

Differences
(or: Nature and Nurture)

How are people different?

Why are people different?

Some differences

- Sexual identity
- Sexual orientation
- Happiness
- “Success” and “Failure” in life
 - relationships
 - job satisfaction
 - crime
- **Personality**
- **Intelligence**

Difference #1:
Personality

- A person's general style of dealing with the world, particularly with other people

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Assessing measures of personality

- Reliability
- Validity

Usefulness of the Big 5

- Stable over many years
(More stable after age 30)
- Agreement across multiple observers
- Predicts real-world behavior
 - Conscientiousness ... martial fidelity
 - Openness ... job changes
 - Extroverts ... look people in the eye, more sexual partners

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Difference #2: Intelligence

- 1000 experts:
- ALL: Abstract reasoning, problem-solving, capacity to acquire knowledge
- MOST: memory, mental speed, linguistic competence, mathematical competence, mental speed, knowledge, creativity

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Defining & measuring intelligence

- Charles Spearman (1863-1945)
 - two factors
 - "g" = general intelligence
 - "s" = specific ability
 - score on any given test depends on a combination of these 2 factors
 - g accounts for the similarity in test results
 - s accounts for the differences in test results
 - athletic analogy

Modern intelligence tests

- The Wechsler tests
 - used more widely now than Stanford-Binet
 - modeled after Binet's, also made adult test
 - WISC-III for children
 - WAIS-III for adults

Standardized scoring of Wechsler tests

- All raw scores converted to standardized scores
- Normal distribution
- Mean of 100
- Standard deviation of 15

How valid are IQ tests?

- http://www.lrainc.com/swtaboo/taboos/wsj_main.html
- http://www.lrainc.com/swtaboo/taboos/apa_01.html

How valid are IQ tests?

- School achievement
- Prestigious positions
- On-the-job performance & other work-related variables

But ...

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But ...

-- cultural acceptance of IQ makes the validity of IQ tests at least in part a self-fulfilling prophecy

What do IQ tests measure about your mind?

- Mental speed and span of working memory
 - typically use a digit span test to measure this
 - more recent studies find significant correlations between reaction times and IQ scores

Why are people different?

Why are people different?

Heredity + Environment
(Nature + Nurture)

Heredity

- Proportion of variance due to genetic differences
 - (0.00 - 1.00)
- NOT proportion of an individual's trait that is due to genes!

Environment

- Shared environment
 - proportion of the variance due to environment shared by family members (e.g., variance caused by parents)
- Nonshared environment
 - proportion of all other variance (e.g., random events)

$$\begin{aligned} &\text{Heredity} + \\ &\text{Shared Environment} + \\ &\text{Nonshared Environment} = \\ &1 \end{aligned}$$

The tools of behavioral genetics

- Monozygotic (MZ) twins are clones (100% overlap in genes)
- Dizygotic (DZ) twins are just like siblings (50% overlap in genes)
- Adopted siblings have no special genetic overlap (0%)

- Two people raised in the same house by the same parents have 100% the same shared environment

The tools of behavioral genetics

Are MZ twins much more similar than DZ twins?
(If so, big role of genes -- high heritability)

Are MZ twins just as similar as DZ twins?
(If so, low role of genes -- low heritability)

Are adopted children highly similar to their brothers and sisters?
(If so, high role of shared environment)

Are twins reared apart very similar
(If so, high role of genes)

Two big findings of behavioral genetics

1. High heritability (0.3 - 0.8)
... for almost everything

Side topic:
Does this mean that group differences have to largely be due to genes?

- Clear differences in IQ scores among American "racial" groups.
- Such groups are partially socially constructed
- But some genetic differences -- e.g., vulnerability to disease

Side topic:
Does this mean that group differences have to largely be due to genes?

No

Evidence that group differences have environmental--not genetic--causes

1. IQ differences correspond to socially-defined groups, not genetic groups

Evidence that group differences have environmental--not genetic--causes

2. We know that IQ can differ radically across groups without any genetic differences

Two big findings of behavioral genetics

1. High heritability (0.3 - 0.8)
... for almost everything

Two big findings of behavioral genetics

2. Almost all of the rest (0.2 - 0.7) is due to non-shared environment
 - shared environment counts for little or nothing
 - when it comes to personality or intelligence, an adopted child is no more similar to his siblings than to a stranger
 - e.g., the IQ correlation between genetically-unrelated adults who were raised in the same family is about 0.

Harris' response

- How sharper than a serpent's tooth
- To hear your child make such a fuss
- It isn't fair—it's not the truth
- He's fucked up, yes, but not by us.

There MUST be an effect of shared environment!!!

Of course, parents have an effect,
After all ...

Good kids have good parents

- No doubt at all
 - High correlation between parent and child for everything
 - reading
 - religion
 - criminality
 - income
 - intelligence
- But ...

Good kids have good parents

Parents do something that affects their kids

Parents share the genes with the kids

The child is making the parents good, not vice-versa

The worst study in the world

- Family meal -> drug-free kids
- Drug-free kids -> family meal
- Good family -> drug-free kids + family meal
- Bad family -> stoned kids + no family meal

12-year-olds -> more likely drug-free and family meal

17-year-olds -> more likely stoned and no family meal

Look, I know that my
Mom/Dad had a huge role in
my life

That's why I am so happy and
successful

Look, I know that my
Mom/Dad had a huge role in
my life

That's why I am so miserable and
screwed-up

How do you know?

- How do you partial out genes versus environment?
(are you adopted?)
- How do you figure out which is the cause and which is the effect?

But if parents don't mold their
children's personalities, why
should they treat their
children nicely?

- Because they love them
- Because they want them to be
happy
- Because they want to have good
relationships with them

Reading Response

Explain the Flynn effect