

Unit 3C

Genes: Our Biological Blueprint





Nature v. Nurture

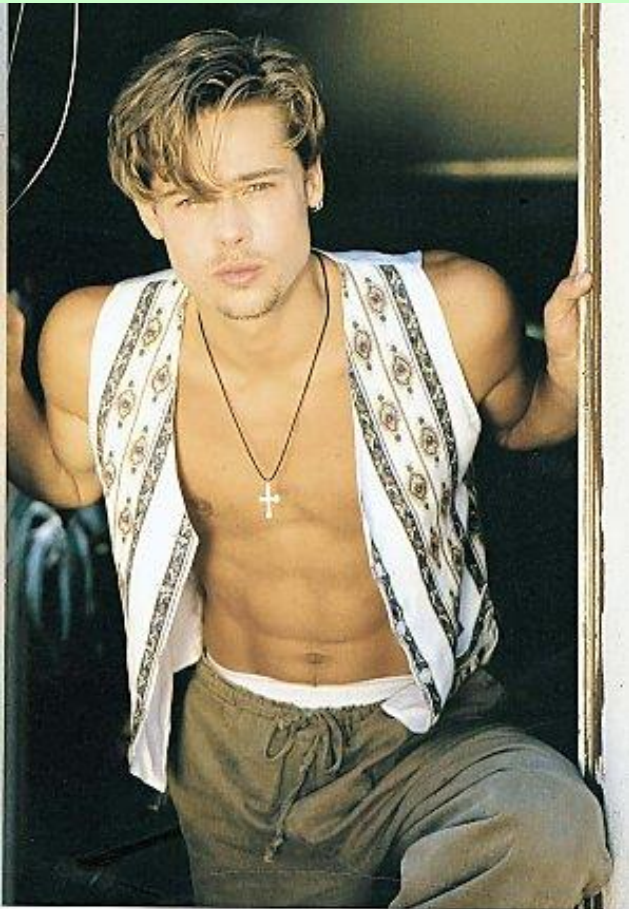


Genetic Influences on Behavior

The Nature Argument (is sometimes compelling)

This guy will never be....

This guy!!!



Why does Brad Pitt look the way he does?

Genes: Their Location and Composition

Nucleus
(the inner area of a cell that houses chromosomes and genes)

Chromosome
(threadlike structure made largely of DNA molecules)

Gene
(segment of DNA containing the code for a particular protein; determines our individual biological development)



Cell
(the basic structural unit of a living thing)

DNA
(a spiraling, complex molecule containing genes)

In the nucleus of every cell we have 46 chromosomes.....

Chromosomal Abnormalities

- Gender comes from 23rd pair of chromosomes...men have XY...woman have XX.
- Turner's syndrome is single X.
- Klinefelter's syndrome is extra X...XXY
- Down syndrome...extra chromosome on 21st pair.



medgen.genetics.utah.edu



Evolutionary Psychology: Explaining Universal Behaviors

Evolutionary psychology is the science that seeks to explain why humans act the way they do.

Evolutionary psychology seeks to reconstruct problems that our ancestors faced in their primitive environments, and the problem-solving mechanisms they created to meet those particular challenges.

From these reconstructed problem-solving adaptations, the science then attempts to establish the common roots of our ancestral behavior, and how those common behavioral roots are manifested today in the widely scattered cultures of the planet.

The goal is to understand human behavior that is universally aimed at the passing of one's genes into the next generation.

Look at our Behaviors...

Can you answer these questions using evolutionary psychology?

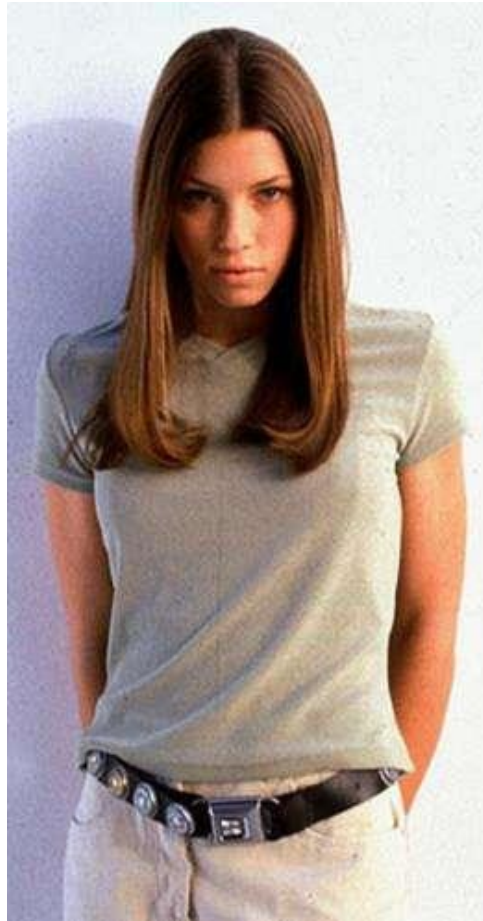
- Why do infants fear strangers when they become mobile?
- Why are most parents devoted to their children?
- Why do we divide people into categories?
- Why do we have more phobias about spiders and snakes than electricity and nuclear weapons?

Now, the big one?

What do men and women want? (According to Evolutionary Psychology)

Men want:

- Healthy
- Young
- Waist 1/3 narrower than hips.



Women want:

- Wealth
- Power
- Security



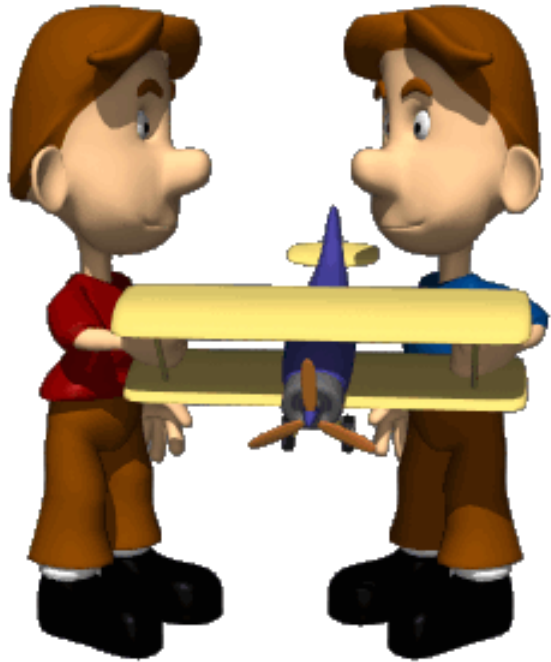
Can this change?



Behavior Genetics

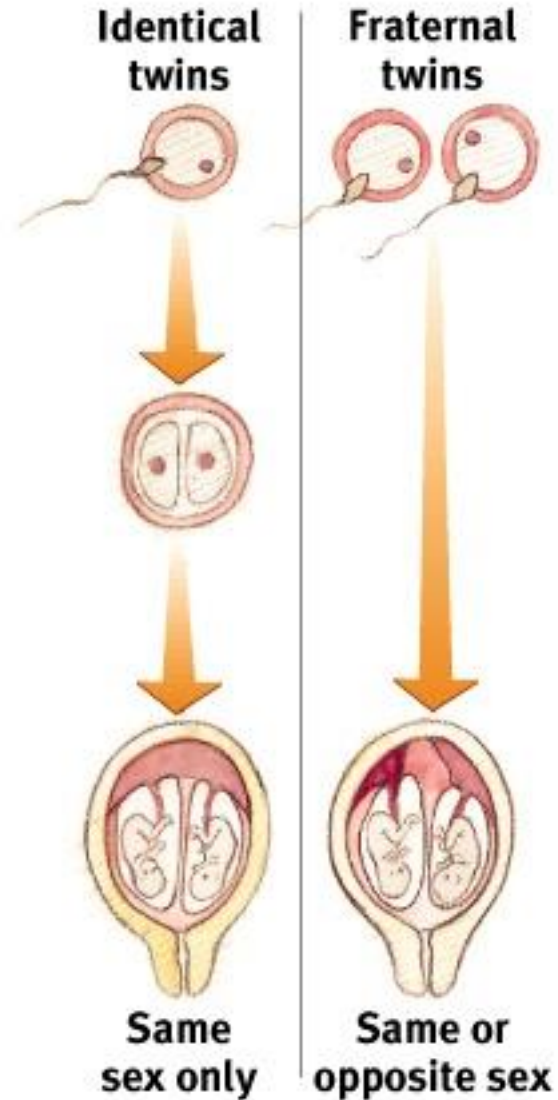
The study of the power and limitations of genes on who we are.

Twins



- Best way to really study genetics because they come from the same zygote.
- Bouchard Study
- .69 Correlational coefficient for IQ tests of identical twins raised apart.
- .88 raised together.

What are the different types of twins?



Twin Studies: The results

- To summarize the countless amount of studies: twins (especially identical), whether or not they are raised in the same environment are very much alike in many ways.

Temperament Studies

- A person's characteristic emotional reactivity and intensity.
- They remain relatively stable over time.



Heritability

- The proportion of variation among individuals that we can attribute to genes.
- It is a mathematical formula.
- Mark Twain explains it best using the barrel example.

Nurture

Environmental Influences on Behavior



Types of Environmental Influences

Parents



Prenatal



Experience



Peer Influence



Culture



Gender



How Much Credit (or Blame) Do Parents Deserve?

- You and your siblings grow up in the same environment, are you all the same?
- Parents effect your belief systems and values much more than your personality.
- Parents take too much credit for success and too much blame for failures.
- Extreme environmentalism can be VERY dangerous, why?



Are children clay to be molded by their parents?

Experience and Brain Development

I spend a lot of \$\$\$
sending Sammy to
pre-school.

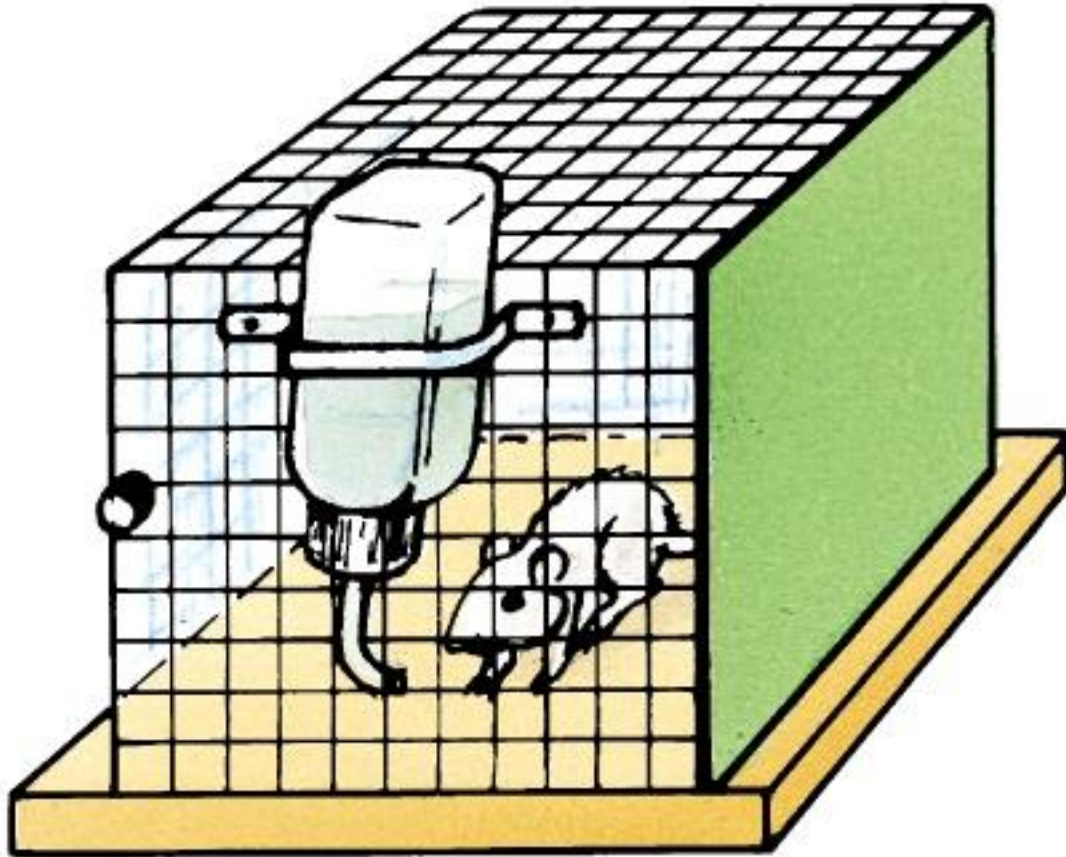
They just play with a
lot of toys.

I could use that \$\$\$
for a whole lot of PS2
games.

Is it money well
spent?



Brain cells is an impoverished environment.

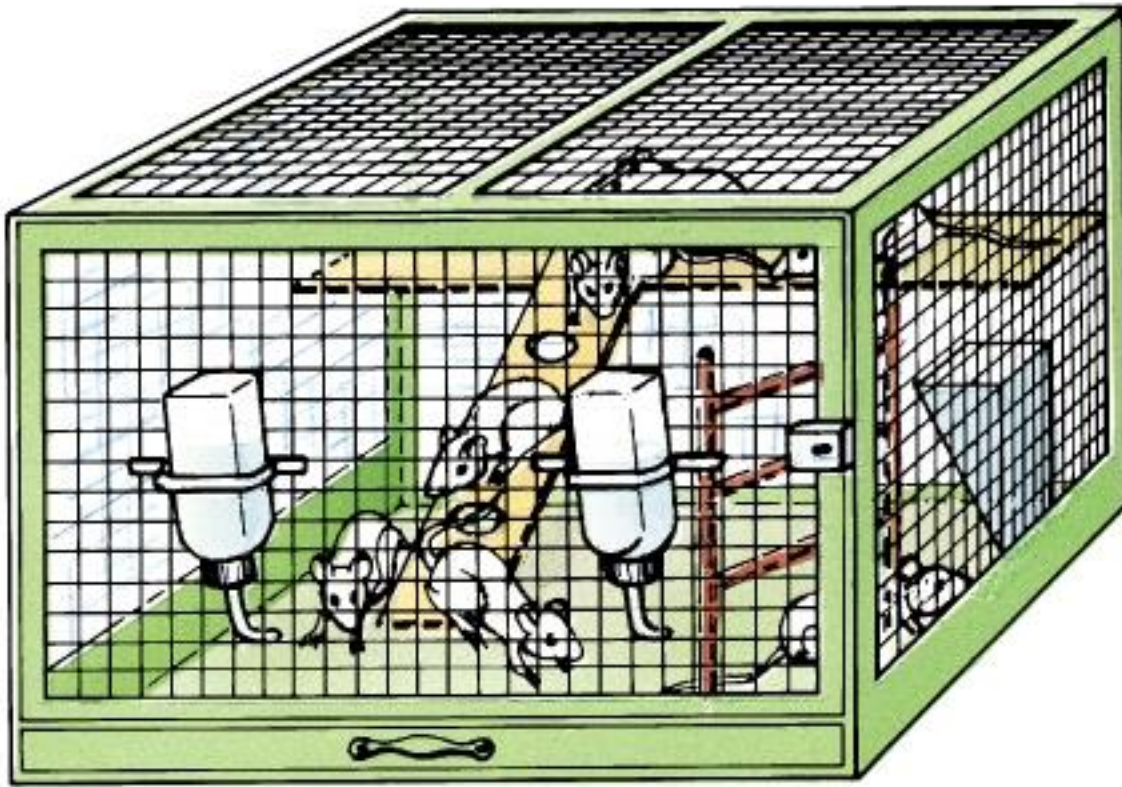


Impoverished environment

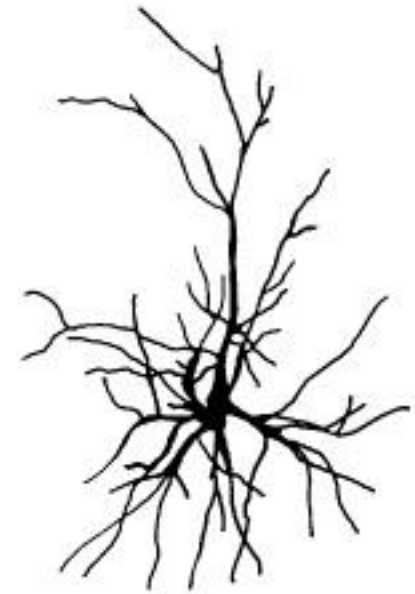


Rat brain cell

Brain cells in an enriched environment.



Enriched environment



Rat brain cell

What does this mean for humans?

- If children from impoverished environments given stimulating infant care, they score better on intelligence tests by age 12 than counterparts.

Use it or lose it

Perhaps the biggest environmental influence, at least by your age may be....

Peer Influence

- I can't get Sammy to clean up his toys, but when he sees his friends clean up in school, he jumps to it.
- **"Selection effect"** we seek out people with similar interests- that may explain why we seem to conform to our peers.



Culture

- Behaviors, attitudes, traditions etc... of a large group that have been passed down from one generation to the next.

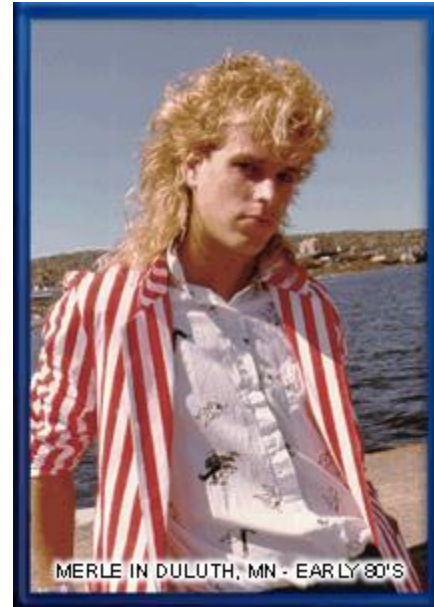


Cultural Variations

- To understand how cultures effect who we are it is important to recognize our cultural **norms**: an understood rule for acceptable behavior.
- Individual v. Collectivistic Cultures
- Why is it so hard to identify our own cultural norms?

Variations over Time

- Different generations of the same culture may also have differing norms.



Memes

- self-replicating ideas, fashions or innovations passed from person to person.



Toys R Us Theme Song



Where's the Beef Lady.



Budweiser Frogs

Gender

- We already know the nature differences.
- XX v XY
- But that focuses on SEX:
- We are going to discuss GENDER:
What is the difference?



Gender Roles

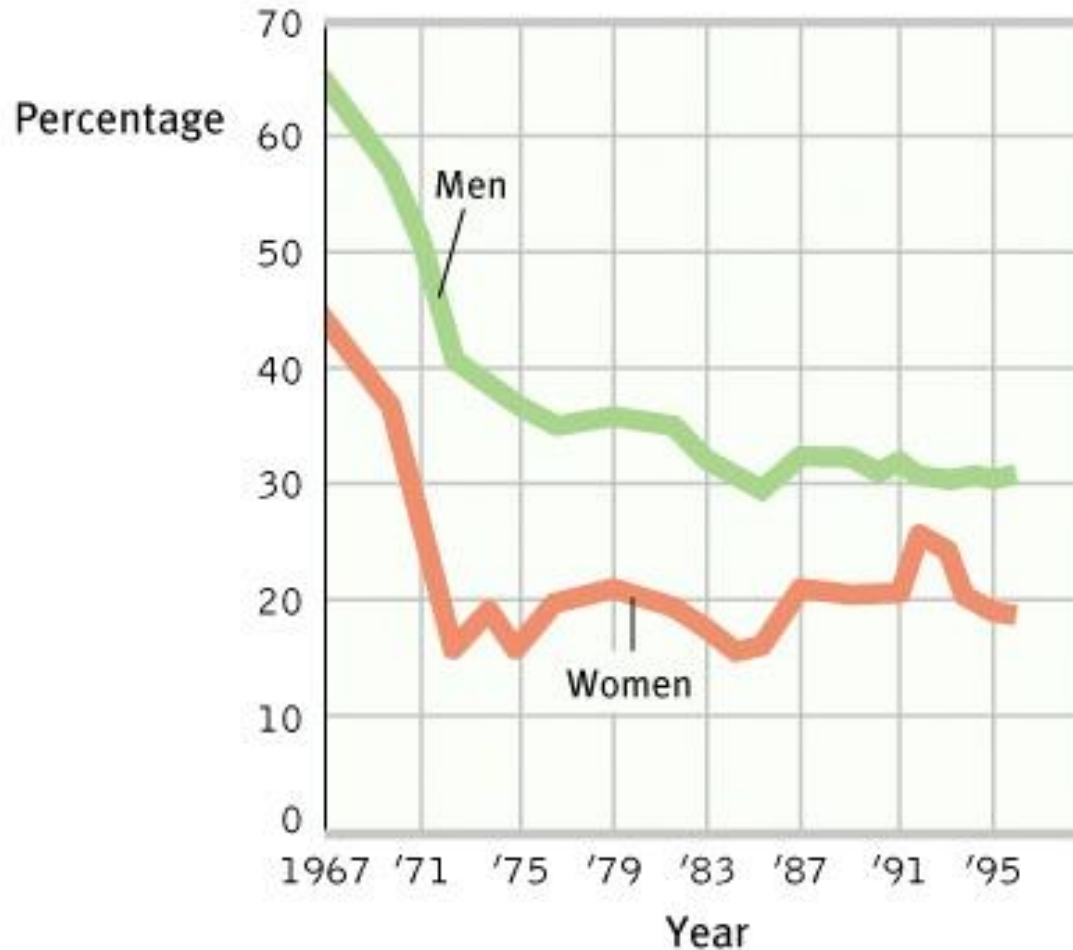


- A set of expected behaviors for males and females
- List some of your gender roles.

What gender role is she breaking?

Changing Attitudes about Gender Roles

Percentage agreeing
“The activities of married women
are best confined to home and family”



Gender Identity

- Our own sense of male or female.
- Personalized to us
- We realize our gender identity through **gender-typing**: acquiring our gender identity.



Two Theories of Gender-typing

Social learning theory

Rewards and
punishments
+
Observation and
imitation of
models



Gender-typed
behavior

Gender schema theory

Cultural learning
of gender



Gender schema
(looking at self and
world through a
gender "lens")



Gender-organized
thinking
+
Gender-typed
behavior

Social Learning Theory



I play Baseball. Sammy imitates my behavior. I reward Sammy.



Sammy's Mom
puts on makeup.

Sammy copies her.

I punish Sammy.