

2016-10-24

## Genetics

- **Chromosome** = a bundle of DNA and histones that form a condensed structure in the nucleus
  - Some people experience an irregular number of chromosomes
  - **Trisomy** = three chromosomes in a pair
  - **Monosomy** = only one chromosome in a pair
  - Irregularities usually happen in sex chromosomes(23<sup>rd</sup> pair)
  - **Turner's Syndrome** = monosomy 23; *only* one X as 23<sup>rd</sup> pair
  - **Down Syndrome** = trisomy 21
- **DNA(Deoxyribonucleic acid)** = long strand of nucleotide bases that serves to encode hereditary information
  - **Duble Helix** = geometric shape of DNA; described as a ladder that is twisted
- **Histone** = a protein that DNA can wrap around to reduce overall volume
- **Codon** = a group of three nucleotide bases that match with tRNA to assemble proteins
  - 1 codon corresponds to 1 amino acid instruction(INSERT, START, END, etc)
- **Allele** = a specific version of a gene
- **Genotype** = the collection of alleles one possesses
- **Phenotype** = the physical traits you exhibit
- **Dominant Allele** = an allele whose expression takes precedence over that of **recessive** alleles
- **Recessive Allele** = an allele whose expression is inhibited by the presence of a **dominant** allele

## Sex-Linked Traits

- **Sex-Linked Traits** = phenotypes involved with the X or Y chromosomes
- typically *recessive* and located on X chromosome
  - Y chromosome actually contains very few genes
- Examples
  - Color blindness
  - Baldness
  - Hemophilia

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## Evolutionary Psychology

- **Natural Selection** = a mechanism set forth by Darwin that describes how genetic information can spread through a population if it confers a survival benefit
- **Mutation** = errors in the genetic code
  - Can be caused by faulty replication
- **Evolutionary Psychology** = the study of behavior and mental processes using natural selection as an explanatory mechanism

## Nature vs Nurture

- *Is our behavior more a product of our **genetics** or of our **environment**?*
  - **Identical Twins** = two organisms that developed from the same embryo
    - also called **Monozygotic twins**
  - **Fraternal Twins** = two organisms that developed from different fertilized embryos but gestated in same womb
    - also called **Dizygotic twins**
  - **Separated Twins** = identical twins that are separated at birth
    - Useful for studying influence of environment
  - **Adoption Studies** = studies of different children who are raised as if genetically related
    - Useful for studying influence of genetics
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## Behavior Genetics

- **Behavior Genetics** = a term that describes behaviors that are influenced by genetics
- **Temperament** = a unique set of traits about reaction and emotional intensity
- **Heritability** = the proportion of phenotypic variation that can be attributed to genetics

## Environmental Influences

- **Culture** = a group of societal expectations and conventions that influence how we think
  - **Norm** = a cultural expectation that is hard to break
    - Similar to a **taboo**
  - **Personal Space** = a “buffer-zone” that is expected between people while interacting
  - **Memes** = units of culture that can spread among the population similar to genes
    - **Dank Meme** = a zesty meme that is masterfully crafted
  - Styles of child-rearing
    - Western parents tend to emphasize *independence*
      - \* Results in teenagers hating their adolescence
        - I wish I was dead
    - Non-Western parents tend to emphasize *interdependence*
      - \* Stronger sense of “family” or “community”
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## Prenatal Development

- **Developmental Psychology** = the branch of psychology that focuses on the emergence of physical, cognitive, and social capabilities
  - Characterized by multiple **stages**
- **Embryonic Development**
  - **Fertilization** = sperm cell enters egg and merges genetic information
  - **Zygote** = fertilized egg
    - \* Rapidly “cleaves” or divides for a period of about two weeks
    - \* Eventually turns into an **embryo**
  - **Embryo** = stage after zygote but before **fetus**
    - \* Lasts from second week to about second month
  - **Fetus** = organism that develops into a human
    - \* Lasts from second month until birth
  - **Teratogens** = any substance that can harm the developing offspring in the womb
    - \* **Fetal Alcohol Syndrome(FAS)** = developmental problems caused by excessive consumption of alcohol on the mother’s part
      - Symptoms include mis-sized head or death

## Infant Behavior

- **Infant Reflexes** = behaviors hard-coded into the infant's brain
  - Rooting = turns mouth towards anything that touches their face
  - Grasping = fingers will curl around an object placed in their hand
  - Stepping = legs will take steps instinctually if held up
  - Sucking = will place any object near face into their mouth
  - Startle(Moro) = throws arms out, arches back, and grabs onto something
  - Babinski = curls toes when feet are tickled

## Sensory Development

- Depth perception
  - Emerges around 6th month
  - **Visual Cliff Experiment** = babies will just crawl off the edge of a fall
- Sight
  - **Habituation** = a trend of decreasing response when frequency of exposure is increased
    - \* Babies get bored with your stupid toys