

Lecture 1 Psychological Testing and Measurement  
Sunthud Pornprasertmanit

# Overview and History of Psychological Testing

# Overview of Psychological Testing

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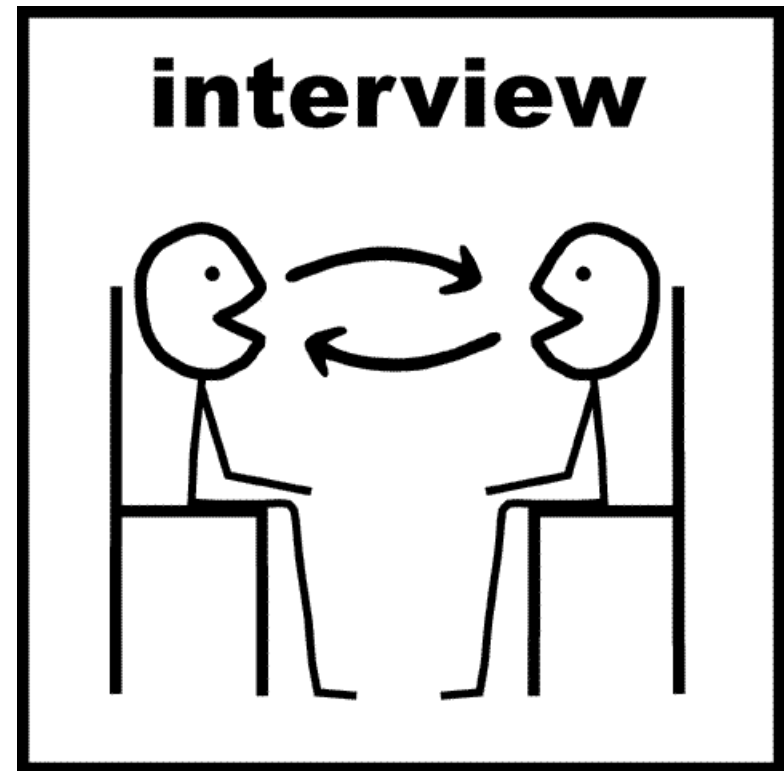
# Your Experience about Testing

- Entrance Examination
- Mastery Testing
- Interview



# What PT Measures?

- Ability Test
- Intelligence Test
- Aptitude Test
- Personality Test
- Neuropsychological Assessment
- Attitude
- Interest
- Value
- Predictive Test



# Context used PT

- Education
- Industrial Personnel
- Military Selection
- Clinical Screening and Testing
- Individual Counseling
- Research
- Forensic Setting
- Project Evaluation



# Formats of PT

- Individual Test
- Paper-and-pencil Test
- Essay Writing
- Interview
- Peer Rating
- Biographical Data
- Assessment Center
- Computer Test
- Computer Adaptive Test

**WebCAPE Computer-Adaptive Placement Exam**

La mayoría de los países latinoamericanos cultivan una fruta muy deliciosa y saludable conocida como el plátano. El plátano es cultivado en los países tropicales. Estos países dividen los plátanos en varias categorías. Los mejores plátanos son exportados a otros países, los mediocres permanecen en el país, y los malos se los dan a los animales.


¿Qué plátanos no son exportados?

**A.** Los mediocres  
**B.** Los malos  
**C.** Los mejores  
**D.** A and B

*Read the selection and mark the letter of the best answer to the question.*

Mark the correct answer and click "Confirm Response"

A  B  C  D



WebCAPE version 2.2 ©Brigham Young University 1998,1999

# What is Psychological Test

- A psychological test is essentially an *objective* and *standardized* measure of a sample of behavior.
  - Empirical Evidence (Diagnostic and Predictive Condition)
  - Uniformity of procedure in administering and scoring test
  - Perfect standardization and objectivity cannot be attained in practice.

# Quality of PT

- Reliability in specified situations
- Validity in specified situations





# Discussion Question

- Why control the use of psychological tests?
  - ทำไมถึงขายแบบทดสอบให้แก่นักจิตวิทยา?
  - ทำไมถึงไม่ยอมเผยแพร่ข้อคำถามไปสู่สาธารณชน?

# Why control the use of PT?

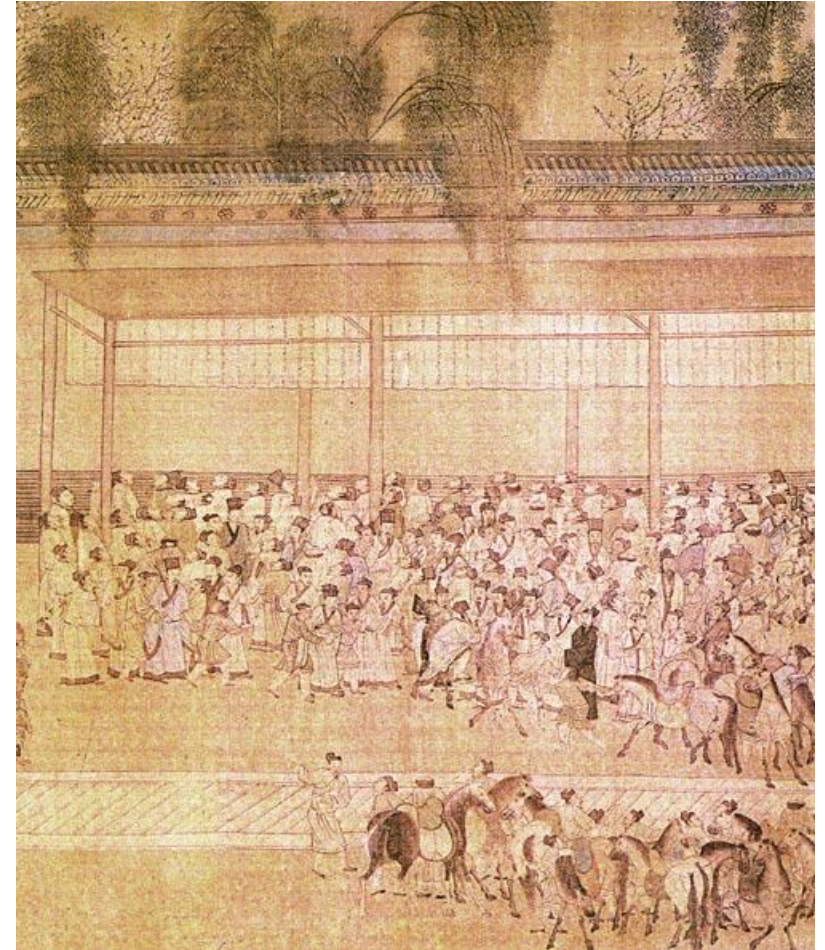
- To ensure that the test is given by a qualified examiner and that the scores are properly used
- To prevent general familiarity with the test content, which would invalidate the test

# History of Psychological Testing

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# Chinese Civil Services Examinations



# Antecedents in Clinical Settings

- How to differentiating the “normal” from the “abnormal”
- Emil Kraepelin classified mental disorder according to their causes, symptoms, and courses.



Emil Kraepelin

# Antecedents in Clinical Settings

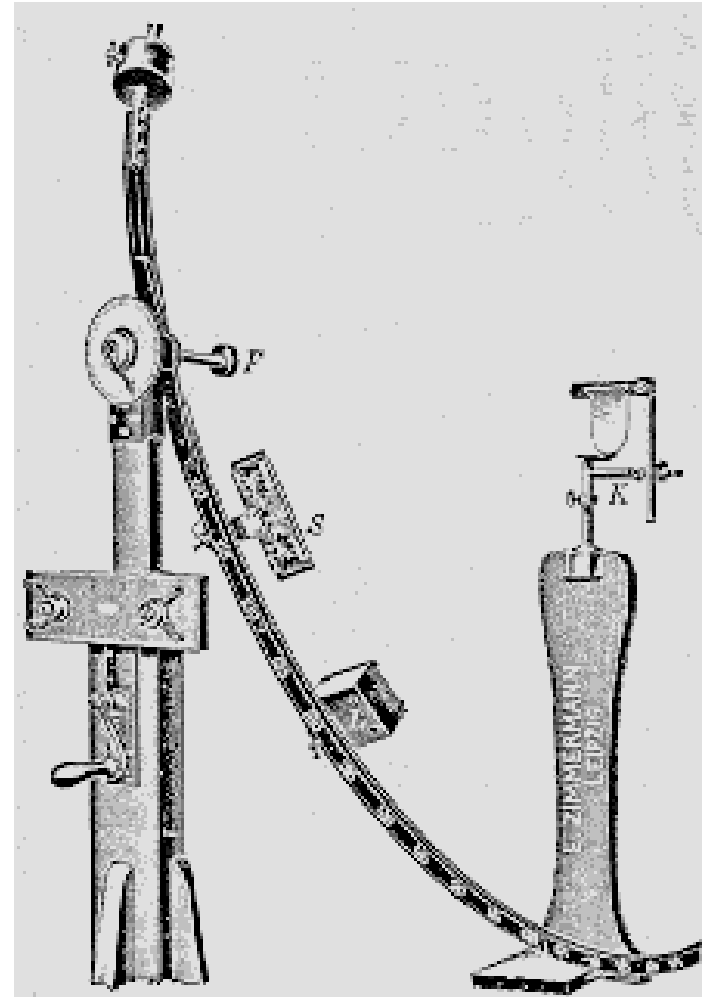
- He proposed differentiation method by patients' characteristics such as distractibility, sensitivity, and memory capacity.
- He introduced free association test with psychiatric patients.



Emil Kraepelin

# Experimental Psychology

- Developing apparatus measuring human capabilities.
- There had little interest in individual different.



# Contributions of Francis Galton

- Interested in measurement of physical and physiological functions
- Developed anthropometric labs
- Believed that sensory discrimination was indicator of person's intellect.



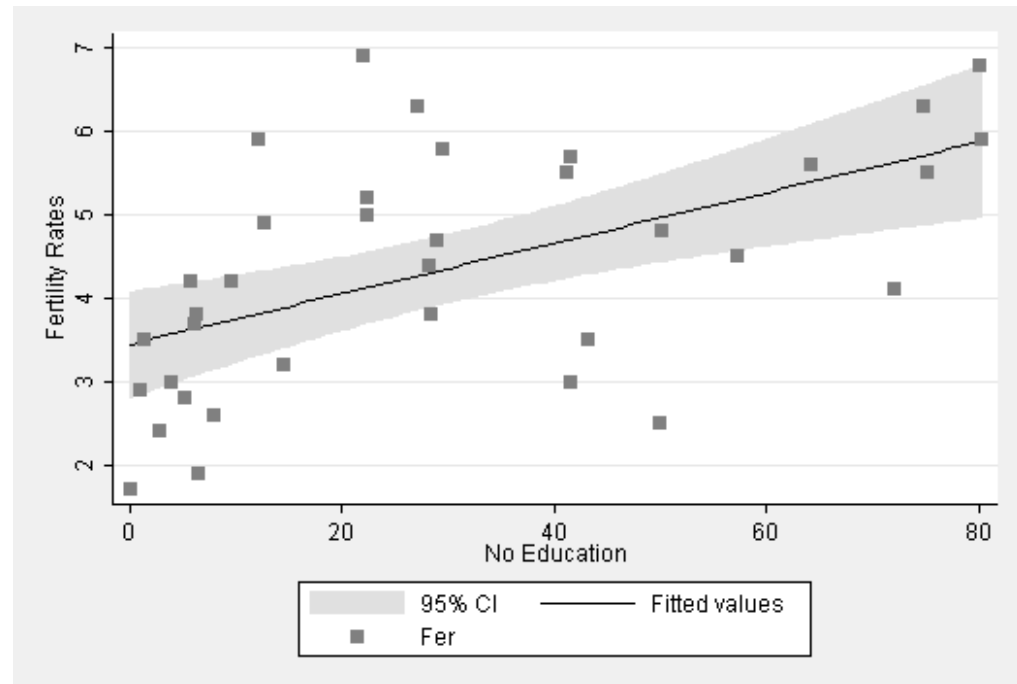
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© Science Museum Library / Science & Society Picture Library  
Francis Galton's First Anthropometric Laboratory at the International French Exhibition, South Kensington, 1884-5.  
Viewed by Guest on 6/1/2007

First Anthropometric Lab  
Francis Galton



# Contributions of Francis Galton

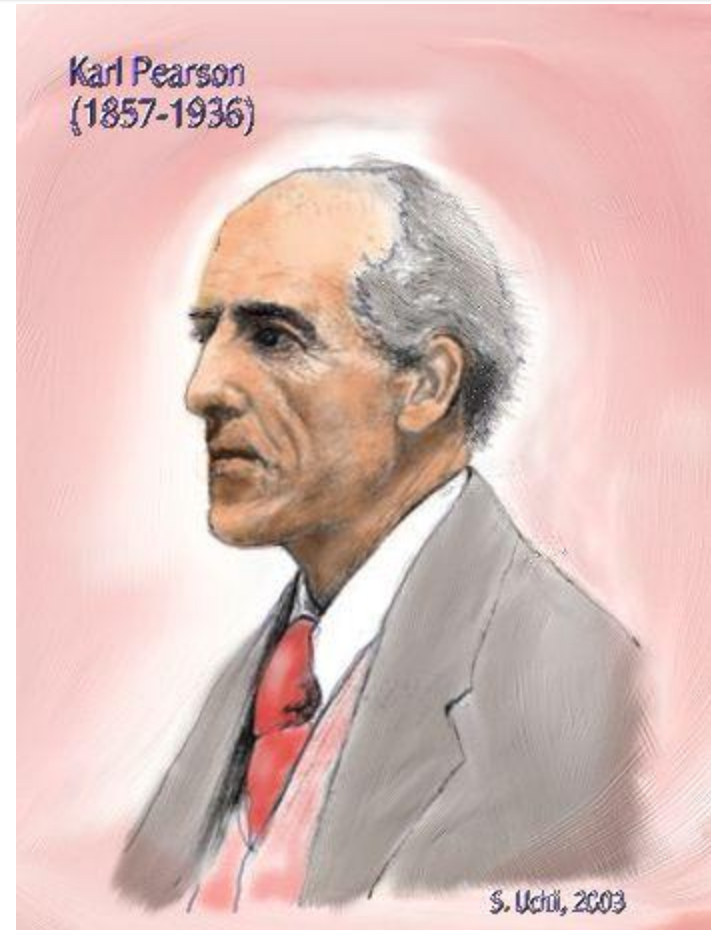
- He also discovered the phenomena of regression and correlation.
- He pioneered in application of rating scale and questionnaire methods.



Regression Line

# Karl Pearson

- Karl Pearson, Galton's student, developed method for computing correlation coefficient.



Karl Pearson

# Hermann Ebbinghaus

- Well-known in research in memory.
- Devised technique known as Ebbinghaus Completion Test



Hermann Ebbinghaus

# Cattell and the Early “Mental Tests”

- He interested in the measurement of individual differences.
- First used term “Mental Test”
- Falsified Galton claim that sensory discrimination was the indicator of person’s intellect.



James Cattell

# Binet and the Rise of Intelligence Test

- How to discriminate retarded children to special education.
- Developed first intelligence test, Binet-Simon Scale.
- Found correlation between score and academic achievement.



Alfred Binet

# Binet and the Rise of Intelligence Test

- The child's score was expressed as mental age, age of normal children whose performance he or she equaled.
- He preferred neutral term "mental level" than "mental age".



Example of items in B-S Scale  
Binet-Simon Scale

# Stanford-Binet IQ Test

- After Binet died, Terman was developed Stanford-Binet IQ Test, the more extensive and psychometrically refined test.
- First used term Intelligence Quotient (IQ)

$$\text{IQ} = \frac{\text{M.A.}}{\text{C.A.}}$$



Lewis Terman

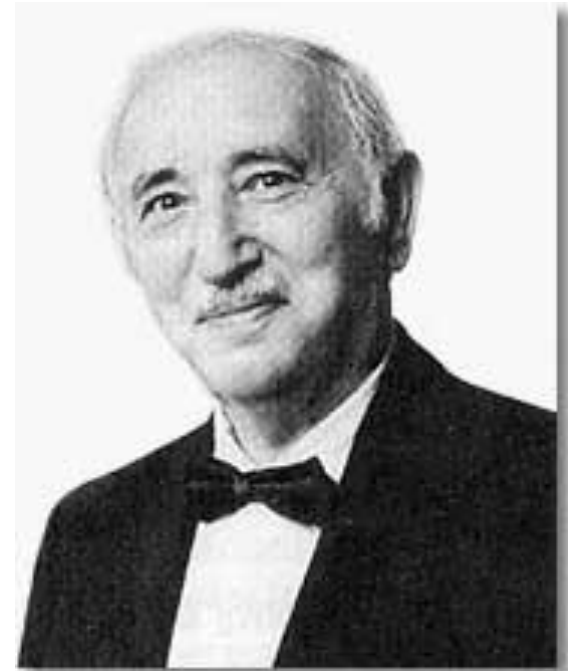
# Stanford-Binet IQ Test





# Wechsler Test

- The most famous intelligence test, now, is Wechsler test.
- Because of disadvantages of Ratio IQ score, Wechsler was first used deviation IQ score.



David Wechsler

# Wechsler Test

WAIS-R Block Design



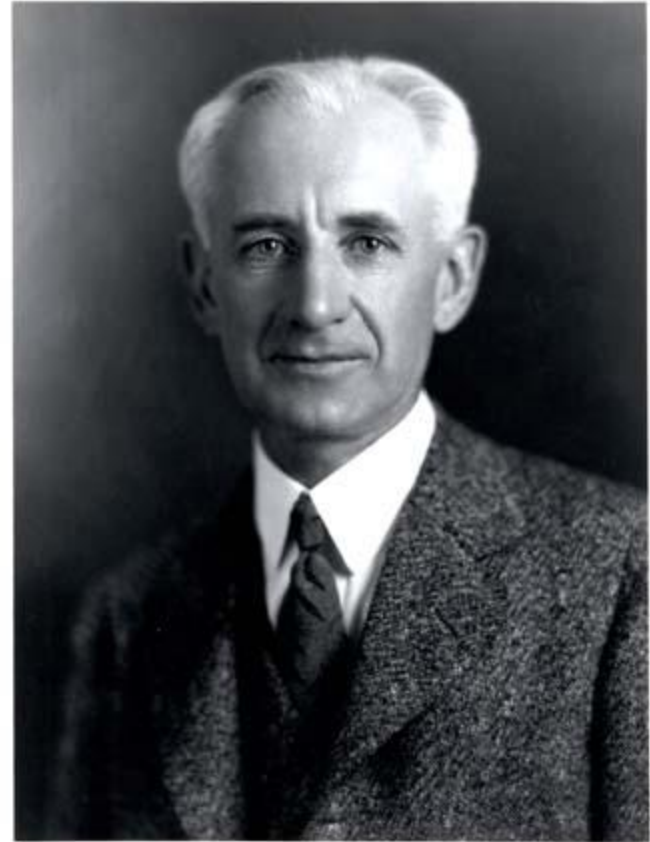
Wechsler Adult Intelligence Scale (WAIS)

Wechsler Intelligence Scale for Children (WISC)

Wechsler Preschool and Primary Scale of Intelligence (WPPSI)

# Group Testing

- In 1917, World War I
- APA consider ways in which psychology might assist in the conduct of the war.



Robert M. Yerkes

# Group Testing

- Army Alpha and Army Beta was tests used for rapid selection and classification recruits.
- They served as model of group intelligence tests



Army Alpha and Beta

# Discussion Question

- Discuss advantages and disadvantages of individual testing and group testing
- What is intelligence, in common sense and academic perspective?

# Aptitude Test

- Psychologists came to recognize that the term “intelligence test” was a misnomer.
- Special aptitude tests were developed particularly for use in vocational counseling, selection and classification.



# Aptitude Test

- After used factor analysis, developed by Spearman, to intelligence test, there are a lot of independent factors.
- Multiple Aptitude Batteries was group of tests that provided intra-individual analysis.

UNVERIFIED WINDOWS CAT-ASVAB TEST SCORE REPORT

Testing Site ID:	<u>521992</u>	Service:	<u>NAVY</u>
Testing Session:	Date <u>2006/03/23</u>	Starting Time:	<u>14:30</u>
Applicant: Name:	_____	SSN:	_____
Test Form:	<u>D2E</u>	Test Type:	<u>Initial</u>

Standard Scores:	GS	AR	WK	PC	MK	EI	AS	MC	AO	VE
	63	59	60	52	56	81	64	62	52	58

COMPOSITE SCORES:

Army:	GT	CL	CO	EL	FA	GM	MM	OF	SC	ST
	118	121	128	130	127	132	134	129	128	125
Air Force:	M	A	G	E						
	91	76	83	96						
Navy/CG:	GT	EL	BEE	ENG	MEC	MEC2	NUC	OPS	HM	ADM
	117	259	234	120	185	173	235	225	177	114
Marine:	MM	GT	EL	CL						
	139	122	134	115						

AFQT Percentile Score: 80

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| NOTE: This report is NOT valid for enlistment purposes. |

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Armed Services Vocational  
Aptitude Battery

# Standardized Achievement Tests

- Thorndike, one of the psychologists who develop standardized tests for measuring the outcomes of school instructions
- In 1923, the first publication of Stanford Achievement Test

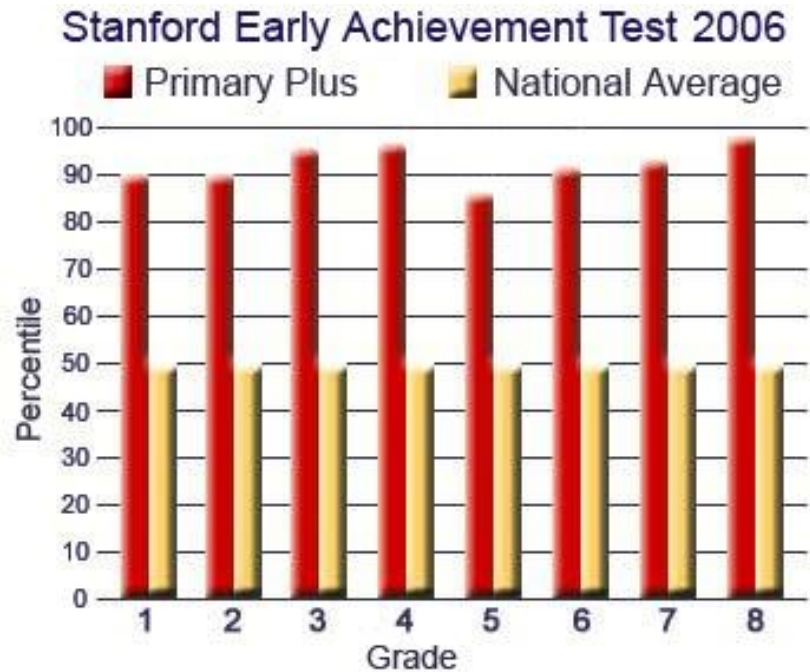


Edwards L. Thronnike



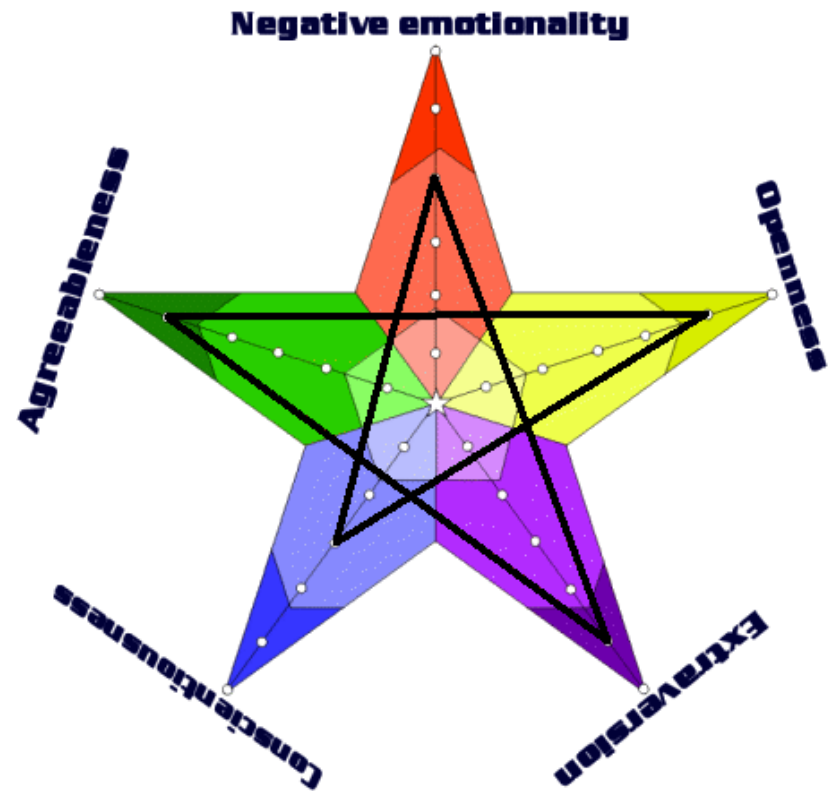
# Standardized Achievement Tests

- Another noteworthy testing program is the College Entrance Examination Board (CEEB), later changed to Educational Test Service (ETS).



# Assessment of Personality

- The designation “personality test” most often refers to measures of such characteristics as emotional states, interpersonal relations, motivation, interests and attitudes.



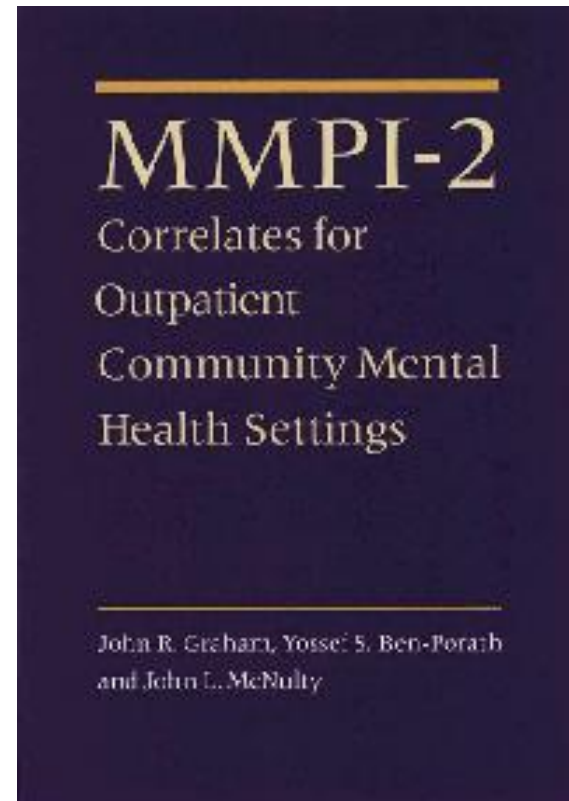
# Assessment of Personality

- The prototype of the personality questionnaire is the Personal Data Sheet developed by Woodworth in WW I, identified seriously disturbed men.



# Assessment of Personality

- Most successful personality inventories was the Minnesota Multiphasic Personality Inventories (MMPI).



# Assessment of Personality

- Situational tests was developed to assess personality.
- The first application was developed for assessing behaviors such as cheating, lying, stealing, cooperativeness, and persistence.



# Assessment of Personality

- In projective tests, clients is given a relatively unstructured task that permits wide latitude in its solution.
- The assumption is the individual will project her or his characteristic modes of response into such a task.



Rorschach Inkblot Test

# Assessment of Personality

- This assumption likes free association test and sentence completion test.



Thematic Apperception Test

# Discussion Question

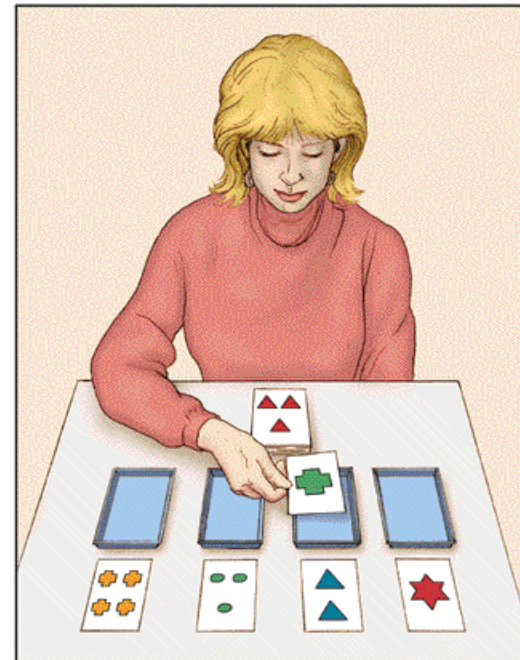
- Discuss advantages and disadvantages of self-report, situational test and projective techniques.



# Neuropsychological Assessment

- The study of brain-behavior relationship was known as neuropsychology.
- Organicity is the relationship of brain damage and behavioral deficits.

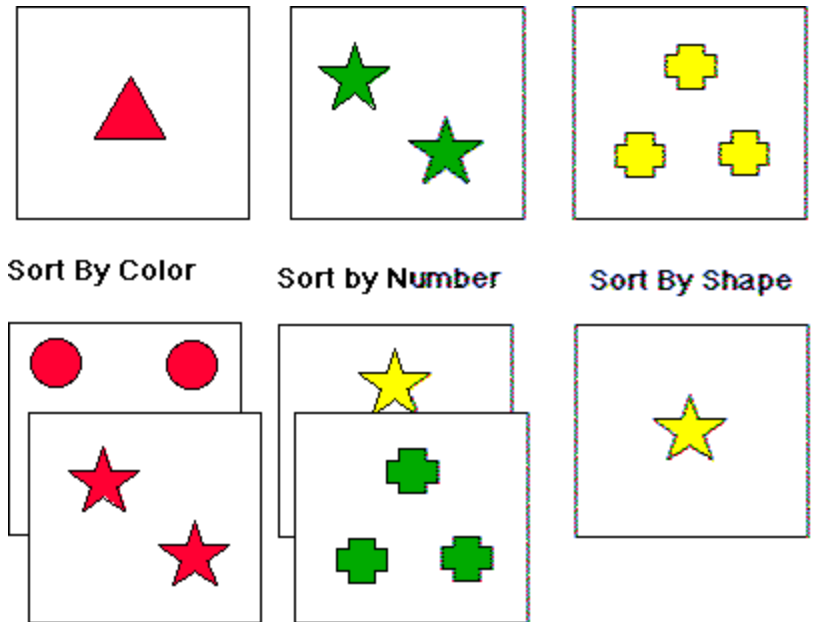
► Wisconsin Card Sorting Test



Wisconsin Card Sorting Test

# Neuropsychological Assessment

- This kind of tests was frequently revised because of advancement in neuropsychology knowledge.



Wisconsin Card Sorting Test

# Print Resources: Published Tests

