

# Psychological Testing



Fall 2010 Dr. Michael Diehr

Tuesday, August 31, 2010

## Psyc 402 Psychological Testing Fall 2010 - Dr. Michael Diehr

- Course Website:
  - <http://courses.csusm.edu/psyc402md>
- Meeting Times:
  - Class: UH370 Tu/Th 1:00pm - 2:50pm
  - Office Hours: Mark 249 Tu/Th 12pm - 12:45pm
  - Outside of class (by arrangement)

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## Course Overview

- General Course Information
- Outline / Textbook / Reading
- Website, Syllabus, Resources
- Assignments, Tests, Grading

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## About your instructor

- Michael Diehr (sounds like Deer)
- Adjunct (Visiting) Professor : teaches Cognitive (362), Abnormal (336)
- Ph.D. in Clinical Neuropsychology from UCSD/ SDSU
- Part-time teacher, also runs small technology consulting business

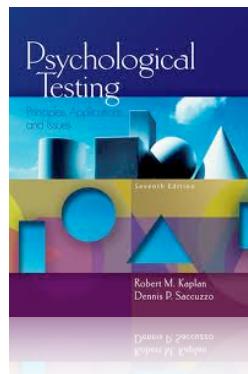
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## Psychological Testing 7th Ed

Robert M Kaplan  
UCLA (formerly  
UCSD)



Dennis P Saccuzzo  
SDSU



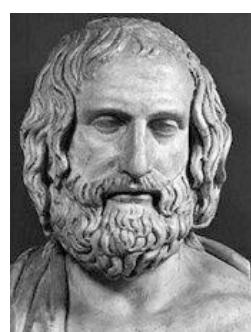
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## The Measure of Man

“Man is the measure  
of all things: of things  
which are, that they  
are, and of things  
which are not, that  
they are not.”



Protagoras c. 420BC

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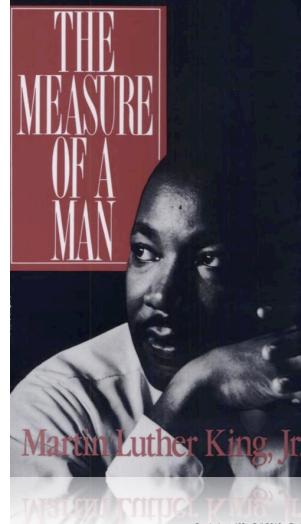
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## The Measure of A Man

Martin Luther King, Jr

Civil Rights Leader

(d. 1968)



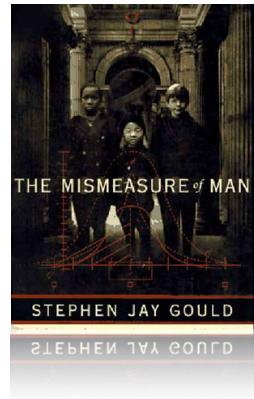
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## The Mismeasure of Man

Steven J Gould

Harvard Paleontologist

(d. 2002)



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## Course Outline 1

- Introduction
  - Ch 1 - Brief History of Psychological Testing and theories of Intelligence, Genetics, and Race
- Principles of Psychological Testing
  - Ch 2 - Basic Statistics and Norms
  - Ch 3 - Correlation and Regression
- Exam 1 (Ch. 1-3)

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## Course Outline 2

- Principles of Psychological Testing
  - Ch 4 - Reliability
  - Ch 5 - Validity
  - Ch 6 - Writing and Evaluating Test Items
  - Ch 7 - Test Administration
- Exam 2 (Ch. 4-7)

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## Course Outline 3a

- Research Project
  - Goal: Develop and Norm a novel psychological test
  - Lit Review (brief, 1-3 references)
  - Experimental Design
  - Collect Data (use each other as subjects)
  - Statistics

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## Course Outline 3b

- Research Project Paper
  - Turn in:
    - Proposal and Outline
    - Final Draft

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## Course Outline 4

- IQ testing
  - Ch 9 - Intelligence
  - Ch 10 - WAIS
- Controversies
  - Ch 19 - Controversy of IQ testing
- Other applications
  - Ch 13 - Clinical
  - Ch 14 - Projective
  - Ch 17 - Neuropsychology
  - Ch 15 - Computerized

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## Relevance for non-psychologists

- Personal:
  - test-taking theory
  - laws & ethics re: testing at your job
  - The project: good for CV/resume
- Professional: test development, measurement, stats
  - Business, marketing, advertising, HR/personnel
  - Educators
- History : nature vs. nurture, IQ, racism, genetic determinism.

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## Assignments, Tests, Grading

- Two Midterm Exams
- One Final Exam
- One Research Paper
- In-class participation

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## Grading

- approx. 250 Points
  - 2 Midterms @ 30 points = 60
  - Final Exam = 40
  - Research Paper = 60
  - Class participation = 40
  - Strong Interest Inventory (SII) = 10
- Graded on a curve, A = approx. 85%
- Make-ups: 10-20 points available

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## Chapter 1: Introduction

- General Course Information
- Outline / Textbook / Reading
- Website, Syllabus, Resources
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## Basic Concepts

- What is a psychological test
  - measurement device or technique
  - quantifies behavior
  - data is used to make predictions
  - usu. composed of individual items
  - often scored w.r.t. normative data

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## Why use tests?

- Why use tests? vs. the alternative -- just measure the thing directly
  - faster - saves time
  - more convenient, portable, virtual
  - standardize across space & time
  - less dangerous (e.g. brain surgeon)
  - more accurate(?)
  - \$\$\$\$ profit

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## Arguments against testing

- UnReliable -- inconsistent results
- InValid -- doesn't measure what it claims
- Biased -- treats sub groups differently
- Enforced conformity -- punishes creativity
- People & Institutions adapt -- "study for the test", expensive tutors
- Expensive -- few large private companies hold most of the business
- Privacy & Security & Cheating

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## Test types: administration

- Types of tests:
  - Individually-administered Tests
  - Group-administered Tests
  - Computerized (?)

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## Test types: domains

- Ability, Capacity or Potential
  - Achievement
  - Aptitude
  - Intelligence
- Personality
  - Structured ("Objective")
  - Projective

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## Test types: domains 2

- Military & Civil Service
- Vocational Counseling
- Industry / Business
- Clinical Psychology / Psychiatry
- Neuropsychology
- Research

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## History - Antiquity

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## History : China

- Han Dynasty (206 BCE thru 220 CE) had test batteries for law, military, agriculture, geography, etc.
- The “Imperial Examination”

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Chinese exam hall 1873

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## Gold, silver, brass, iron

“Citizens, we shall say to them in our tale, you are brothers, yet God has framed you differently. Some of you have the power of command, and in the composition of these he has mingled gold, wherefore also they have the greatest honor; others he has made of silver, to be auxiliaries; others again who are to be husbandmen and craftsmen he has composed of brass and iron; and the species will generally be preserved in the children. But as all are of the same original stock, a golden parent will sometimes have a silver son, or a silver parent a golden son.”

-- Plato, *The Republic*, circa 380 BC

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## Racial Attitudes of the 1800s

“[...]There is a physical difference between the white and black races which I believe will for ever forbid the two races living together on terms of social and political equality. And inasmuch as they cannot so live, while they do remain together there must be the position of superior and inferior, and I as much as any other man am in favor of having the superior position assigned to the white race.”

-- 1858, in a debate with Stephen Douglas

Abraham Lincoln

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## History : 18th - 19th Century

- The zeitgeist : colonialism, independence, contact between new races & ethnicities. Slavery.
- The needs: justify slavery, inequality.
- The techniques: very crude statistics, physical measurements
- Evolution vs. Creationism

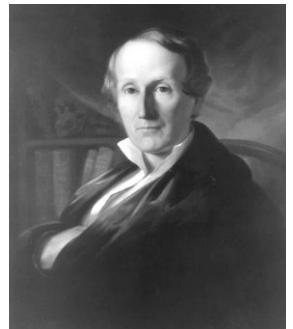
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## Samuel George Morton

- Polygenism
  - Humans are composed of different species
- Craniometry
- Biological Determinism
- “Scientific Racism”
- The “American School”
- d. 1851

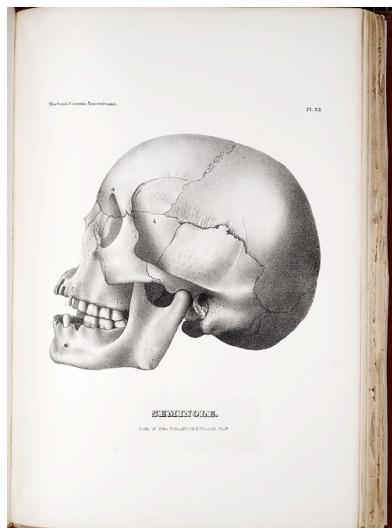


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# Crania Americana



Samuel George Morton  
1839

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## Visible differences?

Indigenous  
Australian  
Melanesia  
African  
European



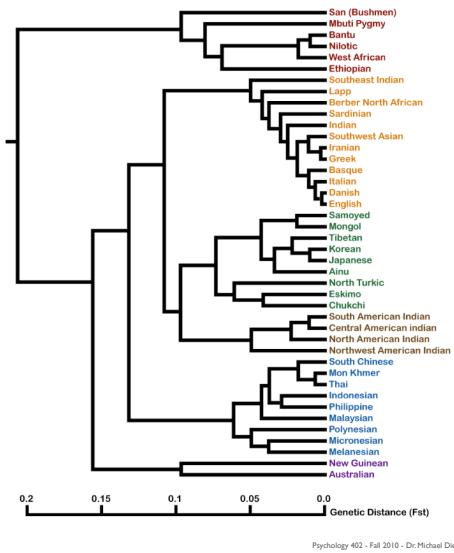
Australian and  
Africans are  
most genetically  
different

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## Genetic Differences

- Sub-Saharan African
- Indo-European
- East Asian
- Native American
- South Asian
- Aboriginal



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## History : 19th - 20th Century

- The zeitgeist : Industrialism, world conflict, communism, capitalism
- The needs: healthcare, war, government -- desire to identify unusually high & low functioning people
- The techniques: Advanced statistics, measurement theory
- Theories of psychological development, intelligence, genetics.

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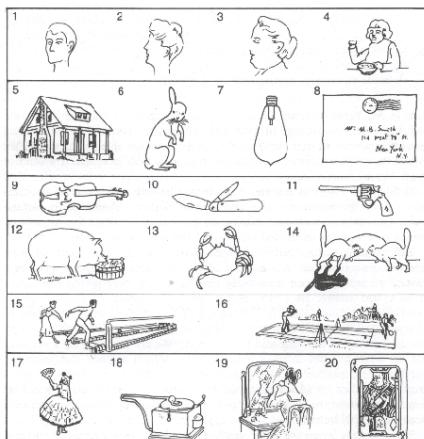
## Early 20th century

- Notable events in history:
  - Binet-Simon Scale
    - introduced idea of IQ as ratio of mental age to actual age
    - use of standardization sample
  - Army tests -- WWI
    - Alpha -- literate
    - Beta -- illiterate

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## Army Beta



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## History 3: IQ tests

- Charles Spearman : “g” -- theory of general intelligence factor underlying all other special abilities.
- David Wechsler: WAIS and WISC tests
  - Subtests - Verbal vs. Performance Scales
  - Large normative group -- IQ = performance as related to peers
- Thurstone, Cattel, Guilford, Gardner, others: further theories of intelligence (covered later)

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## WAIS: Block Design



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# HRB: Grooved Pegboard



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# History 4: Personality Test

- Traits vs. States
- Structured (“objective”):
  - WPDS (early)
  - MMPI, CPI (modern)
  - 16PF (modern, based on factor analysis)
- Unstructured / “projective”:
  - Rorschach (inkblot test, Exner’s scoring)
  - TAT (Thematic Apperception Test)

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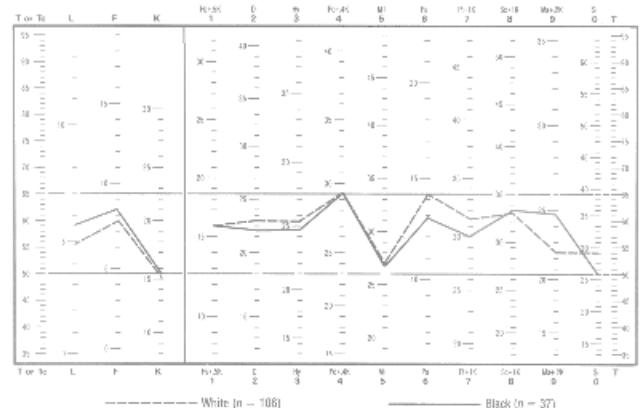
MMPI

1. I like mechanics magazines
2. I have a good appetite
3. I wake up fresh & rested most mornings
4. I think I would like the work of a librarian
5. I am easily awakened by noise
6. I like to read newspaper articles on crime
7. My hands and feet are usually warm enough
8. My daily life is full of things that keep me interested
9. I am about as able to work as I ever was
10. There seems to be a lump in my throat much of the time

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J. Clin. Diet.

## MMPI



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Wehr

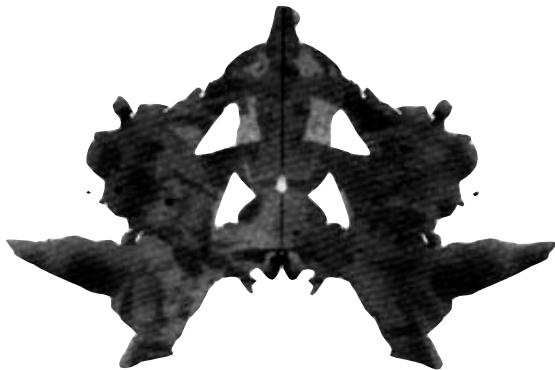
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## Rorschach I



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## Rorschach 2



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## MMOM - Themes

- Biological Determinism - a theory of limits
- Measuring intelligence as a single quantity
- Plato: dialectic. Church: dogma. Now : science.
- “Book is about the scientific version of Plato’s tale”
- “Socrates knew that he was telling a lie”
- Science (and scientists) are not objective
  - social endeavor
  - fraud, but also (and worse) unconscious bias

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## MMOM - Fallacies

- Reification
  - naming a thing gives it disproportionate power
- Ranking
  - over-simplifying complexity by ordering on a single scale

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