Other domains of personality research

- Evolutionary perspectives and individual differences
- Behavior Genetics of Personality
- Personality and Intelligence
- Longitudinal studies of personality consistency
  - Block et al.
  - Caspi et al.
- Cognitive Affective Personality Systems
- Affective Dynamics
Personality, Individual Differences and Evolutionary Psychology

• Evolutionary Psychological Theory
  – Barkow, Cosmides, and Tooby (1992) The Adapted Mind
  – Species typical behavior
    • Adaptations that are important for survival and reproduction will be selected for over time
    • Why are there individual differences
5 broad classes of competition

- Between species
- Within species
  - Intrasexual competition for survival and reproduction
  - Intersexual competition
  - Parent offspring competition
  - Sibling competition
Competition-1: Between species

Competition and co-evolution: the “Red Queen hypothesis”
Van Valen, 1973

need to run fast just to stay in place

Is co-evolution the genesis of sexual reproduction?
  Why do we sexually reproduce -- wastes 50% of our genes
  Random reassortment protects from parasites?

Are individual differences merely a defense against parasitic load?
Competition-2: Within species

• Intra-sexual competition for survival and reproduction
  – Niche selection
  – Multiple strategies lead to locally optimal solutions
  – Nettle (2005, 2006) discusses costs and benefits that lead to balanced selection
    • Extraversion leads to higher reproduction but at cost of increased mortality risk
Competition 3: within species

• Inter-sexual competition
  – Resource investment model (e.g., Buss)
    • Maternity certainty and high resource cost
    • Paternity uncertainty and low resource cost
  – But reproductive success is not number of children, but number of surviving descendants
Competition-4: Within species

- Parent - offspring competition for resources
  - Offspring share 50% of parent’s genes.
  - Reproductive value of offspring to parent varies as situational stress and probability of offspring reproduction
- Parent - step child conflict - Cinderella
Competition -5: within species

• Sibling competition (see F. Sulloway’s Born to Rebel for a discussion of the implication of birth order effects)
  – Differential reproductive fitness (as a child) as a function of birth order leads to
  – Multiple strategies varying by birth order
    • First borns -- higher conscientiousness
    • Later borns  higher opennesss
  – (but see also Harris for an analysis of the effects of peer groups)
    • Peer groups as collection of unexplained variance?
Behavior Genetics and inheritance of individual differences

• Until recently, little emphasis upon genetic mechanisms per se, but rather on proportions of variance explained through genetic relationship

• Not much (until recently) recognition of distinction between structural versus regulatory genes
Behavior genetics

- Experimental studies
  - Rats and selective breeding
    - Maze bright versus maze dull
    - Reactive versus non-reactive
  - Drosophila and selective breeding
    - Positive and negative geotaxis
    - Positive and negative phototaxis
    - Genes for clock timing
  - Dog breeding for 10,000 years
Simple genetic models

• Single gene models - classic Mendelian genetics
  – (One Gene, One Disease)
    Multiple alleles
  – Additive genetic variance
  – Non-additive (dominance/recessive) variance
  – Epistasis - interaction with other genes
Simple genetic models: selection for fitness

- Small variation in reproductive fitness leads to selection pressure to eliminate less fit allele
- Non additivity (dominance/recessive) makes it harder to select out or fixate.
- Balanced polymorphism has selective advantage for heterozygous rather than homozygous. (e.g., sickle cell, G6PD as defenses against malaria)
- Mutation rate of ≈ .0001 => 3/generation
Polygenetic models

• Polygenes as sum of separate genes
  – Biometric analysis rather than conventional Mendelian analysis
  – Polygenetic traits assumed to be the case for complex behaviors

• Work now starting with genes of interest and looking for behavioral differences
The concept of heritability - sources of variance

• Decomposition of phenotypic variance
  – \( V_p \) = Phenotypic variance
  – \( V_g \) = Additive genetic variance
  – \( V_d \) = Dominance (recessive) variance
  – \( V_i \) = epistatic (gene by gene interactions)
  – \( V_{am} \) = assortative mating variance
  – \( V_e \) = environmental variance
    • \( V_{es} \) = shared environmental - (variance between families)
    • \( V_e \) = non-shared enviromental (variance within families)
  – Cov (genetic by environment covariance)
  – \( V_{eg} \) (genetic by enviroment interaction)
  – \( V_{error} \) = variance due to poor measurement
Heritability: a hodgepodge ratio

- \( h^2 = \frac{V_g}{V_p} \) narrow heritability
- \( h^2 = \frac{(V_g + V_d + V_i \ldots)}{V_p} \) Broad heritability
- Both estimates are dependent upon variance as observed and imply nothing about what would happen if situations change
  - Consider the case of height or CHD
    - Highly heritable but large environmental effects
    - CHD rates double for Japanese living in US
    - Height has gone up even though highly heritable
Estimating heritability

- Twins: Experiments of nature
  - MZa: identical genes,
  - DZ: 50% (on average) genetic relationship
- Family composition: experiments of humans
  - MZa: identical genes, no shared environment
  - DZa: 50% shared genes, no shared environment
  - MZt: identical genes, shared family environment
  - DZt: 50% shared genes, shared family environment
  - Adopted: 0% shared genes, shared family environment
Estimating the Genetics of Personality

A = additive genetic variance
C = Common family environment
E = Unique environment

\[ \text{r}_g = 1, 0.5, 0 \]
\[ \text{r}_c = 1, 0 \]

A = additive genetic variance
C = Common family environment
E = Unique environment

\[ r_{s1,s2} \]

\[ r_g = 1 \text{ for MZ, } 0.5 \text{ for DZ, sibs} \]
\[ r_c = 1 \text{ for together, } 0 \text{ apart} \]
## Personality and Genetics

<table>
<thead>
<tr>
<th>Trait</th>
<th>Narrow heritability</th>
<th>Broad heritability</th>
<th>Shared Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
<td>0.36</td>
<td>0.49</td>
<td>0</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>0.28</td>
<td>0.39</td>
<td>0.09</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>0.28</td>
<td>0.38</td>
<td>0.04</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>0.31</td>
<td>0.41</td>
<td>0.05</td>
</tr>
<tr>
<td>Openness</td>
<td>0.46</td>
<td>0.45</td>
<td>0.05</td>
</tr>
<tr>
<td>IQ</td>
<td>0.5</td>
<td>0.75</td>
<td>0.04</td>
</tr>
</tbody>
</table>

McGue and Bouchard, ARN, 1998
# Personality and Genetics

<table>
<thead>
<tr>
<th>Occupational interest</th>
<th>Narrow heritability</th>
<th>Broad heritability(^a)</th>
<th>Shared Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Realistic</td>
<td>0.36</td>
<td>0.41</td>
<td>0.12</td>
</tr>
<tr>
<td>Investigative</td>
<td>0.36</td>
<td>0.66</td>
<td>0.1</td>
</tr>
<tr>
<td>Artistic</td>
<td>0.39</td>
<td>0.5</td>
<td>0.12</td>
</tr>
<tr>
<td>Social</td>
<td>0.38</td>
<td>0.52</td>
<td>0.08</td>
</tr>
<tr>
<td>Enterprising</td>
<td>0.31</td>
<td>0.5</td>
<td>0.11</td>
</tr>
<tr>
<td>Conventional</td>
<td>0.38</td>
<td>0.38</td>
<td>0.11</td>
</tr>
</tbody>
</table>

\(^a\) estimated from MZ apart correlation

McGue and Bouchard, ARN, 1998
# Personality and Genetics

<table>
<thead>
<tr>
<th>Psychiatric illness</th>
<th>Broad heritability</th>
<th>Shared Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schizophrenia</td>
<td>0.8</td>
<td>No</td>
</tr>
<tr>
<td>Major Depression</td>
<td>0.37</td>
<td>No</td>
</tr>
<tr>
<td>Panic disorder</td>
<td>0.30-.40</td>
<td>No</td>
</tr>
<tr>
<td>Generalized Anx</td>
<td>0.3</td>
<td>Small, females</td>
</tr>
<tr>
<td>Phobias</td>
<td>0.2-.4</td>
<td>No</td>
</tr>
<tr>
<td>Alcoholism</td>
<td>0.50-.60</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Bouchard, CDPS, 2004
## Personality and Genetics

<table>
<thead>
<tr>
<th>Social Attitudes</th>
<th>Broad heritability</th>
<th>Shared Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservatism</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under age 20</td>
<td>0</td>
<td>Yes</td>
</tr>
<tr>
<td>Over age 20</td>
<td>.45-.65</td>
<td>Yes, females</td>
</tr>
<tr>
<td>Right Wing Auth</td>
<td>.50-.64</td>
<td>.0-.16</td>
</tr>
<tr>
<td>Religiousness (adult)</td>
<td>.30-.45</td>
<td>.2-.4</td>
</tr>
<tr>
<td>Specific religion</td>
<td>0</td>
<td>NA</td>
</tr>
</tbody>
</table>

Bouchard, CDPS, 2004
Heritability: misconceptions

• High heritability => Constancy: but
  – Heritability changes by changing the environment
    • $h^2 = \frac{V_g}{V_p} = \frac{V_g}{(V_g + V_e)}$
  – Reducing environmental variation increases the heritability
    • Herrnstein’s paradox: higher heritabilities imply more equal environments
    • Low heritability => high environmental inequality
Heritability: misconceptions - 2

- Heredity vs. environment
  - Genes code proteins, not behavior
  - Genes act through environment
  - As meaningless as asking “Which is more important in area of a rectangle: height or width?”
  - Environment affects gene expression

- Individuals versus populations
  - Variance estimates are population based, not for individual
  - Variations in environments affect estimates
Heritability and group differences

• Does within group heritability imply between group heritability?

• Consider the case of height
  – Within group differences are highly heritable
  – $h^2$ of roughly .8-.9
  – almost no known genes
  – Dutch have become taller over past 50 years
  – North-South Korean differences of 6 inches
Heritability and environment example of Phenylketonuria

• PKU as inability to process phenylalanine
  – PKU is a Mendelian recessive gene
  – Effect without environmental manipulation is severe brain retardation
  – Phenylalanine diet stops the effect
  – With proper diet, no effects (but girls are still carriers of PKU gene and their fetus is at risk if mother is not on PKU diet)
Cognitive and non-cognitive aspects of personality

- Traditional personality variables are central tendencies of behavior: what do you like to do, how do you normally feel
- Cognitive Ability measures are limit measures: how much can you do, what are the limits of performance
Studies of Cognitive Skill

• Individual Differences approach to the study of intelligence
• Experimental/Cognitive Psychology approach to the study of task components
Cognitive Ability and Cognitive Psychology

• Ability studies emphasize individual differences and shared variance between divergent tests
  – Little emphasis upon cognitive processes

• Traditional cognitive psychology emphasizes development of processes and distinctions between processes
  – Little emphasis upon individual differences
Historical trends

http://www.indiana.edu/~intell/map.shtml
Conventional measures of ability

- Wechsler Adult Intelligence Scales
  - Verbal and Performance subscales
- Raven’s Progressive Matrices
  - abstract reasoning (culture fair?)
- SAT/ACT
  - How much has been learned in 12 years of schooling
  - Vocabulary/quantitative skills
Raven’s Progressive Matrices
Which one best completes the form?
Item similar to Raven’s

Which answer fits in the missing space to complete the pattern?

1 2 3

4 5 6
Wechsler Intelligence Test

- **Verbal scales:**
  - Information
  - Comprehension:
  - Digit Span
  - Similarities
  - Vocabulary
  - Arithmetic

- **Performance Scales:**
  - Object Assembly
  - Block Design
  - Digit Symbol/Coding
  - Picture Arrangement
  - Picture Concepts
  - Picture Completion
Standard hierarchical model of ability
Carroll-Horn-Cattell

• g (general intelligence)
  – Gc (crystallized intelligence)
    • Domain specific
    • Increases over much of life span
  – Gf (fluid intelligence)
    • General processing speed and flexibility
    • Peaks around 20-25
Hierarchical version of the Berlin model of intelligence and a grade hierarchy model

K: Processing capacity for complex information, i.e. reasoning
F: figural intelligence
N: numerical intelligence
V: verbal intelligence
B: Speed on relatively simple tasks
M: Memory, i.e. storage capacity for information

Legend:
- g: General intelligence
- gf: Fluid intelligence
- gC: Crystallized intelligence
- MF, MN, MV, BF, BN, BV, EF, EN, EV, KF, KN, KV:
  - MF: Mathematical reasoning
  - MN: Mathematical number reasoning
  - MV: Mathematical visualization
  - BF: Basic factual knowledge
  - BN: Basic number knowledge
  - BV: Basic visual knowledge
  - EF: Verbal factual knowledge
  - EN: Verbal number knowledge
  - EV: Verbal visual knowledge
  - KF: Knowledge
  - KN: Knowledge
  - KV: Visual knowledge

Diagram:
- Mathemat.
- Physics
- Chemistry
- Biology
- German
- 1. foreign language
- 2. foreign language
- Language
- Science
- Total grade
Life as an intelligence test

• Conventional tests are short (30 minutes to 2-3 hours) and use representative content
• Continued performance across many situations is a continuing test of ability
• Job performance
• Health maintenance
• (see L. Gottfredson’s web page:
  – http://www.udel.edu/educ/gottfredson/ )
<table>
<thead>
<tr>
<th>Life Chances</th>
<th>High Risk</th>
<th>Uphill Battle</th>
<th>Keeping Up</th>
<th>Out Ahead</th>
<th>Yours to Lose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training Style</td>
<td>Slow, simple, hands-on</td>
<td>Very explicit, hands-on</td>
<td>Written materials, plus experience</td>
<td>Gathers, infers own information</td>
<td>College format</td>
</tr>
<tr>
<td>Career Potential</td>
<td>Assembler, food service, nurse’s aide</td>
<td>Clerk, teller, police officer, machinist, sales</td>
<td>Manager, teacher, accountant</td>
<td>Attorney, chemist, executive</td>
<td></td>
</tr>
<tr>
<td>IQ</td>
<td>70</td>
<td>80</td>
<td>90</td>
<td>100</td>
<td>110</td>
</tr>
</tbody>
</table>

Population Percentages

| Total population distribution | 5 | 20 | 50 | 20 | 5 |
| Out of labor force more than 1 month out of year (men) | 22 | 19 | 15 | 14 | 10 |
| Unemployed more than 1 month out of year (men) | 12 | 10 | 7 | 7 | 2 |
| Divorced in 5 years | 21 | 22 | 23 | 15 | 9 |
| Had illegitimate children (women) | 32 | 17 | 8 | 4 | 2 |
| Lives in poverty | 30 | 16 | 6 | 3 | 2 |
| Ever incarcerated (men) | 7 | 7 | 3 | 1 | 0 |
| Chronic welfare recipient (mothers) | 31 | 17 | 8 | 2 | 0 |
| High school dropout | 55 | 35 | 6 | 0.4 | 0 |
Life as a intelligence test
(adapted from Gottfredson, 2002)

Relative risk (odds ratio) of this outcome for “dull” (IQ 75-90) vs. “bright” (IQ 110-125) persons: Young white adults

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Relative Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>High school dropout</td>
<td>133.9</td>
</tr>
<tr>
<td>Chronic welfare recipient (female)</td>
<td>10</td>
</tr>
<tr>
<td>Ever incarcerated (male)</td>
<td>7.5</td>
</tr>
<tr>
<td>Lives in poverty</td>
<td>6.2</td>
</tr>
<tr>
<td>Had illegitimate child (women)</td>
<td>4.9</td>
</tr>
<tr>
<td>Unemployed 1+ mo/yr (male)</td>
<td>1.5</td>
</tr>
<tr>
<td>Out of labor force 1+mo/yr (male)</td>
<td>1.4</td>
</tr>
<tr>
<td>Divorced in 5 years (ever married)</td>
<td>1.3</td>
</tr>
</tbody>
</table>
Life as an intelligence test
(adapted from Gottfredson, 2002)

Common subtests, e.g.
- Elementary, secondary school
- Law-abiding, employed, married
- Rung on occupational & income ladders
- Daily self-maintenance (functional literacy)
- Personal health & safety

Different subtests, e.g.
- Tertiary education & training
- Job performed
- Hobbies
- Type of civic participation
3. How Does Our Own g Level Affect the Life Tests We Take?

<table>
<thead>
<tr>
<th>Applicants for:</th>
<th>IQs: Middle 50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attorney, Engineer</td>
<td>108-128</td>
</tr>
<tr>
<td>Teacher, Programmer</td>
<td>100-120</td>
</tr>
<tr>
<td>Secretary, Lab tech</td>
<td>96-116</td>
</tr>
<tr>
<td>Meter reader, Teller</td>
<td>91-110</td>
</tr>
<tr>
<td>Welder, Security guard</td>
<td>85-105</td>
</tr>
<tr>
<td>Packer, Custodian</td>
<td>80-100</td>
</tr>
</tbody>
</table>
g-Related Relative Risk Varies by Kind of Outcome
Intelligence: unanswered questions

• Stability and change over time within individuals and between individual
• The “Flynn Effect”
• Cultural effects
• Genetic Effects
Intelligence: long term stability and outcomes

• 3 major studies
  – Terman’s study of intellectual accomplishment
    • selected group for high IQ at age 10- studied over the next 80 years
  – Deary et al. study of the intellectual stability over the life
    • sample of entire Scottish population from 1932
  – Stanley-Benbow-Lubinski study of precocious youth
Terman study of ability

- Lewis M. Terman and Melita Odem at Stanford
- Subjects selected from 1921-1922
  - grades 3-8, teacher ratings of 1st, 2nd, 3rd brightest and the youngest
  - name of brightest child from previous year
  - group test of intelligence
  - best scorers then tested with Stanford Binet
  - IQ > 140 (a few 135-140)
Terman study of ability

• Main sample was 661: 354 male, 307 female
  – selected from school population of ≈ 160,000
  – supplemental sample of ≈ 900 meeting similar criterion

• Materials
  – 12 page Home information Blank
  – 8 page school information blank
  – 1 hour medical exam
  – 37 anthropometric measurements
  – school achievement battery ...
Terman study and followups

• 1921: original data collection
• 1927-28: the promise of youth
• later followups:
  – 1936
  – 1940
  – 1945: Accomplishments
  – 2003: Friedman -- personality predictors from age 10 of life span
The Scottish Longitudinal Study

- June 1, 1932, all children age 11 attending school in Scotland (N=87,498) took a 45 minute IQ test (Moray House Test)
- Followup studies from Ian Deary and his colleagues (N>600) have examined mortality risk, test retest correlations, MRI scans, Alzheimer onset, etc.
Scotland Longitudinal Study

- Test retest (age 11 to age 77) $r = .63$, corrected for range restriction = .73
- Mean scores on Moray House Test increased from age 11 to age 77 (43 to 54, sd = 11).
- IQ at age 11 predicted relative risk of dying before 80
Intelligence and Mortality
Deary - Midlothian study

![Graph](image)

- Women - lowest IQ quarter
- Women - highest IQ quarter
- Men - lowest IQ quarter
- Men - highest IQ quarter
Study of Mathematically Precocious Youth

• Originated at Johns Hopkins by Julian Stanley
• Continued by Camilla Benbow and David Lubinski (1972-2008)
• Before age 13
  – SAT M > 700
  – SAT V > 630
  – top .01%
• followup studies after 20 years
Talent search vs. top graduate students

- Grad students at top math, engineering and physical science departments in 1992

<table>
<thead>
<tr>
<th></th>
<th>GRE V</th>
<th>GRE Q</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>627</td>
<td>750</td>
<td>299</td>
</tr>
<tr>
<td>Female</td>
<td>615</td>
<td>736</td>
<td>287</td>
</tr>
</tbody>
</table>
Future Outcome

Fig. 2. Percentage of graduate-student (GS) and talent-search (TS) participants with tenure-track or tenured positions (left) and annual incomes of $100,000 or more (right). The data shown here are based on the complete samples: 299 and 287 male and female GS participants, respectively, and 286 and 94 male and female TS participants, respectively.
IQ increases: the “Flynn Effect”

• Although normed for a mean of 100, sd=15, IQ scores have increased over time
  – Comparisons of standardization samples given older and newer tests
• IQ scores on “culture fair” tests have tended to go up about 1 sd/generation
• IQ scores on “crystallized” tests have not increased as much
The Flynn effect:
shadows on the wall

• Flynn effect is on observed variables, but what about change on the unobserved?
• Jensen and Plato’s cave
  – Latent variables as real heights
  – Observed variables as shadow heights
  – Shadow length is changing (Flynn effect) but are the real heights?
Group differences and heritability

- Group differences of 1 standard deviation
- Heritability within groups of 0.6-0.8
- Is the between group difference genetic?
- Lewontin’s pot example
  - Consider a bag of seed, take two random handfuls, put one into a pot with good soil and the other into a pot with fewer nutrients. Within pot differences are all genetic, between pot differences are all environmental.
  - Within group heritability implies nothing about between group differences
Heritability and group differences

• The example of height
  – high heritability
  – no single genes
  – very large changes over time (health?)
  – large group differences
    • the example of Korea

Wendy Johnson, 2008
Stability of personality across time

- Longitudinal studies
  - Age trends
  - Correlational patterns
  - Absolute changes

- Cross sectional studies
  - Mean scores as a function of age
Year to year correlations (correcting for initial reliability) = .98

<table>
<thead>
<tr>
<th>Years</th>
<th>Consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.98</td>
</tr>
<tr>
<td>5</td>
<td>.90</td>
</tr>
<tr>
<td>10</td>
<td>.82</td>
</tr>
<tr>
<td>20</td>
<td>.67</td>
</tr>
<tr>
<td>30</td>
<td>.55</td>
</tr>
<tr>
<td>40</td>
<td>.45</td>
</tr>
</tbody>
</table>
Longitudinal studies of personality

- Jack Block; Lives through Time
- Terri Moffitt and Avshalom Caspi: the Dunedin study
  - Birth cohort in Dunedin, NZ has been followed for 20 years
  - Examining, among other things, risk for impulsivity, criminality, effects of stressful childrearing
Moffitt and Caspi: genes for sensitivity or resilience?

- Effect of child upbringing interacts with specific genes
- Good vs abusive parents
- MAOA gene interacts with parental effects to lead to adult criminality and psychopathology
- 5HTT gene interacts with family effects in relationship childhood and adult depression
Cognitive-Affective Personality Systems (CAPS)

- Mischel, W. & Shoda, Y
- If ... Then ... production systems and individual signatures

![Graph showing intra-individual patterns of behavior variability](image)
CAPS: a network of cognitive affective units

CAPS and social interaction: Vivian Zayas

Affective Dynamics

• Personality traits as rates of change in affect
• Tracking affect across time and situation
• Within subject affective measures aggregated across time to estimate individual parameters of sensitivity
• Between subject patterning as a result of these within subject parameters
Personality Research: Review

• Individual differences versus experimentalism
• Theories of individual differences
  – Descriptive taxonomies
    • Folk taxonomies
    • Recent work in folk taxonomy: the Big 5
    • Five Factor Model of Traits

Causal models

Psychometric theory
## The ABCDs of personality

<table>
<thead>
<tr>
<th>Affect</th>
<th>What we feel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavior</td>
<td>What we do</td>
</tr>
<tr>
<td>Cognition</td>
<td>What we think</td>
</tr>
<tr>
<td>Desire</td>
<td>What we want</td>
</tr>
<tr>
<td>Environment</td>
<td>Where we are</td>
</tr>
</tbody>
</table>
Achievement Motivation and the ABCDs

• Achievement as positive Affect upon success
• Achievement as approach Behavior
• Achievement motivation as Cognitive appraisals of task difficulty
• Achievement motivation as Goal setting
Extraversion and the ABCDs

- Extraversion as positive Affect
- Extraversion as approach Behavior
- Extraversion as cognitive bias towards rewards
- Extraversion as performance approach Desires
Anxiety and the ABCDs

• Anxiety as negative Affect
• Anxiety as avoidance Behavior
• Anxiety as cognitive bias towards threats
• Anxiety as performance avoidance Desires
Ways of studying Personality coherence and Affect, Behavior, Cognition, and Goals

- Between individual differences across items
- Between individual differences across situations and across time
- Within person variation across items, situation and time
- Are within person patterns different across people?
The ABCDs of personality

<table>
<thead>
<tr>
<th>Affect</th>
<th>What we feel</th>
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<tbody>
<tr>
<td>Behavior</td>
<td>What we do</td>
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<tr>
<td>Cognition</td>
<td>What we think</td>
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<tr>
<td>Desire/Goals</td>
<td>What we want</td>
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<tr>
<td>Environment</td>
<td>Where we are</td>
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# The Big 5 and the ABCDs

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Causal Models

• Approach and Inhibitory traits
  – Approach/Positive Affect/Positive Emotionality
    • Extraversion/impulsivity/Achievement
    • Problems with simple state theories
    • Traits as central tendency of state
    • Traits as likelihood of state
    • Traits as rates of change in state
  – Avoidance/Inhibition/negative Emotionality
    • Anxiety/Depression
Psychometric Theory: A conceptual Syllabus
Personality theory and personality measurement

• If it exists, it exists in some amount …

• Issues in measurement
  – Latent constructs - observed variables
  – Shape of relationship between latent and observed
  – Reliability of measurement
    • Multiple forms of reliability
Reliability

• How well are we measuring whatever we are measuring?
  – Internal consistency of measures
    • Domain sampling, true score theory
  – Stability of measures
    • Traits versus states
  – Alternate forms/alternate people
Validity

• How well are we measuring what we think we are measuring
  – Face, Concurrent, Predictive, Construct
  – Construct
    • Do measures of the same thing go together/
    • Do measures of different things not go together
    • So what (does it make a difference)
Methods of scale construction

- Empirical
- Rational/Theoretical
- Homogeneous

Do they make a difference?
How to do it
Sources of data

• Not limited to simple self report, need to be sensitive to threats to validity from many sources

• Multi-traits - multi methods and the principles of convergent and discriminant validity
Final research project

• Introduction
  – Review of relevant literature
  – Why is the problem an interesting problem
• Method
  – Enough to be replicated
• Results
  – Appropriate analysis
• Discussion
  – What does it all mean?
Final research project

• Additional comments
  – APA style throughout
  – Writing to be yours, thoughts can be shared with research partners (and others)
  – Analysis - can be done with me
    • Schedule appointments - walk in, email, etc.

Due June 13 (or so).