

Psychology 2200

Developmental Psychology I: Fundamentals

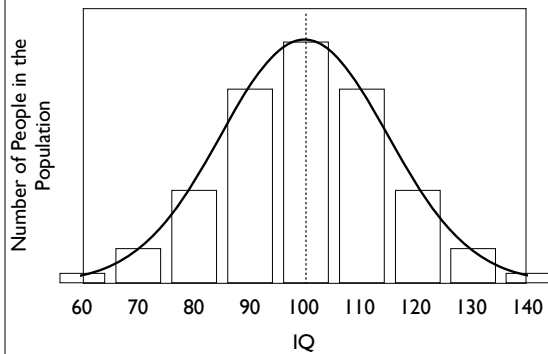
Intelligence

learning objectives

- Discuss whether intelligence matters and **why**
- Describe the nature vs. nurture debate for intelligence
- Explain **how** data seem to support a one-sided conclusion to the debate
- Critically evaluate that evidence and draw a new conclusion that can better account for the outcome of adopted children
- Explain **what** intelligence is (i.e. how it's measured)



IQ distribution

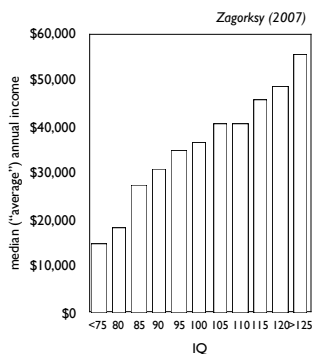


IQ and annual income

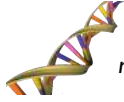
1 IQ point

per year

- IQ and income correlated at $r = +.30$
- higher IQ means
 - more money
 - more prestigious job
 - more liked by peers
 - less delinquency
 - less mental disorders



how do people become intelligent?



nature



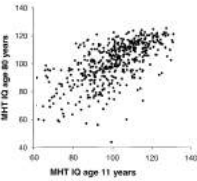
nurture

- Is intelligence more a result of genes (nature) or environment (nurture)?
- A. NURTURE (more than nature)
- B. BOTH EQUALLY
- C. NATURE (more than nurture)

Is IQ stable?

$$r = .66$$

Deary et al. (2004)



If your IQ is above 100 at age 11, the chance that it will be above 100 at age 80 is **83%**



a solution

identical twins raised apart



adopted siblings raised together



- If these were real, representative data, is intelligence more a product of nature or nurture?
- A. NURTURE (more than nature)
- B. BOTH EQUALLY
- C. NATURE (more than nurture)



what if..?



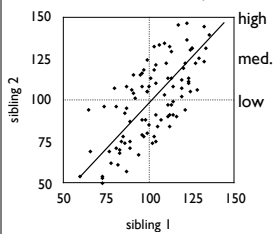
nature



nurture

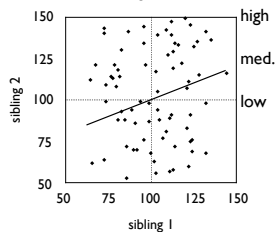
$$r = +.75$$

identical twins raised apart



$$r = +.28$$

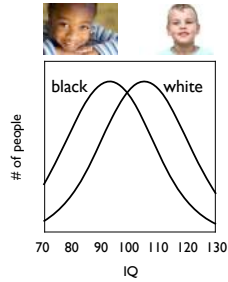
adopted siblings raised together



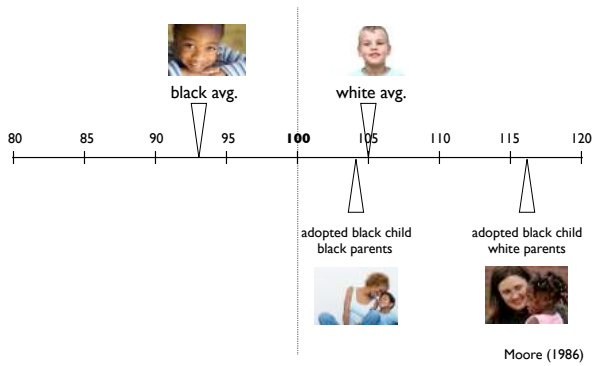
representative data

IQ and race

- In the US, the average IQ of blacks is 93
- the average IQ of whites is 105
- difference of 12 points
- In Canada, First Nations score lower than white people by about 10 points (Vanderpool & Catano, 2008)



if IQ is genetic & stable, then

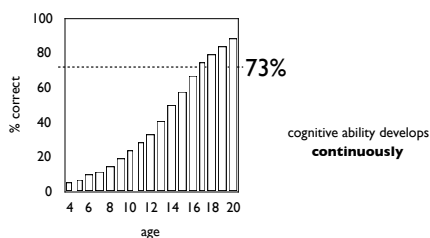


new conclusion

- IQ predicts a variety of important life outcomes
- IQ is determined by both genes and environment (about equally)
- IQ is pretty stable throughout the lifespan
- differences between racial groups exist
- these are mostly due to environmental reasons

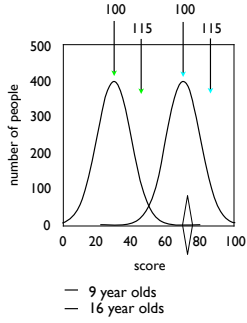
I got 73%. What's my IQ?

it depends!



calculating IQ

age standardized




standardization
for each age, IQ scores have
mean, $M = 100$
standard deviation, $SD = 15$

| IQ | percentile |
|-----|------------|
| 60 | 0.4% |
| 70 | 2% |
| 80 | 9% |
| 90 | 25% |
| 100 | 50% |
| 110 | 75% |
| 120 | 91% |
| 130 | 98% |
| 140 | 99.6% |

what is IQ?

- not concerned with the process of intelligent action
- how to figure things out
- coming lectures (e.g., Piaget, information processing)
- product-oriented performance on a certain kind of test
- test measures reading and math skills
- bias towards a culture of science/business/engineering?
- is intelligence really only about these sorts of tasks?
 - if unified, it doesn't matter
 - if distinct, it does matter

intelligence is

| | | |
|-----------------------|---|----------------------|
| A. distinct | test | B. unified |
| math intelligence |  | math intelligence |
| art intelligence | | art intelligence |

Is intelligence unified or distinct?

people are
either generally
good at things
or not

people are
good at some
things, not so
good at others



Ken Robinson

<4 mins



Gillian Lynne



www.ted.com
