Psychological Testing

Table of Contents

Cover
Brief Contents
Contents
Preface
Chapter 1: Implementation and Attributes of Psychological Testing

Topic 1A: The Nature and Uses of Psychological Testing

The Consequences of Testing

Case Exhibit 1.1: True-Life Vignettes of Testing

Definition of a Test

Further Distinctions in Testing

Types of Tests

Uses of Testing

Factors Influencing the Soundness of Testing

Standardized Procedures in Test Administration

Desirable Procedures of Test Administration

Sensitivity to Disabilities

Desirable Procedures of Group Testing

Influence of the Examiner

The Importance of Rapport

Examiner Sex, Experience, and Race

Background and Motivation of the Examinee

Test Anxiety

Motivation to Deceive

Topic 1B: Ethical and Social Implications of Testing
# Table of Contents

The Rationale for Professional Testing Standards  
- Case Exhibit 1.2: Ethical and Professional Quandaries in Testing

Responsibilities of Test Publishers  
- Publication and Marketing Issues  
- Competence of Test Purchasers

Responsibilities of Test Users  
- Best Interests of the Client  
- Confidentiality and the Duty to Warn  
- Expertise of the Test User  
- Case Exhibit 1.3: Overzealous Interpretation of the MMPI  
- Informed Consent  
- Obsolete Tests and the Standard of Care  
- Responsible Report Writing  
- Communication of Test Results  
- Consideration of Individual Differences

Testing of Cultural and Linguistic Minorities  
- Background and Historical Notes  
- The Impact of Cultural Background on Test Results

Unintended Effects of High-Stakes Testing

Reprise: Responsible Test Use

## Chapter 2: Origins of Psychological Testing

### Topic 2A: The Origins of Psychological Testing  
- Rudimentary Forms of Testing in China in 2200 b.c.  
- Physiognomy, Phrenology, and the Psychograph

### The Brass Instruments Era of Testing  
- Galton and the First Battery of Mental Tests  
- Cattell Imports Brass Instruments to the United States

### Rating Scales and their Origins

Changing Conceptions of Mental Retardation in the 1800s  
- Esquirol and Diagnosis in Mental Retardation  
- Seguin and Education of Individuals with Mental Retardation

Influence of Binet's Early Research on his Test
Table of Contents

Binet and Testing for Higher Mental Processes
The Revised Scales and the Advent of IQ

Topic 2B: Testing from the Early 1900s to the Present
Early Uses and Abuses of Tests in the United States
  First Translation of the Binet-Simon Scale
  The Binet-Simon and Immigration
  Testing for Giftedness: Leta Stetter Hollingworth
  The Stanford-Binet: The Early Mainstay of IQ

Group Tests and the Classification of Wwi Army Recruits
  The Army Alpha and Beta Examinations

Early Educational Testing
The Development of Aptitude Tests
Personality and Vocational Testing after WWI
The Origins of Projective Testing
The Development of Interest Inventories
The Emergence of Structured Personality Tests
The Expansion and Proliferation of Testing
Evidence-Based Practice and Outcomes Assessment

Chapter 3: Norms and Reliability
Topic 3A: Norms and Test Standardization
  Raw Scores
  Essential Statistical Concepts
    Frequency Distributions
    Measures of Central Tendency
    Measures of Variability
    The Normal Distribution
    Skewness
  Raw Score Transformations
    Percentiles and Percentile Ranks
    Standard Scores
    T Scores and Other Standardized Scores
# Table of Contents

Normalizing Standard Scores  
Stanines, Stens, and C Scale  
A Summary of Statistically Based Norms  

Selecting a Norm Group  
Age and Grade Norms  
Local and Subgroup Norms  
Expectancy Tables  

Criterion-Referenced Tests  

**Topic 3B: Concepts of Reliability**  
Classical Test Theory and the Sources of Measurement Error  

Sources of Measurement Error  
  - Item Selection  
  - Test Administration  
  - Test Scoring  
  - Systematic Measurement Error  

Measurement Error and Reliability  

The Reliability Coefficient  
The Correlation Coefficient  
The Correlation Coefficient as a Reliability Coefficient  

Reliability as Temporal Stability  
  - Test-Retest Reliability  
  - Alternate-Forms Reliability  

Reliability as Internal Consistency  
  - Split-Half Reliability  
  - The Spearman-Brown Formula  
  - Critique of the Split-Half Approach  
  - Coefficient Alpha  
  - The Kuder-Richardson Estimate of Reliability  
  - Interscorer Reliability  
  - Which Type of Reliability is Appropriate?  

Item Response Theory  
  - Item Response Functions
Table of Contents

Information Functions
Invariance in IRT

The New Rules of Measurement

Special Circumstances in the Estimation of Reliability
  Unstable Characteristics
  Speed and Power Tests
  Restriction of Range
  Reliability of Criterion-Referenced Tests

The Interpretation of Reliability Coefficients

Reliability and the Standard Error of Measurement
  Computing the Standard Error of Measurement
  The SEM and Individual Test Scores
  The SEM and Differences between Scores

Chapter 4: Validity and Test Construction

  Topic 4A: Basic Concepts of Validity
    Validity: A Definition
    Content Validity
      Quantification of Content Validity
      Face Validity
    Criterion-Related Validity
      Characteristics of a Good Criterion
      Concurrent Validity
      Predictive Validity
      Validity Coefficient and the Standard Error of the Estimate
      Decision Theory Applied to Psychological Tests

  Construct Validity

  Approaches to Construct Validity
    Test Homogeneity
    Appropriate Developmental Changes
    Theory-Consistent Group Differences
    Theory-Consistent Intervention Effects
    Convergent and Discriminant Validation
Table of Contents

Factor Analysis
Classification Accuracy

Extravalidity Concerns and the Widening Scope of Test Validity
Unintended Side Effects of Testing
The Widening Scope of Test Validity
Utility: The Last Horizon of Test Validity

Topic 4B: Test Construction
Defining the Test
Selecting a Scaling Method
Levels of Measurement

Representative Scaling Methods
Expert Rankings
Method of Equal-Appearing Intervals
Method of Absolute Scaling
Likert Scales
Guttman Scales
Method of Empirical Keying
Rational Scale Construction (Internal Consistency)

Constructing the Items
Initial Questions in Test Construction
Table of Specifications
Item Formats

Testing the Items
Item-Difficulty Index
Item-Reliability Index
Item-Validity Index
Item-Characteristic Curves
Item-Discrimination Index
Reprise: The Best Items

Revising the Test
Cross Validation
Validity Shrinkage
Chapter 5: Intelligence and Achievement: Theories and Tests

Topic 5A: Theories of Intelligence and Factor Analysis

Definitions of Intelligence
- Expert Definitions of Intelligence
- Case Exhibit 5.1: Learning and Adaptation as Core Functions of Intelligence
- Layperson and Expert Conceptions of Intelligence

A primer of Factor Analysis
- The Correlation Matrix
- The Factor Matrix and Factor Loadings
- Geometric Representation of Factor Loadings
- The Rotated Factor Matrix
- The Interpretation of Factors
- Issues in Factor Analysis

Galton and Sensory Keenness
Spearman and the g Factor
Thurstone and the Primary Mental Abilities
Cattell-Horn-Carroll (CHC) Theory
- Definitions of CHC Broad Ability Factors
- Utility of CHC Theory

Guilford and The Structure-of-Intellect Model
Planning, Attention, Simultaneous, and Successive (Pass) Theory
Information Processing Theories of Intelligence
Gardner and the Theory of Multiple Intelligences
Sternberg and the Triarchic Theory of Successful Intelligence

Topic 5B: Individual Tests of Intelligence and Achievement

Orientation to Individual Intelligence Tests
Table of Contents

The Wechsler Scales of Intelligence
   Origins of the Wechsler Tests
   General Features of the Wechsler Tests

The Wechsler Subtests: Description and Analysis
   Information
   Digit Span
   Vocabulary
   Arithmetic
   Comprehension
   Similarities
   LetterNumber Sequencing
   Picture Completion
   Picture Concepts
   Block Design
   Matrix Reasoning
   Object Assembly
   Coding
   Symbol Search
   Cancellation
   Visual Puzzles
   Figure Weights

Wechsler Adult Intelligence Scale-IV
   WAIS-IV Standardization
   Reliability
   Validity

Wechsler Intelligence Scale for Children-IV

Stanford-Binet Intelligence Scales: Fifth Edition
   The SB5 Model of Intelligence
   Routing Procedure and Tailored Testing
   Special Features of the SB5
   Standardization and Psychometric Properties of the SB5

Detroit Tests of Learning Aptitude-4

The Cognitive Assessment System-II
# Table of Contents

**Kaufman Brief Intelligence Test-2 (KBIT-2)**

**Individual Tests of Achievement**
- Kaufman Test of Educational Achievement-II (KTEA-II)

**Nature and Assessment of Learning Disabilities**
- The Federal Definition of Learning Disabilities
- The National Joint Committee on Learning Disabilities Definition
- The New Face of Learning Disabilities: Response to Intervention
- Essential Features of Learning Disabilities
- Causes and Correlates of Learning Disabilities
- Achievement Tests in LD Assessment: A Final Word

## Chapter 6: Ability Testing: Group Tests and Controversies

**Topic 6A: Group Tests of Ability and Related Concepts**

**Nature, Promise, and Pitfalls of Group Tests**

**Group Tests of Ability**
- Multidimensional Aptitude Battery-II (MAB-II)
- A Multilevel Battery: The Cognitive Abilities Test (CogAT)
- Raven's Progressive Matrices (RPM)
- Perspective on Culture-Fair Tests

**Multiple Aptitude Test Batteries**
- The Differential Aptitude Test (DAT)
- The General Aptitude Test Battery (GATB)
- The Armed Services Vocational Aptitude Battery (ASVAB)

**Predicting College Performance**
- The Scholastic Assessment Test (SAT)
- The American College Test (ACT)

**Postgraduate Selection Tests**
- Graduate Record Exam (GRE)
- Medical College Admission Test (MCAT)
- Law School Admission Test (LSAT)

**Educational Achievement Tests**
- Iowa Tests of Basic Skills (ITBS)
- Metropolitan Achievement Test (MAT)
Table of Contents

Lexile Measures
Tests of General Educational Development (GED)
Additional Group Standardized Achievement Tests

Topic 6B: Test Bias and Other Controversies

The Question of Test Bias
  The Test-Bias Controversy
  Criteria of Test Bias and Test Fairness
  The Technical Meaning of Test Bias: A Definition
  Bias in Content Validity
  Bias in Predictive or Criterion-Related Validity
  Bias in Construct Validity
  Reprise on Test Bias
  Case Exhibit 6.1: The Impact of Culture on Testing Bias

Social Values and Test Fairness
  Unqualified Individualism
  Quotas
  Qualified Individualism
  Reprise on Test Fairness

Genetic and Environmental Determinants of Intelligence
  Genetic Contributions to Intelligence
  Environmental Effects: Impoverishment and Enrichment
  Teratogenic Effects on Intelligence and Development
  Effects of Environmental Toxin on Intelligence

Origins and Trends in Racial IQ Differences
  Early Studies of African American and White IQ Differences
  The Genetic Hypothesis for Race Differences in IQ
  Tenability of the Genetic Hypothesis
  Recent Trends in Race Differences in IQ

Age Changes in Intelligence
  Early Cross-Sectional Research
  Sequential Studies of Intelligence
  Age and the Fluid/Crystallized Distinction

Generational Changes in IQ Scores
Table of Contents

Chapter 7: Assessing Special Populations

Topic 7A: Infant and Preschool Assessment

Assessment of Infant Capacities
- Neonatal Behavioral Assessment Scale (NBAS)
- Bayley-III
- Devereux Early Childhood Assessment-Clinical Form (DECA-C)

Additional Measures of Infant Capacity

Assessment of Preschool Intelligence
- Differential Ability Scales-II
- Wechsler Preschool and Primary Scale of Intelligence-IV (WPPSI-IV)
- Stanford-Binet Intelligence Scales for Early Childhood

Practical Utility of Infant and Preschool Assessment
- Predictive Validity of Infant and Preschool Tests
- Practical Utility of Infant Scales
- Fagan Test of Infant Intelligence (FTII)

Screening for School Readiness
- Qualities of a Good Preschool Screening Instrument
- Instruments for Preschool Screening

Dial-4
- Denver II
- Home
- Background and Description
- Technical Features

Topic 7B: Testing Persons with Disabilities

Origins of Tests For Special Populations

Nonlanguage Tests
- Leiter International Performance Scale-Revised
- Human Figure Drawing Tests
- Hiskey-Nebraska Test of Learning Aptitude
- Test of Nonverbal Intelligence-4 (TONI-4)

Nonreading and Motor-Reduced Tests
- Case Exhibit 7.1: The Challenge of Assessment in Cerebral Palsy
**Table of Contents**

Peabody Picture Vocabulary Test-IV  
Testing Persons with Visual Impairments  
Testing Individuals Who are Deaf or Hard of Hearing  
Assessment of Adaptive Behavior in Intellectual Disability  
  - Scales of Independent Behavior-Revised  
  - Inventory for Client and Agency Planning (ICAP)  
  - Additional Measures of Adaptive Behavior  
Assessment of Autism Spectrum Disorders

**Chapter 8: Foundations of Personality Testing**  
Topic 8A: Theories of Personality and Projective Techniques  
  - Personality: an Overview  
  - Psychoanalytic Theories of Personality  
    - Origins of Psychoanalytic Theory  
    - The Structure of the Mind  
    - The Role of Defense Mechanisms  
    - Assessment of Defense Mechanisms and Ego Functions  
  - Type Theories of Personality  
    - Type A Coronary-Prone Behavior Pattern  
  - Phenomenological Theories of Personality  
    - Origins of the Phenomenological Approach  
    - Carl Rogers, Self-Theory, and the Q-Technique  
  - Behavioral and Social Learning Theories  
  - Trait Conceptions of Personality  
    - Cattel's Factor-Analytic Trait Theory  
    - The Five-Factor Model of Personality  
    - Comment on the Trait Concept  
  - The Projective Hypothesis  
    - A Classification of Projective Techniques  
  - Association Techniques  
    - The Rorschach  
    - Comment on the Rorschach
# Table of Contents

## Completion Techniques
- Sentence Completion Tests
- Rotter Incomplete Sentences Blank

## Construction Techniques
- The Thematic Apperception Test (TAT)
- The Picture Projective Test
- Children's Apperception Test
- Other Variations on the TAT

## Expression Techniques
- The Draw-A-Person Test
- The House-Tree-Person Test (H-T-P)
- Case Exhibit 8.1: Projective Tests as Ancillary to the Interview

### Topic 8B: Self-Report and Behavioral Assessment of Psychopathology

#### Theory-Guided Inventories
- Personality Research Form
- State-Trait Anxiety Inventory

#### Factor-Analytically Derived Inventories
- Eysenck Personality Questionnaire
- Comrey Personality Scales

#### Criterion-Keyed Inventories
- Minnesota Multiphasic Personality Inventory-2 (MMPI-2)
- MMPI-2 Interpretation
- Technical Properties of the MMPI-2
- Millon Clinical Multiaxial Inventory-III (MCMI-III)
- Personality Inventory for Children-2 (PIC-2)

#### Behavioral Assessment

#### Behavior Therapy and Behavioral Assessment
- Exposure-Based Methods
- Cognitive Behavior Therapies
- Self-Monitoring Procedures

#### Structured Interview Schedules

#### Assessment by Systematic Direct Observation
Table of Contents

Analogue Behavioral Assessment
Ecological Momentary Assessment

Chapter 9: Evaluation of Normality and Individual Strengths

Topic 9A: Assessment Within the Normal Spectrum

  Broad Band Tests of Normal Personality
  Myers-Briggs Type Indicator (MBTI)
  California Psychological Inventory (CPI)
  Neo Personality Inventory-Revised (NEO PI-R)
  Stability and Change in Personality
    Personality Stability and Change in Middle and Late Life

The Assessment of Moral Judgment

  The Moral Judgment Scale
  Stages of Moral Development
  Critique of the Moral Judgment Scale
  The Defining Issues Test

The Assessment of Spiritual and Religious Concepts

  Challenges and Purposes of Religious and Spiritual Assessment
  Historical Overview on Spiritual and Religious Assessment
  Religion as Quest
  The Spiritual Well-Being Scale
  The Assessment of Spirituality and Religious Sentiments (ASPIRES) Scale
  The Faith Maturity Scale

Topic 9B: Positive Psychological Assessment

  Assessment of Creativity
    Creativity as Process
    Creativity as Personal Characteristics
    Creativity as Product
    Comment on Creativity Tests
  Measures of Emotional Intelligence
  Assessment of Optimism
  Assessment of Gratitude
Table of Contents

Sense of Humor: Self-Report Measures

Chapter 10: Neuropsychological Testing

  Topic 10A: Neurobiological Concepts and Behavioral Assessment

    The Human Brain: An Overview
      Cerebrospinal Fluid and the Ventricular System
      The Vascular System of the Brain

    Structures and Systems of the Brain
      Corpus Callosum
      Cerebral Cortex

    Survival Systems: The Hindbrain and Midbrain

    Attentional Systems

    Motor/Coordination Systems

    Memory Systems

    Limbic System

    Language Functions and Cerebral Lateralization
      Language Functions of the Left Hemisphere
      Specialized Functions of the Right Hemisphere

    Visual System

    Executive Functions

Neuropathology of Adulthood and Aging

  Traumatic Brain Injury
  Neoplastic Disease (Tumor)
  Chronic Alcohol Abuse
  Normal Pressure Hydrocephalus
  Alzheimer's Disease
  Vascular Dementia (Stroke)
  Parkinson's Disease (PD)

Behavioral Assessment of Neuropathology

  Assessment of Mental Status
  Behavioral Rating Scales

  Topic 10B: Neuropsychological Tests, Batteries, and Screening
Table of Contents

Tools

A Conceptual Model of Brain-Behavior Relationships

Assessment of Sensory Input
  Sensory-Perceptual Exam
  Finger Localization Test

Measures of Attention and Concentration
  Test of Everyday Attention
  Continuous Performance Test

Tests of Learning and Memory
  Wechsler Memory Scale-IV
  Rey Auditory Verbal Learning Test
  Fuld Object-Memory Evaluation
  Rivermead Behavioral Memory Test
  Wide Range Assessment of Memory and Learning-2
  Additional Tests of Learning and Memory

Assessment of Language Functions
  Clinical Examination for Aphasia
  Screening and Comprehensive Diagnostic Tests for Aphasia

Tests of Spatial and Manipulatory Ability
  Design Copying Tests
  Assembly Tests

Assessment of Executive Functions

Assessment of Motor Output

Test Batteries in Neuropsychological Assessment
  The Luria-Nebraska Neuropsychological Battery
  The Neuropsychological Assessment Battery (NAB)
  Baseline Testing With Brief Neuropsychological Test Batteries

Screening for Alcohol use Disorders
  Mini-Mental State Exam

Chapter 11: Industrial, Occupational, and Career Assessment
  Topic 11A: Industrial and Organizational Assessment
Table of Contents

The Role of Testing in Personnel Selection
  Complexities of Personnel Selection
  Approaches to Personnel Selection

Autobiographical Data
  The Nature of Biodata
  The Validity of Biodata

The Employment Interview

Cognitive Ability Tests
  Wonderlic Personnel Test-Revised
  Bennett Mechanical Comprehension Test
  Minnesota Clerical Test

Personality Tests

Paper-and-Pencil Integrity Tests
  Validity of Integrity Tests

Work Sample and Situational Exercises
  The In-Basket Test
  Assessment Centers

Appraisal of Work Performance

Approaches to Performance Appraisal
  Performance Measures
  Personnel Data: Absenteeism
  Peer Ratings and Self-Assessments
  Supervisor Rating Scales

Sources of Error in Performance Appraisal
  Halo Effect
  Rater Bias
  Criterion Contamination
  Guidelines for Performance Appraisal

Topic 11B: Assessment for Career Development in a Global Economy

Career Development and the Functions of Work

Origins of Career Development Theories

Theory of Person-Environment Fit
# Table of Contents

Theory of Person-Environment Correspondence  
Stage Theories of Career Development  
Social Cognitive Approaches  
O*NET in Career Development  
Inventories for Career Assessment  
  Career Beliefs Inventory  
Inventories for Interest Assessment  
  Strong Interest Inventory-Revised (SII-R)  
  Evaluation of the SII-R  
  Vocational Preference Inventory  
  Self-Directed Search  
  Campbell Interest and Skill Survey  

Appendix A: Major Landmarks in the History of Psychological Testing  
Appendix B: Standard and Standardized-Score Equivalents of Percentile Ranks in a Normal Distribution  

Glossary  
References  
Name Index  
Subject Index