists use this test to examine a person's personality characteristics and emotional functioning. It has been employed to detect underlying thought disorder, especially in cases where patients are reluctant to describe their thinking processes openly.[4] The test is named after its creator, Swiss psychologist Hermann Rorschach. The Rorschach can be thought of as a psychometric examination of pareidolia, the active pattern of perceiving objects, shapes, or scenery as meaningful things to the observer's experience, the most common being faces or other pattern of forms that are not present at the time of the observation.[5] In the 1960s, the Rorschach was the most widely used projective test.[6]

### Method

The Rorschach test is appropriate for subjects from the age of five to adulthood. The administrator and subject typically sit next to each other at a table, with the administrator slightly behind the subject. Side-by-side seating of the examiner and the subject is used to reduce any effects of inadvertent cues from the examiner to the subject. In other words, side-by-side seating mitigates the possibility that the examiner will accidentally influence the subject's responses.[25] This is to facilitate a "relaxed but controlled atmosphere". There are ten official inkblots, each printed on a separate white card, approximately 18 by 24 cm in size.[26] Each of the blots has near perfect bilateral symmetry. Five inkblots are of black ink, two are of black and red ink and three are multicolored, on a white background.[27][28][29] After the test subject has seen and responded to all of the inkblots (*free association* phase), the tester then presents them again one at a time in a set sequence for the subject to study: the subject is asked to note where they see what they originally saw and what makes it look like that (*inquiry* phase). The subject is usually asked to hold the cards and may rotate them. Whether the cards are rotated, and other related factors such as whether permission to rotate them is asked, may expose personality traits and normally contributes to the

assessment.[30] As the subject is examining the inkblots, the psychologist writes down everything the subject says or does, no matter how trivial. Analysis of responses is recorded by the test administrator using a tabulation and scoring sheet and, if required, a separate location chart.[25]

The general goal of the test is to provide data about cognition and personality variables such as motivations, response tendencies, cognitive operations, affectivity, and personal/interpersonal perceptions. The underlying assumption is that an individual will class external stimuli based on person-specific perceptual sets, and including needs, base motives, conflicts, and that this clustering process is representative of the process used in real-life situations.[31] Methods of interpretation differ. Rorschach scoring systems have been described as a system of pegs on which to hang one's knowledge of personality.[32] The most widely used method in the United States is based on the work of Exner.

Administration of the test to a group of subjects, by means of projected images, has also occasionally been performed, but mainly for research rather than diagnostic purposes.[25]

Test administration is not to be confused with test interpretation:

The interpretation of a Rorschach record is a complex process. It requires a wealth of knowledge concerning personality dynamics generally as well as considerable experience with the Rorschach method specifically. Proficiency as a Rorschach *administrator* can be gained within a few months. However, even those who are able and qualified to become Rorschach *interpreters* usually remain in a "learning stage" for a number of years.[25]

**Features or categories**

The interpretation of the Rorschach test is not based primarily on the contents of the response, i.e., *what* the individual sees in the inkblot (the *content*). In fact, the contents of the response are only a comparatively small portion of a broader cluster of variables that are used to interpret the Rorschach data: for instance, information is provided by the time taken before providing a response for a card can be significant (taking a long time can indicate "shock" on the card).[33] As well as by any comments the subject may make in addition to providing a direct response.[34]

In particular, information about *determinants* (the aspects of the inkblots that triggered the response, such as form and color) and *location* (which details of the inkblots triggered the response) is often considered more important than content, although there is contrasting evidence.[35][36] "Popularity" and "originality" of responses[37] can also be considered as basic dimensions in the analysis.[38]

**Content**

The goal in coding content of the Rorschach is to categorize the objects that the subject describes in response to the inkblot. There are 27 established codes for identifying the name of the descriptive object. The codes are classified and include terms such as "human", "nature", "animal", "abstract", "clothing", "fire", and "x-ray", to name a few. Content described that does not have a code already established should be coded using the code "idiographic contents" with the shorthand code being "Idio." [39] Items are also coded for statistical popularity (or, conversely, originality).[40]

More than any other feature in the test, content response can be controlled consciously by the subject, and may be elicited by very disparate factors, which makes it difficult to use content alone to draw any conclusions about the subject's personality; with certain individuals, content responses may potentially be interpreted directly, and some information can at times

be obtained by analyzing thematic trends in the whole set of content responses (which is only feasible when several responses are available), but in general content cannot be analyzed outside of the context of the entire test record.[41]

**Location**

Identifying the location of the subject's response is another element scored in the Rorschach system. Location refers to how much of the inkblot was used to answer the question. Administrators score the response "W" if the whole inkblot was used to answer the question, "D" if a commonly described part of the blot was used, "Dd" if an uncommonly described or unusual detail was used, or "S" if the white space in the background was used. A score of W is typically associated with the subject's motivation to interact with his or her surrounding environment. D is interpreted as one having efficient or adequate functioning. A high frequency of responses coded Dd indicate some maladjustment within the individual. Responses coded S indicate an oppositional or uncooperative test subject.[26][39]

**Determinants**

Systems for Rorschach scoring generally include a concept of "determinants": These are the factors that contribute to establishing the similarity between the inkblot and the subject's content response about it. They can also represent certain basic experiential-perceptual attitudes, showing aspects of the way a subject perceives the world. Rorschach's original work used only *form*, *color* and *movement* as determinants. However currently, another major determinant considered is *shading*,[42] which was inadvertently introduced by poor printing quality of the inkblots. Rorschach initially disregarded shading,[43] since the inkblots originally featured uniform saturation, but later recognized it as a significant factor.[44][45][46]

*Form* is the most common determinant, and is related to intellectual processes. *Color* responses often provide direct insight into one's emotional life. *Movement* and *shading* have been considered more ambiguously, both in definition and interpretation. Rorschach considered *movement* only as the experiencing of actual motion, while others have widened the scope of this determinant, taking it to mean that the subject sees something "going on".[47]

More than one determinant can contribute to the formation of the subject's perception. Fusion of two determinants is taken into account, while also assessing which of the two constituted the primary contributor. For example, "*form-color*" implies a more refined control of impulse than "*color-form*". It is, indeed, from the relation and balance among determinants that personality can be most readily inferred.[47]

**Symmetry of the test items**

A striking characteristic of the Rorschach inkblots is their symmetry. Many unquestionably accept this aspect of the nature of the images but Rorschach, as well as other researchers, certainly did not. Rorschach experimented with both asymmetric and symmetric images before finally opting for the latter.[48]

He gives this explanation for the decision:

Asymmetric figures are rejected by many subjects; symmetry supplied part of the necessary artistic composition. It has a disadvantage in that it tends to make answers somewhat stereotyped. On the other hand, symmetry makes conditions the same for right and left handed subjects; furthermore, it facilitates interpretation for certain blocked subjects. Finally, symmetry makes possible the interpretation of whole scenes.[49]

The impact of symmetry in the Rorschach inkblot's has also been investigated further by other researchers.[48]

**Exner scoring system**

The *Exner scoring system*, also known as the *Rorschach Comprehensive System* (RCS),[50] is the standard method for interpreting the Rorschach test. It was developed in the 1960s by Dr. John E. Exner, as a more rigorous system of analysis. It has been extensively validated and shows high inter-rater reliability.[7][51] In 1969, Exner published *The Rorschach Systems*, a concise description of what would be later called "the Exner system". He later published a study in multiple volumes called *The Rorschach: A Comprehensive system*, the most accepted full description of his system.

Creation of the new system was prompted by the realization that at least five related, but ultimately different methods were in common use at the time, with a sizeable minority of examiners not employing any recognized method at all, basing instead their judgment on subjective assessment, or arbitrarily mixing characteristics of the various standardized systems.[52]

The key components of the Exner system are the clusterization of Rorschach variables and a sequential search strategy to determine the order in which to analyze them,[53] framed in the context of standardized administration, objective, reliable coding and a representative normative database.[54] The system places a lot of emphasis on a cognitive triad of *information processing*, related to how the subject processes input data, *cognitive mediation*, referring to the way information is transformed and identified, and *ideation*.[55]

In the system, responses are scored with reference to their level of vagueness or synthesis of multiple images in the blot, the location of the response, which of a variety of determinants is used to produce the response (i.e., what makes the inkblot look like what it is said to resemble), the form quality of the response (to what extent a response is faithful to how the actual inkblot looks), the contents of the response (what the respondent actually sees in the blot), the degree of mental organizing activity that is involved in producing the response, and any illogical, incongruous, or incoherent aspects of responses. It has been reported that popular responses on the first card include bat, badge and coat of arms.[32]

Using the scores for these categories, the examiner then performs a series of calculations producing a structural summary of the test data. The results of the structural summary are interpreted using existing research data on personality characteristics that have been demonstrated to be associated with different kinds of responses.

With the Rorschach plates (the ten inkblots), the area of each blot which is distinguished by the client is noted and coded—typically as "commonly selected" or "uncommonly selected". There were many different methods for coding the areas of the blots. Exner settled upon the area coding system promoted by S. J. Beck (1944 and 1961). This system was in turn based upon Klopfer's (1942) work.

As pertains to response form, a concept of "form quality" was present from the earliest of Rorschach's works, as a subjective judgment of how well the form of the subject's response matched the inkblots (Rorschach would give a higher form score to more "original" yet good form responses), and this concept was followed by other methods, especially in Europe; in contrast, the Exner system solely defines "good form" as a matter of word occurrence frequency, reducing it to a measure of the subject's distance to the population average.[56]

**Performance assessment system**

*Main article: Rorschach Performance Assessment System*

Rorschach performance assessment system (R-PAS) is a scoring method created by several members of the Rorschach Research Council. They believed that the Exner scoring system was in need of an update, but after Exner's death, the Exner family forbade any changes to be made to the Comprehensive System.[57] Therefore, they established a new system: the R-PAS. It is an attempt at creating a current, empirically based, and internationally focused scoring system that is easier to use than Exner's Comprehensive System.[58] The R-PAS manual is intended to be a comprehensive tool for administering, scoring, and interpreting the Rorschach. The manual consists of two chapters that are basics of scoring and interpretation, aimed for use for novice Rorschach users, followed by numerous chapters containing more detailed and technical information.[59]

In terms of updated scoring, the authors only selected variables that have been empirically supported in the literature. To note, the authors did not create new variables or indices to be coded, but systematically reviewed variables that had been used in past systems.[60] While all of these codes have been used in the past, many have been renamed to be more face valid and readily understood. Scoring of the indices has been updated (e.g. utilizing percentiles and standard scores) to make the Rorschach more in line with other popular personality measures.

In addition to providing coding guidelines to score examinee responses, the R-PAS provides a system to code an examinee's behavior during Rorschach administration. These behavioral codes are included as it is believed that the behaviors exhibited during testing are a reflection of someone's task performance and supplements the actual responses given. This allows generalizations to be made between someone's responses to the cards and their actual behavior.

The R-PAS also recognized that scoring on many of the Rorschach variables differed across countries.[60] Therefore, starting in 1997, Rorschach protocols from researchers around the world were compiled.[61] After compiling protocols for over a decade, a total of 15 adult samples were used to provide a normative basis for the R-PAS. The protocols represent data gathered in the United States, Europe, Israel, Argentina and Brazil.

**Cultural differences**

Comparing North American Exner normative data with data from European and South American subjects showed marked differences in some features, some of which impact important variables, while others (such as the average number of responses) coincide.[62] For instance, texture response is typically zero in European subjects (if interpreted as a need for closeness, in accordance with the system, a European would seem to express it only when it reaches the level of a *craving* for closeness),[63] and there are fewer "good form" responses, to the point where schizophrenia may be suspected if data were correlated to the North American norms.[64] Form is also often the only determinant expressed by European subjects;[65] while color is less frequent than in American subjects, color-form responses are comparatively frequent in opposition to form-color responses; since the latter tend to be interpreted as indicators of a defensive attitude in processing affect, this difference could stem from a higher value attributed to spontaneous expression of emotions.[63]

The differences in form quality are attributable to purely cultural aspects: different cultures will exhibit different "common" objects (French subjects often identify a chameleon in card VIII, which is normally classed as an "unusual" response, as opposed to other animals like cats and dogs; in Scandinavia, "Christmas elves" *(nisser)* is a popular response for card II, and "musical instrument" on card VI is popular for Japanese people),[66] and different

languages will exhibit semantic differences in naming the same object (the figure of card IV is often called a *troll* by Scandinavians and an *ogre* by French people).[67] Many of Exner's "popular" responses (those given by at least one third of the North American sample used) seem to be universally popular, as shown by samples in Europe, Japan and South America, while specifically card IX's "human" response, the crab or spider in card X and one of either the butterfly or the bat in card I appear to be characteristic of North America.[67][68]

Form quality, popular content responses and locations are the only coded variables in the Exner systems that are based on frequency of occurrence, and thus immediately subject to cultural influences; therefore, cultural-dependent interpretation of test data may not necessarily need to extend beyond these components.[69]

The cited language differences mean that it's imperative for the test to be administered in the subject's native language or a very well mastered second language, and, conversely, the examiner should master the language used in the test. Test responses should also not be translated into another language prior to analysis except possibly by a clinician mastering both languages. For example, a bow tie is a frequent response for the center detail of card III, but since the equivalent term in French translates to "butterfly tie", an examiner not appreciating this language nuance may code the response differently from what is expected.[70]

## Inkblots

Below are the ten inkblots printed in *Rorschach Test – Psychodiagnostic Plates*,[71] together with the most frequent responses for either the whole image or the most prominent details according to various authors.

| **Card** | **Popular responses**[72][73][74] | **Comments**[75][76] |
|---|---|---|
|  | **Beck:** bat, butterfly, moth<br>**Piotrowski:** bat (53%), butterfly (29%)<br>**Dana (France):** butterfly (39%) | When seeing **card I**, subjects often inquire on how they should proceed, and questions on what they are allowed to do with the card (e.g. turning it) are not very significant. Being the first card, it can provide clues about how subjects tackle a new and stressful task. It is not, however, a card that is usually difficult for the subject to |

handle, having readily available popular responses.

**Beck:** two humans
**Piotrowski:** four-legged animal (34%, gray parts)
**Dana (France):** animal: dog, elephant, bear (50%, gray)

The red details of **card II** are often seen as blood, and are the most distinctive features. Responses to them can provide indications about how a subject is likely to manage feelings of anger or physical harm. This card can induce a variety of sexual responses.

**Beck:** two humans (gray)
**Piotrowski:** human figures (72%, gray)
**Dana (France):** human (76%, gray)

**Card III** is typically perceived to contain two humans involved in some interaction, and may provide information about how the subject relates with other people (specifically, response latency may reveal struggling social interactions).

**Beck:** animal hide, skin, rug
**Piotrowski:** animal skin, skin rug (41%)
**Dana (France):** animal skin (46%)

**Card IV** is notable for its dark color and its shading (posing difficulties for

depressed subjects), and is generally perceived as a big and sometimes threatening figure; compounded with the common impression of the subject being in an inferior position ("looking up") to it, this serves to elicit a sense of authority. The human or animal content seen in the card is almost invariably classified as male rather than female, and the qualities expressed by the subject may indicate attitudes toward men and authority. Because of this Card IV is often called "The Father Card".[77]

**Beck:** bat, butterfly, moth
**Piotrowski:** butterfly (48%), bat (40%)
**Dana (France):** butterfly (48%), bat (46%)

**Card V** is an easily elaborated card that is not usually perceived as threatening, and typically instigates a "change of pace" in the test, after the previous more challenging

cards. Containing few features that generate concerns or complicate the elaboration, it is the easiest blot to generate a good quality response about.

**Beck:** animal hide, skin, rug
**Piotrowski:** animal skin, skin rug (41%)
**Dana (France):** animal skin (46%)

Texture is the dominant characteristic of **card VI**, which often elicits association related to interpersonal closeness; it is specifically a "sex card", its likely sexual percepts being reported more frequently than in any other card, even though other cards have a greater variety of commonly seen sexual contents.

**Beck:** human heads or faces (top)
**Piotrowski:** heads of women or children (27%, top)
**Dana (France):** human head (46%, top)

**Card VII** can be associated with femininity (the human figures commonly seen in it being described as women or children), and function as a "mother card", where difficulties in responding may

**Beck:** animal: not cat or dog (pink)
**Piotrowski:** four-legged animal (94%, pink)
**Dana (France):** four-legged animal (93%, pink)

be related to concerns with the female figures in the subject's life. The center detail is relatively often (though not popularly) identified as a vagina, which makes this card also relate to feminine sexuality in particular.

People often express relief about **card VIII**, which lets them relax and respond effectively. Similar to card V, it represents a "change of pace"; however, the card introduces new elaboration difficulties, being complex and the first multi-colored card in the set. Therefore, people who find processing complex situations or emotional stimuli distressing or difficult may be uncomfortable with this card.

**Beck:** human (orange)
**Piotrowski:** none
**Dana (France):** none

Characteristic of **card IX** is indistinct form and diffuse, muted chromatic features, creating a general vagueness. There is only one popular response, and it is the least frequent of all cards. Having difficulty with processing this card may indicate trouble dealing with unstructured data, but aside from this there are few particular "pulls" typical of this card.

**Beck:** crab, lobster, spider (blue)
**Piotrowski:** crab, spider (37%, blue), rabbit head (31%, light green), caterpillars, worms, snakes (28%, deep green)
**Dana (France):** none

**Card X** is structurally similar to card VIII, but its uncertainty and complexity are reminiscent of card IX: people who find it difficult to deal with many concurrent stimuli may not particularly like this otherwise pleasant card. Being the last card, it may provide an opportunity for the subject to "sign out" by indicating what

they feel their situation is like, or what they desire to know.

## Usage

### United States

The Rorschach test is used almost exclusively by psychologists. Forensic psychologists use the Rorschach 36% of the time.[78] In custody cases, 23% of psychologists use the Rorschach to examine a child.[79] Another survey found that 124 out of 161 (77%) of clinical psychologists engaging in assessment services utilize the Rorschach,[80] and 80% of psychology graduate programs teach its use.[81] Another study found that its use by clinical psychologists was only 43%, while it was used less than 24% of the time by school psychologists.[78]

During World War II, United States Army Medical Corps chief psychiatrist Dr. Douglas Kelley and psychologist Gustave Gilbert administered the Rorschach test to the 22 defendants in the Nazi leadership group prior to the first Nuremberg trials.[82]

### United Kingdom

Many psychologists in the United Kingdom do not trust its efficacy and it is rarely used.[83] Although skeptical about its scientific validity, some psychologists use it in therapy and coaching "as a way of encouraging self-reflection and starting a conversation about the person's internal world."[23] It is still used, however, by some mental health organisations such as the Tavistock Clinic.[84] In a survey done in the year 2000, 20% of psychologists in correctional facilities used the Rorschach while 80% used the MMPI.[85]

### Japan

Shortly after publication of Rorschach's book, a copy found its way to Japan where it was discovered by one of the country's leading psychiatrists in a second-hand book store. He was so impressed that he started a craze for the test that has never diminished.[86] The Japanese Rorschach Society is by far the largest in the world and the test is "routinely put to a wide range of purposes".[24] In 2012 the test was described, by presenter Jo Fidgen, for BBC Radio 4's programme *Dr Inkblot*, as "more popular than ever" in Japan.[84]

## Controversy

Some skeptics consider the Rorschach inkblot test pseudoscience,[8][87] as several studies suggested that conclusions reached by test administrators since the 1950s were akin to cold reading.[88] In the 1959 edition of *Mental Measurement Yearbook*, Lee Cronbach (former President of the Psychometric Society and American Psychological Association)[89] is quoted in a review: "The test has repeatedly failed as a prediction of practical criteria. There is nothing in the literature to encourage reliance on Rorschach interpretations." In addition, major reviewer Raymond J. McCall writes (p. 154): "Though tens of thousands of Rorschach tests have been administered by hundreds of trained professionals since that time (of a previous review), and while many relationships to personality dynamics and behavior have been hypothesized, the vast majority of these relationships *have never been validated empirically*, despite the appearance of more than 2,000 publications about the test."[90] A moratorium on its use was called for in 1999.[91]

A 2003 report by Wood and colleagues had more mixed views: "More than 50 years of research have confirmed Lee J. Cronbach's (1970) final verdict: that some Rorschach scores, though falling woefully short of the claims made by proponents, nevertheless possess 'validity greater than chance' (p. 636). [...] Its value as a measure of thought disorder in schizophrenia research is well accepted. It is also used regularly in research on dependency, and, less often, in studies on hostility and anxiety. Furthermore, substantial evidence justifies the use of the Rorschach as a clinical measure of intelligence and thought disorder."[92]

**Test materials**

The basic premise of the test is that objective meaning can be extracted from responses to blots of ink which are supposedly meaningless. Supporters of the Rorschach inkblot test believe that the subject's response to an ambiguous and meaningless stimulus can provide insight into their thought processes, but it is not clear *how* this occurs. Also, recent research shows that the blots are not entirely meaningless, and that a patient typically responds to meaningful as well as ambiguous aspects of the blots.[7] Reber (1985) describes the blots as merely ".. the vehicle for the interaction .." between client and therapist, concluding: ".. the usefulness of the Rorschach will depend upon the sensitivity, empathy and insightfulness of the tester totally independently of the Rorschach itself. An intense dialogue about the wallpaper or the rug would do as well provided that both parties believe."[93]

**Illusory and invisible correlations**

In the 1960s, research by psychologists Loren and Jean Chapman showed that at least some of the apparent validity of the Rorschach was due to an illusion.[94][95] At that time, the five signs most often interpreted as diagnostic of homosexuality were 1) buttocks and anuses; 2) feminine clothing; 3) male or female sex organs; 4) human figures without male or female features; and 5) human figures with both male and female features.[95][96] The Chapmans surveyed 32 experienced testers about their use of the Rorschach to diagnose homosexuality. At this time homosexuality was regarded as a psychopathology, and the Rorschach was the most popular projective test.[6] The testers reported that homosexual men had shown the five signs more frequently than heterosexual men.[95][97] Despite these beliefs, analysis of the results showed that heterosexual men were just as likely to report these signs, which were therefore totally ineffective for determining homosexuality.[94][96][97] The five signs did, however, match the guesses students made about which imagery would be associated with homosexuality.[96]

The Chapmans investigated the source of the testers' false confidence. In one experiment, students read through a stack of cards, each with a Rorschach blot, a sign and a pair of "conditions" (which might include homosexuality). The information on the cards was fictional, although subjects were told it came from case studies of real patients.[94] The students reported that the five invalid signs were associated with homosexuality, even though the cards had been constructed so there was no association at all.[96][97] The Chapmans repeated this experiment with another set of cards, in which the association was negative; the five signs were never reported by homosexuals. The students still reported seeing a strong positive correlation.[6][97] These experiments showed that the testers' prejudices could result in them "seeing" non-existent relationships in the data. The Chapmans called this phenomenon "illusory correlation" and it has since been demonstrated in many other contexts.[94][95]

A related phenomenon called "invisible correlation" applies when people fail to see a strong association between two events because it does not match their expectations.[95] This was also found in clinicians' interpretations of the Rorschach. Homosexual men are more likely to see a monster on Card IV or a part-animal, part-human figure in Card

V.[6][96] Almost all of the experienced clinicians in the Chapmans' survey missed these valid signs.[6][94] The Chapmans ran an experiment with fake Rorschach responses in which these valid signs were always associated with homosexuality. The subjects missed these perfect associations and instead reported that invalid signs, such as buttocks or feminine clothing, were better indicators.[94]

In 1992, the psychologist Stuart Sutherland argued that these artificial experiments are easier than the real-world use of the Rorschach, and hence they probably underestimated the errors that testers were susceptible to. He described the continuing popularity of the Rorschach after the Chapmans' research as a "glaring example of irrationality among psychologists".[94]

| | |
|---|---|
| | Wechsler Adult Intelligence Scale |
| | Wechsler Intelligence Scale for Children |
| | Stanford–Binet Intelligence Scales |
| | Woodcock–Johnson Tests of Cognitive Abilities |
| | Kaufman Assessment Battery for Children |
| | Cognitive Assessment System |
| | Differential Ability Scales |
| | Ammons Quick Test |
| | Minnesota Multiphasic Personality Inventory |
| | 16PF Questionnaire |
| | Revised NEO Personality Inventory |
| **Projective tests** | Thematic Apperception Test |
| | Ink blot test (Rorschach test, Holtzman Inkblot Test) |
| | Szondi test |
| | Animal Metaphor Test |
| | Sentence completion tests |
| | Mini-Mental State Examination (MMSE) |
| | Luria-Nebraska neuropsychological battery |
| | Rey-Osterrieth Complex Figure |
| | Delis-Kaplan Executive Function System (D-KEFS) |
| | Mental status examination |
| | Wechsler Memory Scale |
| | Benton Visual Retention Test |
| | Vineland Social Maturity Scale |

TAT

The TAT was developed by American psychologist Murray and lay psychoanalyst Morgan at the Harvard Clinic at Harvard University during the 1930s. Anecdotally, the idea for the TAT emerged from a question asked by one of Murray's undergraduate students, Cecilia Roberts.[3] She reported that when her son was ill, he spent the day making up stories about images in magazines and she asked Murray if pictures could be employed in a clinical setting to explore the underlying dynamics of personality.

Murray wanted to use a measure that would reveal information about the whole person but found the contemporary tests of his time lacking in this regard. Therefore, he created the TAT. The rationale behind the technique is that people tend to interpret ambiguous situations in accordance with their own past experiences and current motivations, which may be conscious or unconscious. Murray reasoned that by asking people to tell a story about a picture, their defenses to the examiner would be lowered as they would not realize the sensitive personal information they were divulging by creating the story.[4]

Murray and Morgan spent the 1930s selecting pictures from illustrative magazines and developing the test. After 3 versions of the test (Series A, Series B, and Series C), Morgan and Murray decided on the final set of pictures, Series D, which remains in use today.[3] Although she was given first authorship on the first published paper about the TAT in 1935, Morgan did not receive authorship credit on the final published instrument. Reportedly, her role in the creation of the TAT was primarily in the selection and editing of the images, but due to the primacy of the name on the original publication the majority of written inquiries about the TAT were addressed to her; since most of these letters included questions that she could not answer, she requested that her name be removed from future authorship.[5]

During the time Murray was developing the TAT he was also involved in Herman Melville studies. The therapeutic technique originally came to him from the "Doubloon chapter" in Moby Dick.[6] In this chapter, multiple characters inspect the same image (a Doubloon), but each character has vastly different interpretations of the imagery—Ahab sees symbols of himself in the coin, while the religiously devout Starbuck sees the Christian Trinity. Other characters provide interpretations of the image that give more insight into the characters themselves based on their interpretations of the imagery. Crew members, including Ahab, project their self perceptions onto the coin which was nailed to the mast. Murray, a lifelong Melvillist, often maintained that all of Melville's oeuvre was for him a TAT.

After World War II, the TAT was adopted more broadly by psychoanalysts and clinicians to evaluate emotionally disturbed patients. Later, in the 1970s, the Human Potential Movement encouraged psychologists to use the TAT to help their clients understand themselves better and stimulate personal growth.

## Procedure[edit]

The TAT is popularly known as the *picture interpretation technique* because it uses a series of provocative yet ambiguous pictures about which the subject is asked to tell a story. The TAT manual provides the administration instructions used by Murray,[7] although these procedures are commonly altered. The subject is asked to tell as dramatic a story as they can for each picture presented, including the following:

- what has led up to the event shown
- what is happening at the moment

- what the characters are feeling and thinking
- what the outcome of the story was

If these elements are omitted, particularly for children or individuals of low cognitive abilities, the evaluator may ask the subject about them directly. Otherwise, the examiner is to avoid interjecting and should not answer questions about the content of the pictures. The examiner records stories verbatim for later interpretation.

The complete version of the test contains 32 picture cards. Some of the cards show male figures, some female, some both male and female figures, some of ambiguous gender, some adults, some children, and some show no human figures at all. One card is completely blank and is used to elicit both a scene and a story about the given scene from the storyteller. Although the cards were originally designed to be matched to the subject in terms of age and gender, any card may be used with any subject. Murray hypothesized that stories would yield better information about a client if the majority of cards administered featured a character similar in age and gender to the client.[7]

Although Murray recommended using 20 cards, most practitioners choose a set of between 8 and 12 selected cards, either using cards that they feel are generally useful, or that they believe will encourage the subject's expression of emotional conflicts relevant to their specific history and situation.[8] However, the examiner should aim to select a variety of cards in order to get a more global perspective of the storyteller and to avoid confirmation bias (i.e., finding only what you are looking for).

Many of the TAT drawings consist of sets of themes such as: success and failure, competition and jealousy, feeling about relationships, aggression, and sexuality.[9] These are usually depicted through picture cards.

## Psychometric characteristics[edit]

Thematic Apperception Tests are meant to evoke an involuntary display of one's subconscious. There is no standardization for evaluating one's TAT responses; each evaluation is completely subjective because each response is unique. Validity and reliability are, consequently, the largest question marks of the TAT.[10] There are trends and patterns, which help identify psychological traits, but there are no distinct responses to indicate different conditions a patient may or may not have. Medical professionals most commonly use it in the early stages of patient treatment. The TAT helps professionals identify a broad range of issues that their patients may suffer from. Even when individual scoring procedures are examined, the absence of standardization or norms make it difficult to compare the results of validity and reliability research across studies. Specifically, even studies using the same scoring system often use different cards, or a different number of cards.[11] Standardization is also absent amongst clinicians, who often alter the instructions and procedures.[12] Murstein[13] explained that different cards may be more or less useful for specific clinical questions and purposes, making the use of one set of cards for all clients impractical.

**SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCE**

**VALUE ADDED COURSE STUDENT DETAILS**

**PSYCHOLOGICAL TESTS- 2ND YEAR STUDENTS**

| S.No | Register No | Students List | Department | SIGNATURE |
|---|---|---|---|---|
| 1 | U13MB266 | SNEHA. T (DOB- 15.01.1996) | Psychiatry | |
| 2 | U13MB267 | SOBICA.D | Psychiatry | |
| 3 | U13MB268 | SOWNDARAVEL.S | Psychiatry | |
| 4 | U13MB269 | SRI SAKTHI PRIYA.N | Psychiatry | |
| 5 | U13MB270 | SRILEKHA.DJ | Psychiatry | |
| 6 | U13MB271 | SRIMUKESH.A | Psychiatry | |
| 7 | U13MB272 | STEPHEN.A | Psychiatry | |
| 8 | U13MB273 | SUGANYA.P | Psychiatry | |
| 9 | U13MB274 | SUGESH CHANDRAN.V | Psychiatry | |
| 10 | U13MB275 | SURIYAKUMAR.G | Psychiatry | |
| 11 | U13MB276 | SUSINDHARAN. K | Psychiatry | |

| | | | | |
|---|---|---|---|---|
| 12 | U13MB277 | SWEDHA.P. | Psychiatry | |
| 13 | U13MB278 | THAMIZHARIVL M. | Psychiatry | |
| 14 | U13MB279 | THAMIZHSELVAN. G | Psychiatry | |
| 15 | U13MB280 | THARSHINI. N | Psychiatry | |

# SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

| Candidate Name | | Assessor Name | |
|---|---|---|---|
| Date of Assessment | | Assessor Position | |

**Various Psychological tests and its application in psychiatry**

**MULTIPLE CHOICE QUESTIONS**

**Course Code: PSYC05**

**I. ANSWER ALL THE QUESTIONS**

1) What is Rorschach's projective test designed to measure?

a) Unconscious intentions.

b) Dreams.

c) Conscious desires.

d) Brain size.

Check your answer

2) Which of the following is not a projective test?

a) Word association test.

b) Rorschach's ink blot test.

c) Thematic apperception test.

d) Sentence completion test.

Check your answer

3) An IQ test does NOT provide which of the following?

a) High test re-test reliability.

b) Good predictor of behaviour.

c) High internal consistency.

d) Good validity.

Check your answer

4) The Weschler adult intelligence scale can be used to assess eligibility for:

a) Housing benefit.

b) Disability allowance.

c) Suicide risk.

d) Special educational needs.

Check your answer

5) Which of the following is true of test-retest reliability?

a) The test is measuring what it claims to be measuring.

b) The test will produce consistent results.

c) The client will improve performance second time\round.

d) All of the above.

Check your answer

6) Which of the following refers to Inter-rater reliability?

a) The degree to which two tests measure the same construct.

b) The degree to which a clinician can predict future behaviour.

c) The degree to which two clinicians will agree on interpretation or scoring of a test.

d) The degree to which the items in the test relate to each other.

Check your answer

7) Which of the following refers to concurrent validity?

a) That two tests are done at the same time.

b) Two or more clinicians agree on the outcome.

c) The items on the test consistently relate to each other.

d) The notion that scores on a test correlate highly with scores from tests that measure the same attribute.

Check your answer

8) Face validity refers to which of the following:

a) Facial expression is used to make a diagnosis.

b) The scale of emotional responding.

c) The notion that an assessment method may appear to be valid simply because it has questions which intuitively seem relevant to the trait or characteristic being measured.

d) A construct is a hypothetical or inferred attribute that may not be directly observable or directly measurable

Check your answer

9) Construct validity is a notion that refers to:

a) The notion that scores on a test correlate highly with scores from tests that measure the same attribute.

b) The level of which a construct is related to other similar measures.

c) The degree to which the items in the test consistently relate to each other.

d) The test will produce consistent results.

Check your answer

\

10) Case formulation is:

a) Using information to draw up a psychological explanation of the client's problems and to develop a plan for therapy.

b) Using the psychiatric diagnostic model of psychopathology.

c) Using previous case studies for diagnosis.

d) Analysing clients behaviour on a case by case basis.

# SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

**Annexure - IV**

**Psychological tests**

**MULTIPLE CHOICE QUESTIONS**

CANDIDATE NAME:- SRILEKHA D J
DATE OF ASSESSMENT - 13.11.2017
UNIVERSITY REG NO:- U13MB2
ASSESSOR NAME:- DR ARUN
Course Code: PSYC05
ASSESSOR POSITION - ASSISTANT PROFESSOR

9/11

**I. ANSWER ALL THE QUESTIONS**

1) What is Rorschach's projective test designed to measure?

- a) Unconscious intentions.
- b) Dreams.
- c) Conscious desires.
- d) Brain size.

Check your answer

2) Which of the following is not a projective test?

- a) Word association test.
- b) Rorschach's ink blot test.
- c) Thematic apperception test.
- d) Sentence completion test.

Check your answer

3) An IQ test does NOT provide which of the following?

- a) High test re-test reliability.
- b) Good predictor of behaviour.

SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

c) High internal consistency.

d) Good validity.

Check your answer

4) The Weschler adult intelligence scale can be used to assess eligibility for:

a) Housing benefit.

b) Disability allowance.

c) Suicide risk.

d) Special educational needs.

Check your answer

5) Which of the following is true of test-retest reliability?

a) The test is measuring what it claims to be measuring.

b) The test will produce consistent results.

c) The client will improve performance second time\round.

d) All of the above.

Check your answer

6) Which of the following refers to inter-rater reliability?

a) The degree to which two tests measure the same construct.

SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

scoring of a test.

d) The degree to which the items in the test relate to each other.

Check your answer

7) Which of the following refers to concurrent validity?

a) That two tests are done at the same time.

b) Two or more clinicians agree on the outcome.

c) The items on the test consistently relate to each other.

d) The notion that scores on a test correlate highly with scores from tests that measure the same attribute.

Check your answer

8) Face validity refers to which of the following:

a) Facial expression is used to make a diagnosis.

b) The scale of emotional responding.

c) The notion that an assessment method may appear to be valid simply because it has questions which intuitively seem relevant to the trait or characteristic being measured.

d) A construct is a hypothetical or inferred attribute that may not be directly observable or directly measurable

Check your answer

9) Construct validity is a notion that refers to:

Scanner

SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

a) The notion that scores on a test correlate highly with scores from tests that measure the same attribute.

b) The level of which a construct is related to other similar measures.

c) The degree to which the items in the test consistently relate to each other.

d) The test will produce consistent results.

Check your answer

10) Case formulation is

a) Using information to draw up a psychological explanation of the client's problems and to develop a plan for therapy.

b) Using the psychiatric diagnostic model of psychopathology.

c) Using previous case studies for diagnosis.

d) Analysing clients behaviour on a case by case basis.

Check your answer

11) Which of the following is an acronym for MMSE?

a) Multi memory state examination.

b) Multiple mental strata evaluation.

c) Mini mental state examination.

d) Meta mental structural evaluation.

Check your answer

nner

SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

c) High internal consistency.

d) Good validity.

Check your answer

4) The Weschler adult intelligence scale can be used to assess eligibility for

a) Housing benefit.

b) Disability allowance.

c) Suicide risk.

d) Special educational needs.

Check your answer

5) Which of the following is true of test-retest reliability?

a) The test is measuring what it claims to be measuring.

b) The test will produce consistent results.

c) The client will improve performance second time\round.

d) All of the above.

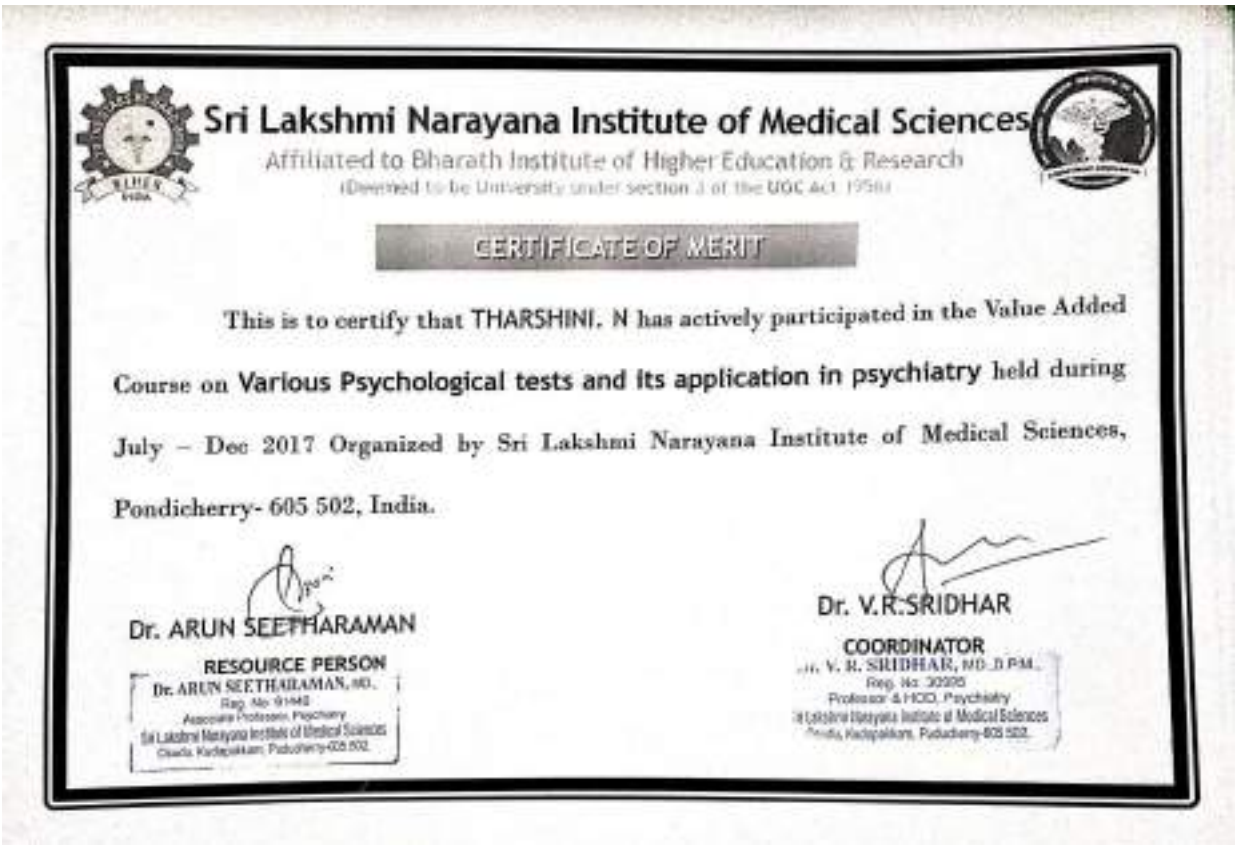
Check your answer

6) Which of the following refers to Inter-rater reliability?

anner

a) The degree to which two tests measure the same construct.

b) The degree to which a clinician can predict future behaviour



Sri Lakshmi Narayana Institute of Medical Sciences

Affiliated to Bharath Institute of Higher Education & Research

(Deemed to be University under section 3 of the UGC Act 1956)

CERTIFICATE OF MERIT

This is to certify that THARSHINI. N has actively participated in the Value Added Course on Various Psychological tests and its application in psychiatry held during July – Dec 2017 Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry- 605 502, India.

Dr. ARUN SEETHARAMAN

RESOURCE PERSON

Dr. ARUN SEETHARAMAN, MD.,

Reg. No: 91443

Associate Professor, Psychiatry

Sri Lakshmi Narayana Institute of Medical Sciences

Osudu, Kadapakkam, Puducherry-605 502.

Dr. V.R.SRIDHAR

COORDINATOR

Dr. V. R. SRIDHAR, M.D., D.P.M.,

Reg. No: 30205

Professor & HOD, Psychiatry

Sri Lakshmi Narayana Institute of Medical Sciences

Osudu, Kadapakkam, Puducherry-605 502.

Scanned by CamScanner

**SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH**

Sri Lakshmi Narayana Institute of Medical Sciences

Affiliated to Bharath Institute of Higher Education & Research

(Deemed to be University under section 3 of the UGC Act 1956)

CERTIFICATE OF MERIT

This is to certify that THAMIZHSELVAN. G has actively participated in the Value Added Course on Various Psychological tests and its application in psychiatry held during July – Dec 2017 Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry- 605 502, India.

Dr. ARUN SEETHARAMAN
RESOURCE PERSON

Dr. V.R. SRIDHAR
COORDINATOR

Scanned by CamScanner

# SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

## Student Feedback Form

Course Name: **PSYCOLOGICAL TESTS**

Subject Code: **PSYC05**

Name of Student: _____ Roll No.: _____

We are constantly looking to improve our classes and deliver the best training to you. Your evaluations, comments and suggestions will help us to improve our performance

| Sl. NO | Particulars | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1 | Objective of the course is clear | | | | | |
| 2 | Course contents met with your expectations | | | | | |
| 3 | Lecturer sequence was well planned | | | | | |
| 4 | Lectures were clear and easy to understand | | | | | |
| 5 | Teaching aids were effective | | | | | |
| 6 | Instructors encourage interaction and were helpful | | | | | |
| 7 | The level of the course | | | | | |
| 8 | Overall rating of the course | 1 | 2 | 3 | 4 | 5 |

**** Rating: 5 – Outstanding; 4 - Excellent; 3 – Good; 2– Satisfactory; 1 - Not-Satisfactory***

Suggestions if any:

Scanned by CamScanner

# SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

Signature

*Date:*

Scanned by CamScanner

# SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

## Student Feedback Form

Course Name: PSYCOLOGICAL TESTS

Subject Code: PSYC05

Name of Student: SOWNDARAVEL.S Roll No.: U13MB268

We are constantly looking to improve our classes and deliver the best training to you. Your evaluations, comments and suggestions will help us to improve our performance

| Sl. NO | Particulars | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1 | Objective of the course is clear | | ✓ | | | |
| 2 | Course contents met with your expectations | | | ✓ | | |
| 3 | Lecturer sequence was well planned | | | | ✓ | |
| 4 | Lectures were clear and easy to understand | | | | | ✓ |
| 5 | Teaching aids were effective | | ✓ | | | |
| 6 | Instructors encourage interaction and were helpful | | | | ✓ | |
| 7 | The level of the course | | | | | ✓ |
| 8 | Overall rating of the course | 1 | 2 | ✓ 3 | 4 | 5 |

** Rating: 5 – Outstanding; 4 - Excellent; 3 – Good; 2– Satisfactory; 1 - Not-Satisfactory*

Suggestions if any:

Signature

Scanned by CamScanner

# SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

## Student Feedback Form

Course Name: PSYCOLOGICAL TESTS

Subject Code: PSYC05

Name of Student: SOBICA D Roll No.: U13MB267

We are constantly looking to improve our classes and deliver the best training to you. Your evaluations, comments and suggestions will help us to improve our performance

| Sl. NO | Particulars | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1 | Objective of the course is clear | | | | ✓ | |
| 2 | Course contents met with your expectations | | | | | ✓ |
| 3 | Lecturer sequence was well planned | | | ✓ | | |
| 4 | Lectures were clear and easy to understand | | | | ✓ | |
| 5 | Teaching aids were effective | | ✓ | | | |
| 6 | Instructors encourage interaction and were helpful | | | ✓ | | |
| 7 | The level of the course | | | | | ✓ |
| 8 | Overall rating of the course | 1 | 2 | 3 | ✓4 | 5 |

** Rating: 5 – Outstanding; 4 - Excellent; 3 – Good; 2– Satisfactory; 1 - Not-Satisfactory*

Suggestions if any:

Sobica

# SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

Date: 30-12-2017

From
Dr.V.R.Sridhar
Professor and Head,
Department of Psychiatry,
Sri Lakshmi Narayana Institute of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

Through Proper Channel

To
The Dean,
Sri Lakshmi Narayana Institute of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

**Sub: Completion of value-added course: Various Psychological tests and its application in psychiatry**

Dear Sir,

With reference to the subject mentioned above, the department has conducted the value-added course titled: **Various Psychological tests and its application in psychiatry**. We solicit your kind action to send certificates for the participants that is attached with this letter. Also, I am attaching the photographs captured during the conduct of the course.

Kind Regards,

Dr. Sridhar

Dr. V. R. SRIDHAR, MD.,D.P.M.,
Reg. No: 30995
Professor & HOD, Psychiatry
Sri Lakshmi Narayana Institute of Medical Sciences
Osudu, Kudapakkam, Puducherry-605 502.

**Encl:** **Certificates**

**Photographs**

Scanned by CamScanner

# SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

**PSYC05 Various Psychological tests and its application in psychiatry- JULY TO DECEMBER -2017**


Scanned by CamScanner

Scanned by CamScanner