Class update

• Website down!
  – But, you can access everything (all lectures so far, exam grades, syllabus) at [www.ubc-emotionlab.ca/psyc305a/](http://www.ubc-emotionlab.ca/psyc305a/).
  – PLEASE WRITE THIS LINK DOWN NOW!

• Exam 3 this Friday

• We will watch the movie “Body Doubles” in class next week, on Wed.
  – NOT on Oct. 24th, as it says on the syllabus
Traits Wrap up

Personality vs. Situation

So how do we know which matters, when?

• Situational characteristics are better predictors of behavior
  – when situation is strong—with a high level of constraint
• Personality traits are better predictors of behavior
  – when situation is weak—with a low level of constraint
• **Degree of constraint**
  - **High**
    people likely to show little variation in behavior
    (situation most important)
  - **Low**
    people likely to show most variation in behavior
    (personality most important)

• **Situation**
  - Church
  - Job interview
  - Elevator
  - Family dinner
  - Class
  - Movies
  - Restroom
  - Bus
  - Date
  - Bar
  - Football game
  - Dorm lounge
  - Park
  - Own room

**Biological Approach to Personality**
Biology and Personality

Neuroscience Methods

Transcranial magnetic stimulation (TMS)
Biological Perspective and Personality: Basic Assumptions

- Personality traits:
  - Reflect *physiological* differences
  - Are largely *genetically* determined
  - Are rooted in our *evolutionary* history

Pre-Scientific Approach: Phrenology

Regions of the brain are associated with certain functions (e.g., sloping forehead = criminal prone)

Modern view:
1) it's in the brain, not the head
2) it's not that specific
Galen’s four humors

GALEN: Ancient Greek physician (C.130-200 A.D.)

Thought personality was a reflection of the four humors (fluids) that (he thought) make up our bodies.

- Yellow Bile - bad temper, irritability (Choleric)
- Black Bile - gloomy, pessimistic (Melancholic)
- Phlegm - sluggish, non-excitable (Phlegmatic)
- Blood - cheerful, passionate (Sanguine)

If one of these fluids was dominant, the personality associated with that fluid would be observed.

Modern View: Genes
Modern View

- Genes are the building blocks of personality
  - Inherited through evolutionary processes
  - Shape personality and behavior by shaping physiological responses
  - Behavioral genetics = the study of how genes shape behavior

Assumptions of Behavioral Genetics

- Nature vs. Nurture
  - Behavior (i.e., personality) is shaped, in part, by genes we inherit
  - Behavior is also shaped by the environment
- NO traits are caused entirely by nature or nurture; it’s always both
Basic Assumptions of Genetic Approach

• *Genotypes* are genetic *potentialities*
  – E.g., genes for eye color, height

• *Phenotypes* are manifest characteristics.
  – E.g., actual eye color and height; influenced by mix of genes and environment

• *Genetic determination*
  – If gene, then phenotype, irrespective of environment

• *Gene-environment interaction*
  – If gene and a particular environment, then a particular phenotype

Genetic Heritability

• *Heritability* is the extent to which individual differences in a trait, *within a group of people*, are due to differences in genes
  – Heritability can only apply to groups based on individual differences
  – Does NOT mean how much of a trait within a single person is due to genetics
Behavioral Genetics

- Used to identify genetic differences between individuals within a group
- Allows researchers to determine the extent to which individual differences in a trait are due to genetics and to the environment

Misconceptions about Heritability

- Group differences are (most typically) NOT explained by genetic differences
  - E.g., African-American vs. Caucasian IQ scores
  - Numerous studies have found that average IQ for U.S. African-Americans is 10 to 15 points lower than for U.S. Caucasians
  - This difference has been assumed, by some, to be due to genetics
  - What is wrong with this explanation?
Where are the Genetic Differences?

Group differences due to environmental differences between groups

- The difference in average racial IQs decreases when environments are matched on SES
- Average IQ for U.S. African-Americans adopted into white middle-class households is 110
  - 25 points higher than average African-Americans, 10 points higher than average Caucasians
Group Differences Due to Different Environments

• Race differences in IQ differ by age
  – No difference in infancy
  – 4 point difference at age 4
  – From ages 4-24 years African Americans lose $6/10^{th}$ of a point per year

What’s the environmental difference?

• African American children more likely to be raised by single parent
  – Single parent homes less cognitively complex
• Attend schools with lower average IQ, so high achievers don’t need to achieve as high
Behavioral Genetics

Research in Behavioral Genetics: Twin Studies

• Twin studies help us understand the importance of genetic and environmental influences on social development
  – Identical (MZ) vs. Fraternal (DZ) twins
  – Reared together vs. reared apart
Shared Traits in Identical Twins

• Who has an identical twin?
• What personality dispositions do you and your twin share?

• Why do ID twins share traits?
Twin Study Research Diagram

<table>
<thead>
<tr>
<th></th>
<th>Monozygotic (MZ) Twins</th>
<th>Dizygotic (DZ) Twins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>same</td>
<td>same</td>
</tr>
<tr>
<td>Genetics</td>
<td>same</td>
<td>different</td>
</tr>
</tbody>
</table>

Behavioral Genetics Methodology

- Twin Studies: compare concordance (similarity) of trait in MZ vs. DZ twins
- Adoption Studies: compare concordance of trait between parents and biological vs. adopted kids
- MZ Twins Raised Apart
  - Best Design: Simply look at the concordance of the trait → that’s its heritability
Is Extraversion more heritable in Swedes or Finns?

<table>
<thead>
<tr>
<th></th>
<th>MZ Twins</th>
<th>DZ Twins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swedish sample</td>
<td>.47</td>
<td>.20</td>
</tr>
<tr>
<td>Finnish sample</td>
<td>.46</td>
<td>.15</td>
</tr>
</tbody>
</table>

*Source: From Floderus-Myrhed et al. (1980) and Rose et al. (1988).*

Exam 3 on Friday

- All multiple choice (30 items, each worth 1.5 points)
- Will cover:
  - Lectures 10-14; Chapters 14, 3, 4, 5, part of 6
  - Self-esteem
  - Traits & Trait taxonomies
  - Big 5 model; personality change and development
  - Person-Situation Debate
  - Genetic Approach to personality (what we covered in class today)
  - The Social Network
Next Class

• Exam 3
• For Monday, Oct. 24:
  – Read Larsen & Buss, Chapter 7