

Psychological Testing



Fall 2010 Dr. Michael Diehr

Tuesday, August 31, 2010

1

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)

Psychology 402 - Fall 2010 - Dr. Michael Diehr

Tuesday, August 31, 2010

2

Course Overview

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

Psychology 402 - Fall 2010 - Dr. Michael Diehr

Tuesday, August 31, 2010

3

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

Psychology 402 - Fall 2010 - Dr. Michael Diehr

Tuesday, August 31, 2010

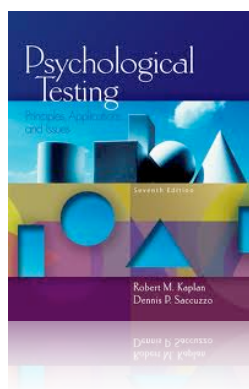
4

Psychological Testing 7th Ed

Robert M Kaplan
UCLA (formerly
UCSD)



Dennis P Saccuzzo
SDSU



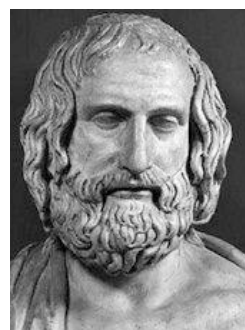
Psychology 402 - Fall 2010 - Dr. Michael Diehr

Tuesday, August 31, 2010

5

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

Psychology 402 - Fall 2010 - Dr. Michael Diehr

Tuesday, August 31, 2010

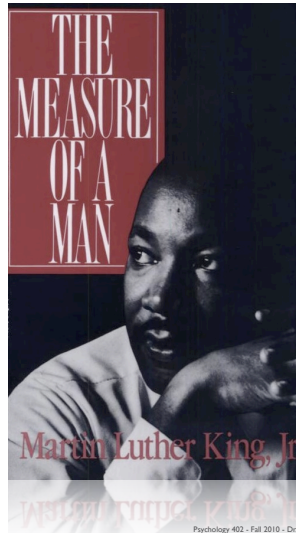
6

The Measure of A Man

Martin Luther King, Jr

Civil Rights Leader

(d. 1968)



Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

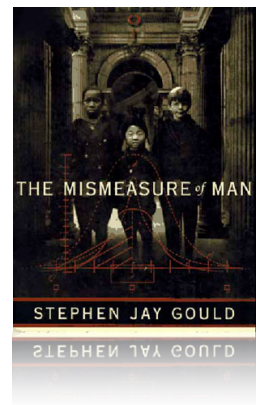
7

The Mismeasure of Man

Steven J Gould

Harvard Paleontologist

(d. 2002)



Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

8

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)

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

9

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)

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

10

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

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

11

Course Outline 3b

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

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

12

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

Psychology 402 - Fall 2010 - Dr. Michael Daiter

Tuesday, August 31, 2010

13

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.

Psychology 402 - Fall 2010 - Dr. Michael Daiter

Tuesday, August 31, 2010

14

Assignments, Tests, Grading

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

Psychology 402 - Fall 2010 - Dr. Michael Daiter

Tuesday, August 31, 2010

15

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

Psychology 402 - Fall 2010 - Dr. Michael Daiter

Tuesday, August 31, 2010

16

Chapter 1: Introduction

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

Psychology 402 - Fall 2010 - Dr. Michael Daiter

Tuesday, August 31, 2010

17

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

Psychology 402 - Fall 2010 - Dr. Michael Daiter

Tuesday, August 31, 2010

18

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

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

19

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

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

20

Test types: administration

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

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

21

Test types: domains

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

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

22

Test types: domains 2

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

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

23

History - Antiquity

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

24

History : China

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

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

25



Chinese exam hall 1873

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

26

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

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

27

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

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

28

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

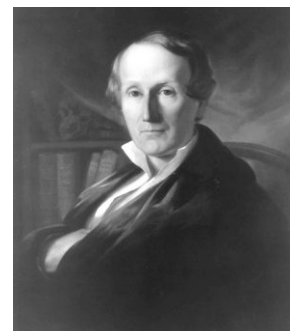
Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

29

Samuel George Morton

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



- d. 1851

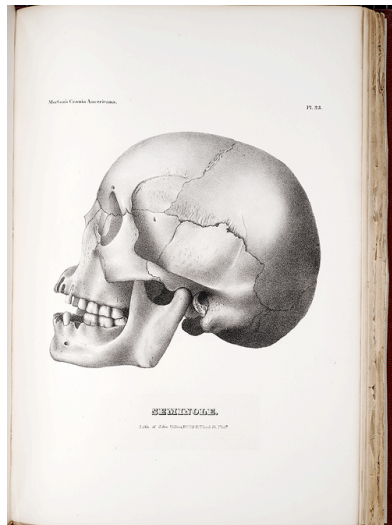
Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

30

Crania Americana

Samuel George Morton
1839



Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

31

Visible differences?

Indigenous
Australian
Melanesia
African
European



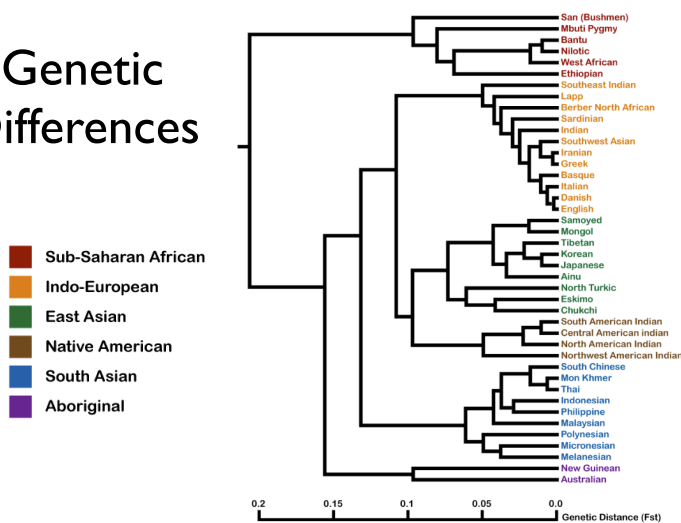
Australian and
Africans are
most genetically
different

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

32

Genetic Differences



Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

33

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.

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

34

Early 20th century

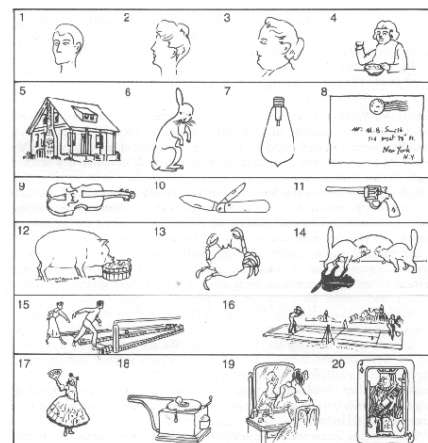
- Notable events in history:
 - Binet-Simon Scale
 - introduced idea of IQ as ratio of mental age to actual age
 - use of standardization sample
- Army tests -- WWI
 - Alpha -- literate
 - Beta -- illiterate

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

35

Army Beta



Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

36

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, Cattell, Guilford, Gardner, others: further theories of intelligence (covered later)

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

37

WAIS: Block Design



Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

38

HRB: Grooved Pegboard



Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

39

History 4: Personality Test

- Traits vs. States
- Structured (“objective”):
 - WPDS (early)
 - MMPI, CPI (modern)
 - I6PF (modern, based on factor analysis)
- Unstructured / “projective”:
 - Rorschach (inkblot test, Exner’s scoring)
 - TAT (Thematic Apperception Test)

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

40

MMPI

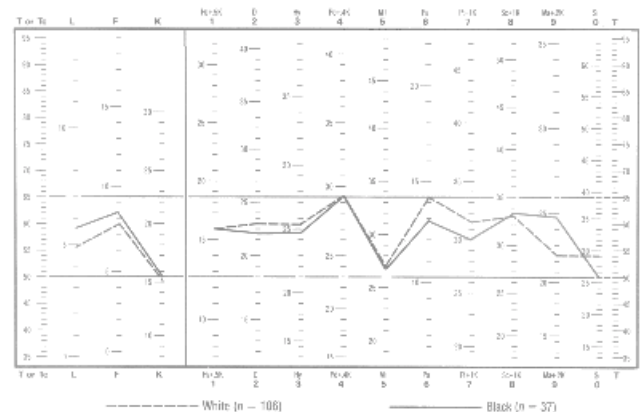
1. I like mechanics magazines
2. I have a good appetite
3. I wake up fresh & rested most mornings
4. I think I would like the work of a librarian
5. I am easily awakened by noise
6. I like to read newspaper articles on crime
7. My hands and feet are usually warm enough
8. My daily life is full of things 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

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

41

MMPI



Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

42

TAT



Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

43

Rorschach I

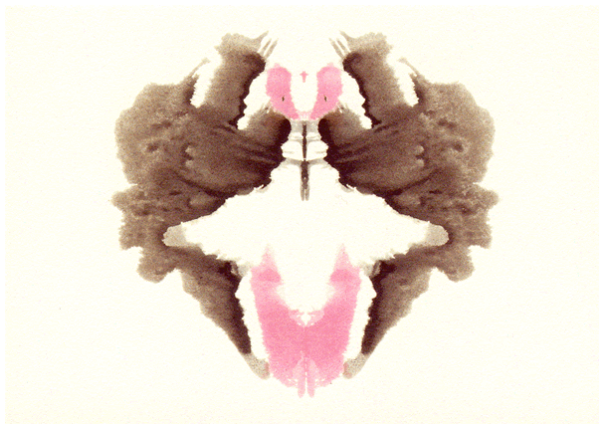


Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

44

Rorschach 2



Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

45

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

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

46

MMOM - Fallacies

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

Psychology 402 - Fall 2010 - Dr. Michael Disher

Tuesday, August 31, 2010

47