NEUROPSYCHOLOGICAL TESTING: APPLICATIONS FOR THE DIAGNOSIS OF BOTH ORGANIC (BRAIN DAMAGE/OBS) AND FUNCTIONAL (PSYCHOLOGICAL) DISORDERS

I. Introduction to Clinical Neuropsychology
  A. Pre-Scientific
    1. Descartes
    2. Spurzheimer/Gall
  B. Scientific
    1. Goldstein
    2. Luria
    3. Halstead/Reltan
    4. Golden
    5. Promise for the Future

II. Introduction to the Nervous System
  A. Basic Neuroanatomy
    1. Cell Neurons
    2. Neural Structure
      a. Soma
      b. Dendrites
      c. Axons
      d. Synapses
    3. Neural Functioning
      a. Chemical
      b. Electrical
  B. Nervous System Structure
    1. Nerves and Systems
      a. Anatomical vs. Behavioral Systems
    2. Peripheral Nervous System
      a. Sensory
      b. Motor
    3. Central Nervous System
      a. Spinal Cord
      b. Brain
        (1). Brain Stem
          (a). Medulla
          (b). Pons
          (c). Midbrain
          (d). Diencephalon
        (2). Cerebral Cortex
          (a). Occipital Lobe
          (b). Parietal Lobe
          (c). Temporal Lobe
          (d). Frontal Lobe

III. Introduction to Neuropathology
  A. Brain Damage
    1. Basic Cellular Lesions
      a. Neuronal Lesions
      b. Non-neuronal Lesions

2. Basic Tissue Lesions
    a. Atrophy/Age
    b. Vascular
    c. Tumors
    d. Other Diseases

B. Mental Retardation
1. Genetic
2. Prenatal
3. Delivery
4. Postnatal

C. Differences Between Brain Damage and Mental Retardation
1. Onset of Damage
2. Behaviors Involved

IV. Introduction to Psychometrics
A. Basic Concepts
1. Human Differences
2. Variables Measured
    a. Physical
    b. Physiological
    c. Psychological

B. Description
1. Distributions
2. Statistics

C. Test-Oriented Measurements
1. Norm-Reference Scores
2. Derived Scores
3. Reliability and Validity

V. Instruments in Clinical Neuropsychology
A. Interview
1. Information
    a. Demographic (both premorbid and morbid)
        (1). Age
        (2). Education
        (3). Marital Status
        (4). Employment
        (5). Social Relationships
        (6). Handedness
    b. Presenting Problem
        (1). Patient/Client Derived Information
        (2). Referral Source Derived Information
    c. Non-Verbal
        (1). Grooming
        (2). Hygiene
        (3). Dress
        (4). Eye Contact
        (5). Motor Movements
        (6). Cooperativeness
    d. Clues to Possible Brian Damage
        (1). Physical Problems
            (a). Medical Complications
            (b). Bladder Control

(c). Sensation Loss
(d). Impaired Movements
(e). Sexual Incapacity
(2). Psychological Problems
(a). Language
(b). Cognition
(c). Memory
(d). Affect
(e). Drive
(f). Social Skills

B. Individual Tests
1. Intellectual
a. Wecshler Adult Intelligence Scale - Revised
b. Other Briefer Tests - e.g. Beta
2. Visuomotor
a. Bender - Gestalt
b. Hooper
c. Trail-making
3. Memory
a. Visual Retention Test
b. Graham-Kendall Memory for Designs
4. Cognitive
a. Proverbs Test
b. Whitaker Index of Schizophrenic Thinking
5. Orientation
a. General Orientation
b. Time Orientation
6. Verbal
a. Token
b. Reltan - Indiana Aphasia Test
7. Perceptual
a. Minnesota Paper Form Board Test
b. Seashore
8. Personality
a. Projective - Rorschach
b. Objective - MMPI

C. Batteries
1. Problems with Individual Tests (and solutions with batteries)
a. Limited Scope
b. Reliability and Comparison
c. Knowledge of Test Administration
2. Neuropsychological Batteries
a. Scope
(1). Breadth
(2). Reliable
b. Type
(1). Halstead - Reltan
(2). Luria-Nebraska
3. Luria Derived Tests
a. Luria's Non-Psychometric Techniques ($\approx$60)
b. Christensen's Version ($\approx$75)
c. Clinical Neuropsychological Screening Instrument ($\approx$79)
d. Luria-Nebraska Neuropsychological Battery ($\approx$80)

4. Luria-Nebraska Neuropsychological Battery
   a. General
      (1). 14 Scales
      (2). 269 Items
      (3). Scored 0,1,2
      (4). Emperically Interpreted
   b. Scales
      (1). Motor (51)
      (2). Rhythm and Speech (12)
      (3). Tactile and Kinesthetic (22)
      (4). Visual Functions (14)
      (5). Receptive Language (33)
      (6). Expressive Language (42)
      (7). Writing (13)
      (8). Reading (13)
      (9). Arithmetic (22)
      (10). Memory (13)
      (11). Intelligence (35)
      (12). Pathognomonic (34 - Derived)
      (13). Left Hemisphere (21 - Derived)
      (14). Right Hemisphere (21 - Derived)
   c. Administration
      (1). Systematic Variation
      (2). Time (1½ - 2½ Hours)
      (3). Materials (cards, tape, misc.,...)
   d. Scoring
      (1). Dimensions
         (a). Time
         (b). Frequencies
         (c). Quality
      (2). Values
         (a). of 50 = Normal Baseline
         (b). Baseline Can Be Altered With Changes in Education and Age.
   e. Interpretation
      (1). Scale Interpretation
         (a). 2 + Scales
         (b). Individual Scales
      (2). Item Analysis
      (3). Pattern/Localization
         (a). Cerebral Cortex
         (b). Subcortical