

# **Introductory Psychology**

**Psyche—Refers to the human soul, spirit or mind**

- **In classical mythology Cupid, the son of Venus fell in love with Psyche. Venus became jealous of Psyche and imposed many hardships upon her, but eventually Psyche was reunited with Cupid and made immortal.**

- **Ology—suffix for learning**
- **1879—Reflections of the Human Mind**
- **1900—The Science of Mind**
- **1950—The Science of Behavior**

## **Define Psychology**

- **The Science that seeks to Describe, Understand, Predict, and Control/Change/Modify the Behavior of Organisms.**
- **Science versus Art**
  - **Scientific method**
  - **John Locke—Blank Slate**
  - **Empiricism**

## **Describe**

- **What**
- **Data and facts—NOT on interpretation or inferences**
- **Observe what is happening**

## **Understand**

- **Why**

## **Predict**

- **When**
- **All of us predict behavior—if we could not life would be chaotic**
- **But, if everything 100% predictable life would be a bore.**



## **Control/Change**

- **Modify**

## **Behavior**

- **Everything rests on this concept**
- **Different types of psychology--all concerned with behavior.**
- **Behavior is the main focus of Psychology**

## **Organisms**

**Not just humans—why?**

- **Psychologists**
  - **Study Psychology**
  - **Where employed?**
  - **Most are employed at Colleges and Universities (about 50%)**
    - **Numbers are different depending on how the data was collected.**
  - **Only about 15% in private practice**

## ■ History

- Philosophy/Horse and teeth story
- Five of first 13 Presidents of APA were Philosophers
- Thus strong philosophical background

# Structuralism

- Wundt, Leipzig, 1879, Titchener
- Introspection—Method of Study-scientific?
  - Must be smart and verbal
  - Prejudice
- Experience is the Subject Matter
- ?What are the elements of consciousness and how are these mental processes interrelated or combined?



# Functionalism

- Dewey, James, Cattell
- Objective Observation plus some introspection—Method of Study
- Whole Organism—Subject Matter
- ?How does the organism adapt to the environment?

# Behaviorism

- **Watson, Skinner**
- **Objective Observation—Method of Study**
- **Stimulus, Response—Subject Matter**
- **?Given a stimulus what was the response?**
- **?Given a response what was the stimulus?**

# Psychoanalysis

- **Freud**
- **Free Association, Dream Analysis, Projective—Method of Study**
- **Unconscious Motivation—Subject Matter**
- **?How does Unconscious Motivation influence behavior?**

# Humanism

- Maslow, Rogers
- Subjective experiences—Method of Study
- Potentials—Subject Matter
- ?What are people's potentials?



## **Gestalt (form or pattern)**

- **Wertheimer, Koffka, Kohler**
- **Conscious experience—Method of Study**
- **Perception—Subject Matter**
- **?How does perception influence behavior?**

# Different Fields

- **Experimental**
  - **Oldest**
  - **Conducts research in all areas**
- **Physiological/Biopsychology/  
Psychopharmacology**
  - **Concerned with how bodily processes and behavior interact**
  - **Closely related to Experimental psych and grew out of Experimental**

## ■ Clinical

- What most people envision as being typical of psychology
  - Treat people with problems
  - Can people lie?
- 
- Psychiatrist—M.D.
  - Clinical—Ph.D.
  - Counselor—Ed.D.

- **Community**

- **Prevention of mental disorders**
- **Community and Clinical both impt.**

- **Developmental**

- **Conception to Death**
- **Conception to birth?**
- **Old age—am I still developing?**



- **Social**

- **Person and Society**
- **Will a person help?**

- **Personality**

- **Individual and why they do what they do**

- **Environmental**

- **How the environment influences behavior**

- **Human Factors**

- **Machines and people**
- **NASA**

- **Industrial**

- **Jobs and people**

- **How psychology relates to sociology, economics, biology, physics, chemistry, and anthropology.**

# How Psychologists Gather Data

- **Field Methods**
  - **Naturalistic and Participant Observation**
  - **Jane Goodall**
  - **Record what is there**
  - **Do not modify conditions**
  - **Interpretation of data difficult—Only descriptive**

- **No cause and effect relationships**
- **No control of the situation**
- **Sociologists and Anthropologists**
  - **Hell's Angels**
  - **Cab Driver**
  - **College Student**



## ■ Tests and Surveys

- Individual versus Group
- My exam versus are you a democrat or republican
- Still recording only what is out there
- Takes a more narrow focus
- Not interested in everything
- Use as a tool of prediction/Gallup and Harris Polls
- No control of the situation. What made you get an "A" on the test? What made you a republican?

- **Experimentation (Experimental Method)**
  - **Preferred method**
  - **Actually control or keep constant**
  - **We are trying to establish cause and effect relationships—this is the most important aspect of experimentation**
    - **Rule out alternative explanations**

**Independent Variable**—what is deliberately or systematically manipulated or changed by the experimenter

**Dependent Variable**—what we want to look at or what is measured

**Control Variable**—what is held constant

**Confounded or Extraneous Variable**—gives alternative explanations

**Experimentation is used to try to establish cause and effect relationships**

- **Control Group**
  - **Sets a baseline**
  - **Use for comparison**
  - **If we do not have a control group out data is probably meaningless.**



- **To determine whether men or women are better at mathematic you give the same math test to a group of both genders ho were the same age, general intelligence and educational background.**
- **You show a psychology class a color video and an anthropology class the same exact same video in black and white in an attempt to find out whether color videos are more educationally effective compared to black and white videos. You test both classes later on how much they have learned.**

- You want to determine if drinking a cup of coffee prior to class will improve test performance. You have half of the class come at 7:45 am and give them a cup of coffee. The rest of the class comes at 8:15 am but is given no coffee. The average age of the two groups is 22.
- You study the changes of blood pressure of subjects reading textbooks compare to murder mysteries.

- **You wish to know what the effect of factor A is upon factor B.**
- **You divide this class into three groups to study the effect of using workbooks upon the level of academic achievement. The first group is taught with workbooks, the second group is taught using workbooks occasionally, and the third group is taught without the use of workbooks. All groups get the same lecture, by the same professor, at the same time of the day.**



- **Metal Kettle and Copper Kettle.**
  - **List all confounded variables.**
- **Adrenalin and running speed.**
  - **List all confounded variables**
  - **How can we do this within an hour and have confidence in your results?**



- **Random Assignment**
  - **Only reliable way to control for unknown sources of variation. (Confounded variables that we are unaware of.)**
- **Single and double blind models**
- **Experimenter Bias—Robert Rosenthal**
  - **Animal and human studies**
  - **Expectations can influence others.**
- **Hawthorne Effects**

- **Demand Characteristics**
  - How subjects “should” behave
  - Look for situational cues
  - Playing the role of a good subject
- **Placebo Effects—Pharmaceutically inert or inactive substance. Used to help control for suggestion and expectation.**
- **Milgram studies**
- **Ethics**
  - To ensure that subjects are protected from physical and psychological harm

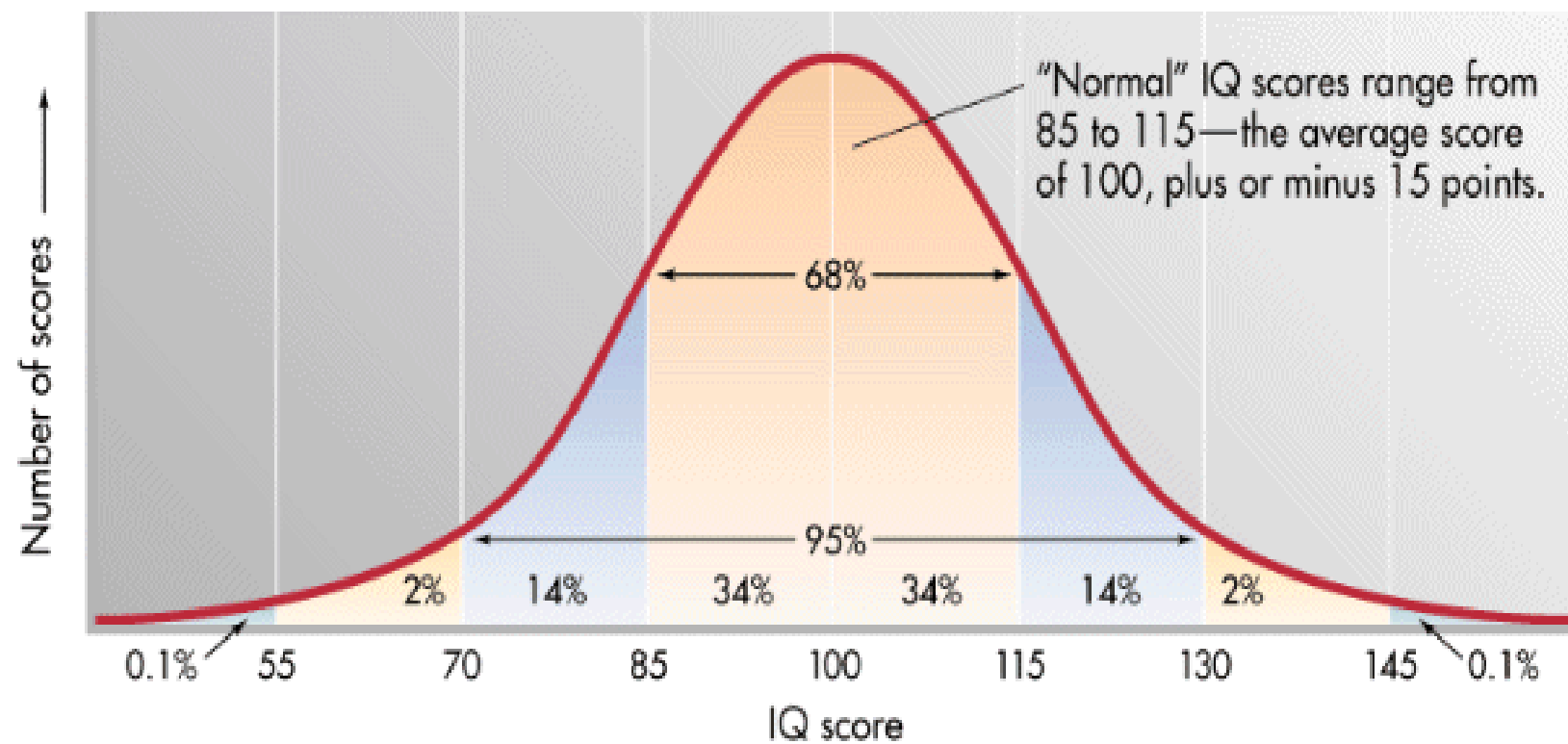
# STATISTICS

- What do we do with the information once we have it?
  - 500 IQ scores from WSU—what do they mean?
- Statistics
  - Simplify and summarize data to make it more understandable
  - Many students afraid of this.
  - Can you add, subtract, multiply, divide?
  - Only class all psychologists have to take is statistics

- **Measures of Central Tendency**
  - **Tendency of scores to cluster around a common point.**
  - **What happens in a normal or bell curve.**
- **Mode—most frequently occurring score—least mathematical**
- **Median—middle—must put in an ordered array**
- **Mean—most common—most mathematical—influenced by extremes**



- **Measures of Variability**
  - **How scores are distributed or vary from the mean**
- **Range—High minus the Low score—Extremes**
- **Standard Deviation**  
**68%, 95%, 99%**  
**34%, 13.5%, 2%, 0.5%**



- **Z-Scores**

- **Standardized Scores**
- **Transformation into standardized**
- **Compare apple and oranges into fruits**

- **Correlation**

- **What the effect of one variable might have on another variable**
- **Talk about relationships between variables**
- **Prediction**

- **Between -1.00 and +1.00**
  - **Sign shows direction not magnitude**
  - **Number indicates magnitude or strength of the correlations**



# Human Nervous System

```
graph TD;
    HNS[Human Nervous System] --> CNS[Central Nervous System (CNS)];
    HNS --> PNS[Peripheral Nervous System (PNS)];
    CNS --> CNS_desc[Brain and spinal cord<br/>interneurones];
    PNS --> PNS_desc[Everything else<br/>sensory and motor neurones];
    PNS --> Somatic[Somatic Nervous System];
    PNS --> Autonomic[Autonomic Nervous System];
    Somatic --> Somatic_desc[Voluntary<br/>Input from sense organs<br/>Output to skeletal muscles];
    Autonomic --> Autonomic_desc[Involuntary<br/>Input from internal receptors<br/>Output to smooth muscles & glands];
    Autonomic --> Sympathetic[Sympathetic Motor System];
    Autonomic --> Parasympathetic[Parasympathetic Motor System];
    Sympathetic --> Sympathetic_desc['Fight or flight' responses<br/>Neurotransmitter: noradrenaline<br/>'Adrenergic System'];
    Parasympathetic --> Parasympathetic_desc[Relaxing responses<br/>Neurotransmitter: acetylcholine<br/>'Cholinergic System'];
```

## Central Nervous System (CNS)

Brain and spinal cord  
interneurones

## Peripheral Nervous System (PNS)

Everything else  
sensory and motor neurones

## Somatic Nervous System

Voluntary  
Input from sense organs  
Output to skeletal muscles

## Autonomic Nervous System

Involuntary  
Input from internal receptors  
Output to smooth muscles & glands

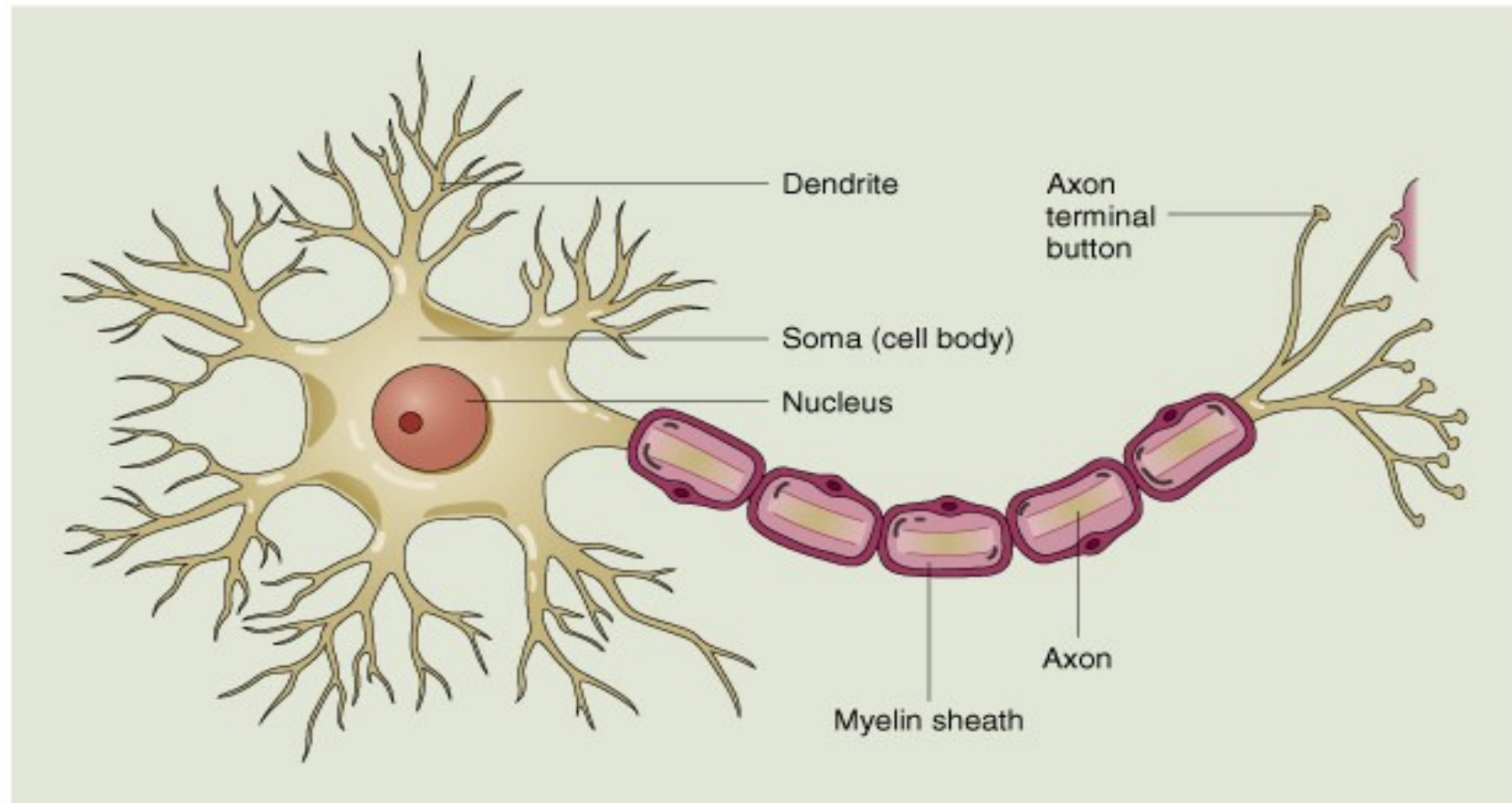
## Sympathetic Motor System

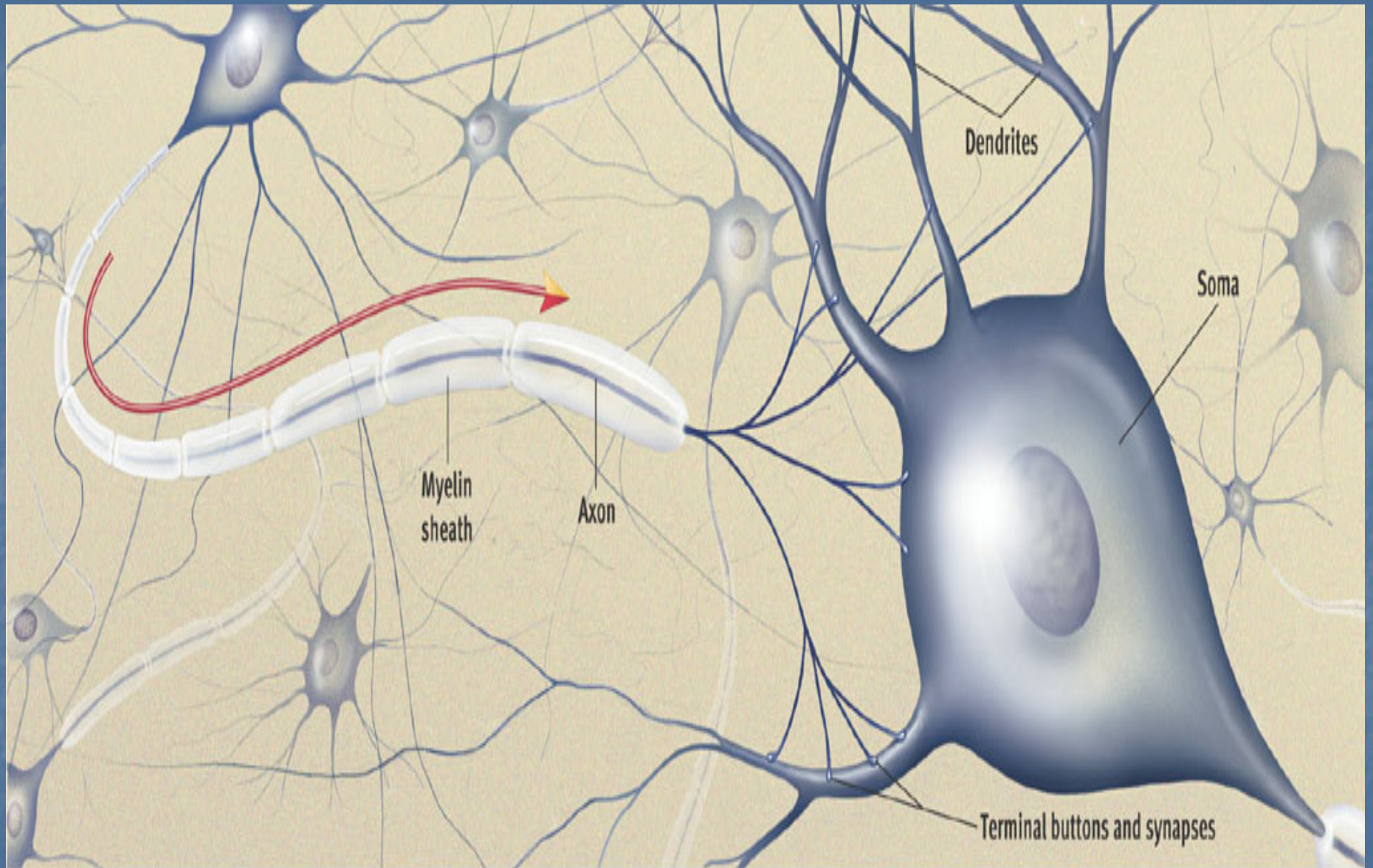
'Fight or flight' responses  
Neurotransmitter: noradrenaline  
'Adrenergic System'

## Parasympathetic Motor System

Relaxing responses  
Neurotransmitter: acetylcholine  
'Cholinergic System'

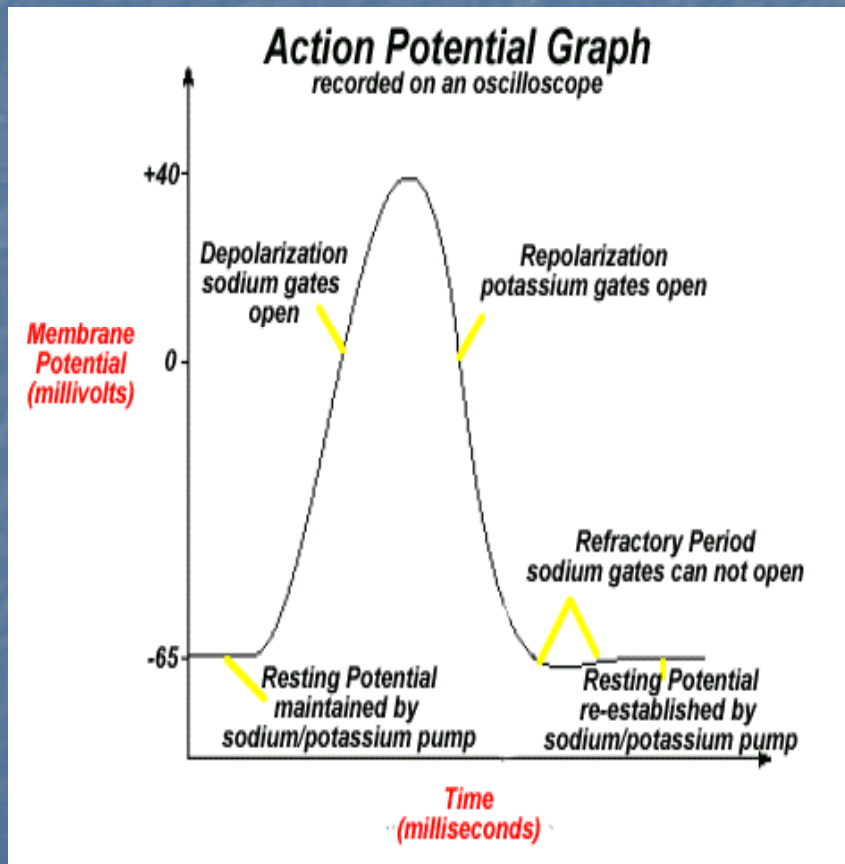
# THE NEURON







# ACTION POTENTIAL



- Resting Potential
- Threshold
  - All-Or-None Law
- Absolute Refractory Period
- Relative Refractory Period



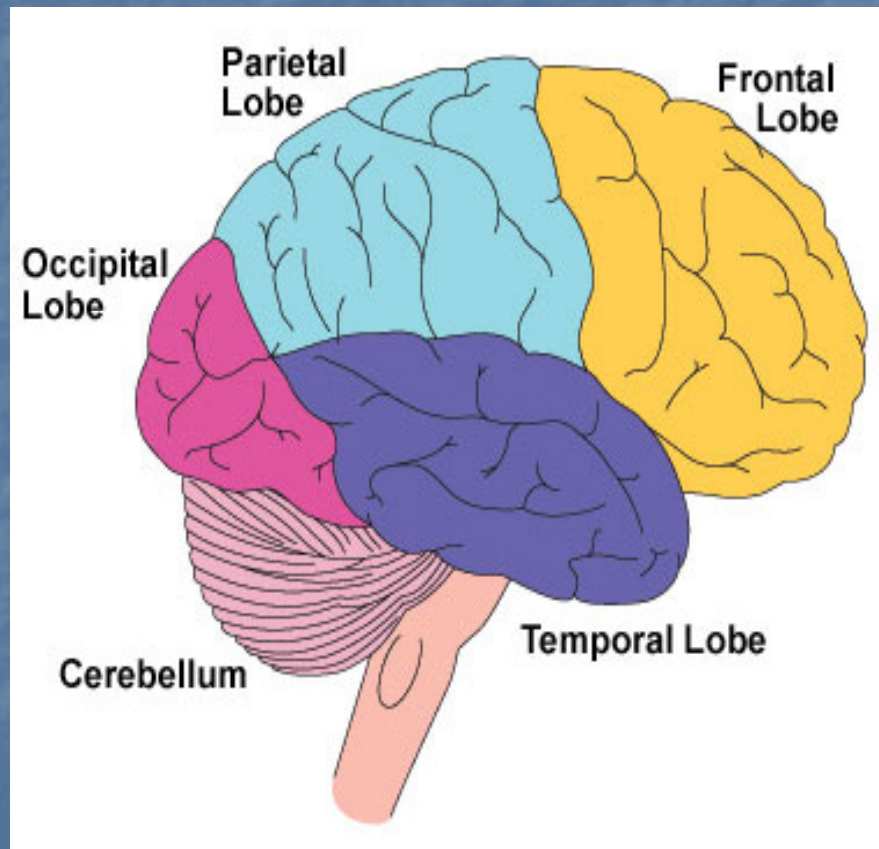
- **Synapse**

- **Functional connections between neurons**

- **Neurotransmitters found there**

- **They can help or inhibit the transmission of information from one neuron to the next.**

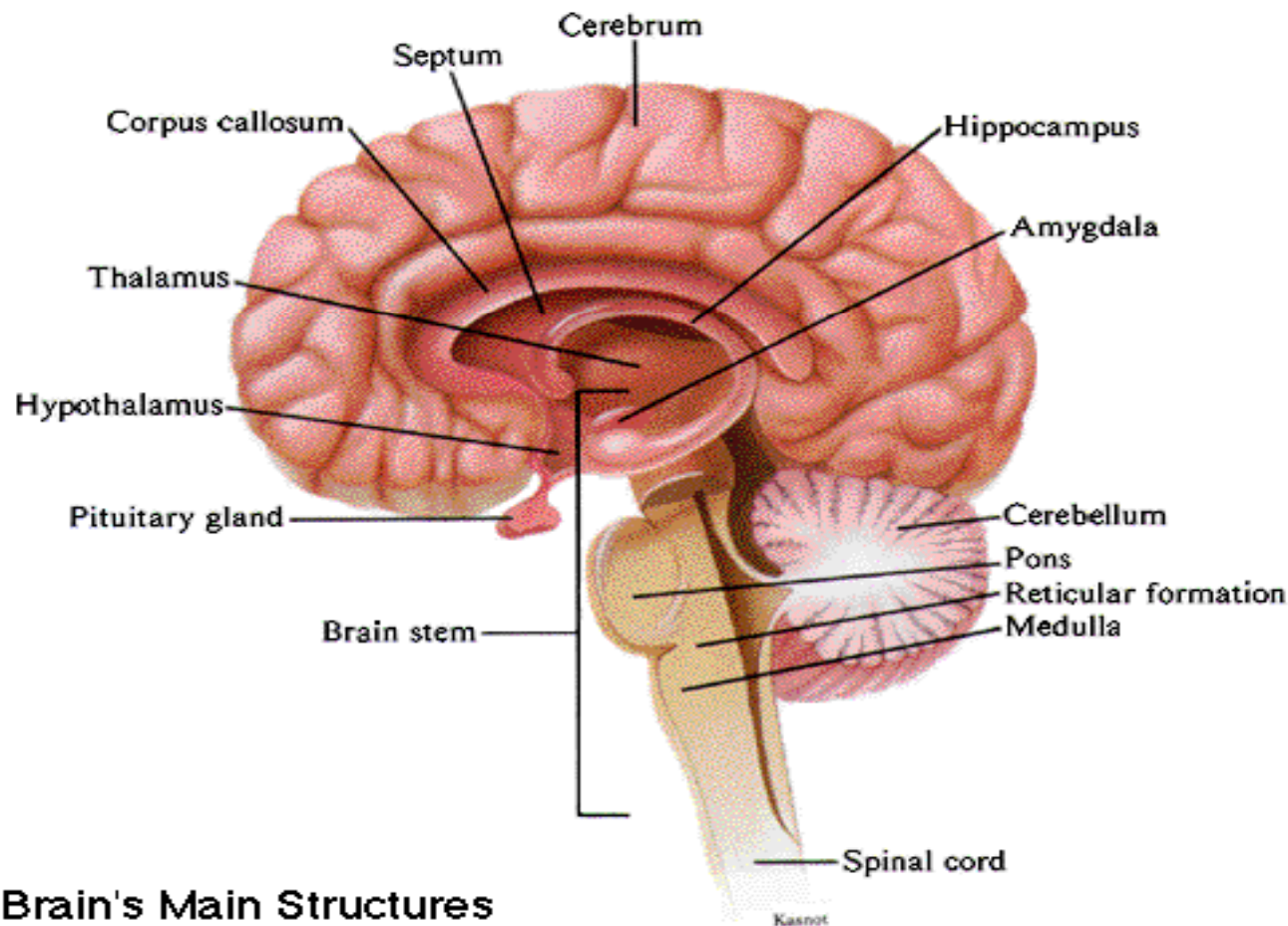
# The Lobes of the Brain



- **Frontal**
  - **Abstract thinking**
- **Parietal**
  - **Touch, pressure, temperature**
- **Temporal**
  - **Audition**
- **Occipital**
  - **Vision**

# Structures of the Brain

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- **Why does the cortex have folds and wrinkles?**
- **Reticular Formation or Reticular Activations System**
  - **Alertness, attention**
- **Endocrine glands/system**
  - **Pituitary gland controls**
  - **Brain has the ultimate control**
- **Limbic System**
  - **Pleasure center**
  - **Controls emotions (Mad scientist)**



# Brain Hemispheres

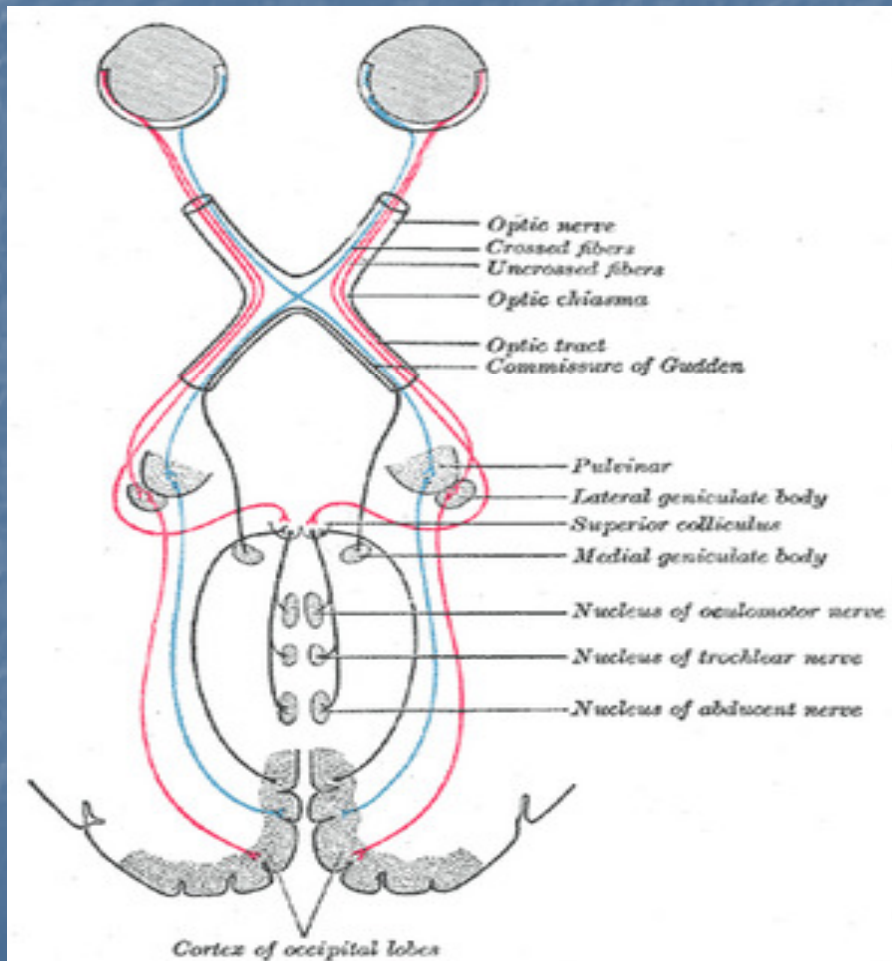
- **Left Hemisphere**

- **Language**
- **Match**
- **Logic**

- **Right Hemisphere**

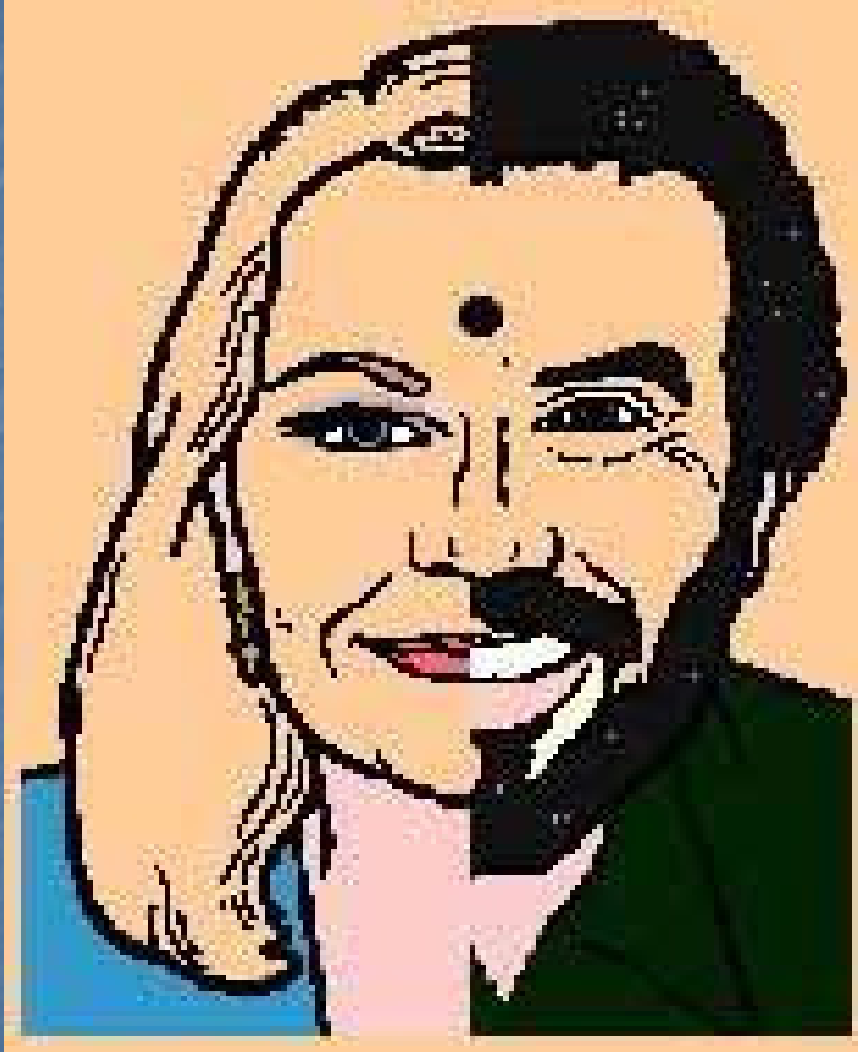
- **Spatial Abilities**
- **Face Recognition**
- **Visual Imagery'**
- **Music**

# Split Brain



**Images from each eye goes to each hemisphere of the brain via the Optic Chiasm.**

# What happens if the Optic Chiasm is cut?



- **What will you point to? Why?**
- **What will you say you see? Why?**

