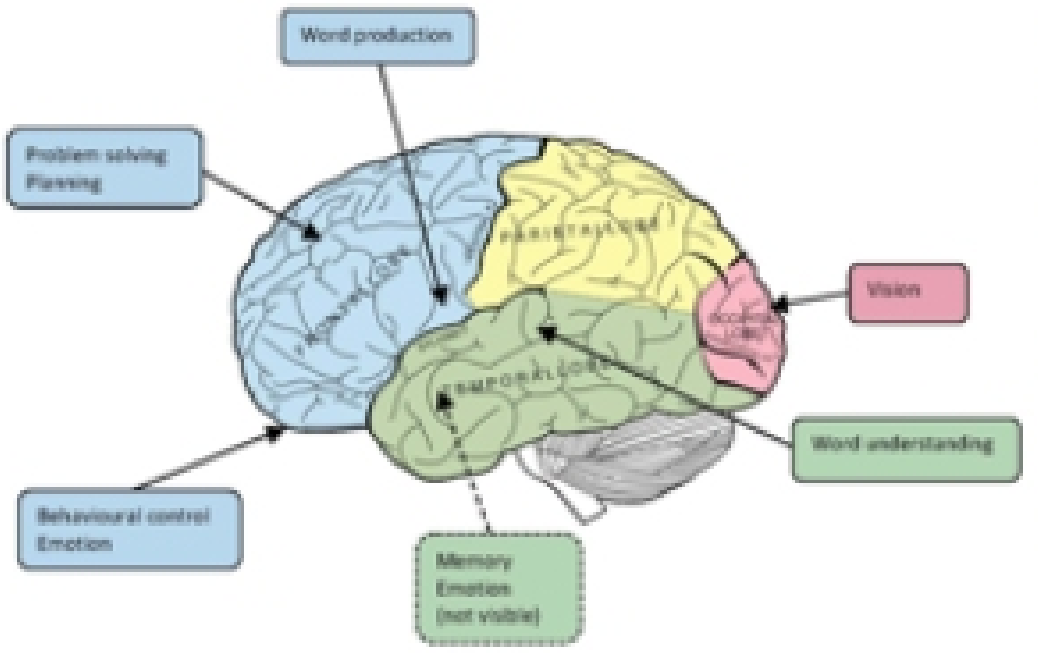
Study Guide for Phycology Exam # 1

Label & Describe the Parts of the Brain:



There are a huge number of neurons, neurons, and myelinated axons. The cerebellum is the complex part of the brain. It is very consistent in its structure: it is involved in motor control - it contains half of the brain cells in the brain (these cells are very compact.)

Brain: is the center of regulation for control of bodily activities. It receives and intercepts sensory impulses and transmits information to the muscles and orange of the body. It also is where consciousness, thought, emotion and memory are held.

Gap Between Attitude & Belief in Regard: to Racism: a subject is asked to sit down in a waiting area there is two other actors in the room. There is a Black and a White actor. The Black actor says that he, "forgot" his cell phone. He gets up and accidentally bumps the white actor. The actors then carry out a possibility of three different scenes: a) is the control: nothing will happen b) the white actor then says a medium slur: "typical I hate when black people do that." or c) the extreme slur: where the white actor will say: "that clumsy N- word." The subject is then called into a room and asked questions: a large amount, more then one would think, chose the white actor to work in a group activity with. But, when people were just asked what they do in the reaction many more people said they would have NOT worked with the racist white subject. This shows a disparity in how believe they will be have or want to behave and how they would actually act.

Broken Window Effect: Political Scientist James Wilson and a criminologist George Killing came up with idea that the reason why crime in NYC was so rampant was because the streets were in disrepair; there were a lot of broken windows. Their theory was that because when the streets look messy and uncared for it give people the sense that "rules are off" in that environment and they are more likely to commit crimes. The slogan became "stop petty crime to stop major crime." There was a test done where the same environment with NO graffiti and graffiti was tested. When there was graffiti 69% of the subjects through the flier placed on their bikes on the ground. When there was NOT graffiti only 33% littered.

When people observe other people breaking a social norm do they too break the social norm? That was the question that was posed in the "broken window" experiment. Independent Variable: was the environment the Dependent Variable: was the number of people that littered.

Trust Games: In a trust game the will be two players. The goal of the game is that the two of them are going to split the money. One person gets to say how the money will be split (proposer) and the second person either a) agrees and they get the money split the way the first person suggest or b) they decline and neither of them get the money (they are the responder.) A ideal (or modal offer) would be 50%. 20% of the offers were less than 50% and those offers had a 50% chance of being rejected. The proposer would then get shocked regardless of they have a low or modal offer. The empathy part of the brain was tested after the shock. In the experiment men showed less empathy than women did. Both men and women felt empathy when the proposer was shocked and gave a modal offer but the number of men who felt

empathy for a proposer who gave a bad offer was much lower than women (it was actually negative.) This suggest that women are more epithetic beings.

The Brain & How it is Studied:

Lesions vs Imaging:

- **Brain Lesions**: are damages to the tissue of the brain. This can occur from stroke: when blood flow is disrupted, **hypoxia**: which the lack of oxygen to the brain, **tumors**: which are abnormal growth in cells, **degenerative disorders**: Alzheimer's, Huntington's, Parkinson's, & Korsakoff's ext. , or **epilepsy**: resection.
  - The benefit to studying the brain from lesions is that is very much cause and effect. You can see the damaged area of the brain and record the changes in the patient. This helps psychologist learn which sections of the brain effect and control motor function, personality, memory and ext.
  - The downsides are that the damage to the brain is often extensive and their is no way to regulate it. Every injury and every person (to somewhat extent) will react and behave differently with each injury it again is hard to control subject to subject. Also, nearby areas can also be effected which makes it difficult to know if more than one section of the brain is creative this change and when one is only studying damaged brains it offers a limited view to normal brain functions
- **Transcranial Magnetic Stimulation (TMS)**: it disrupts the neural function in certain areas of the brain by generating magnetic fields
  - the benefits are that this is noninvasive procedure and it can directly effect critical regions of the brain
  - the downsides are that a subject and get a mild headache and the magnetic filed can only penetrate 2cm below the scalp limiting the testing of parts the brain
- **Imaging**: there are two forms or recording: structure and function
  - structure: only images the anatomy of the brain. These are done by CTs, MRIs, and angiography
    -
  - function: investigates the brain during cognitive processing. This is done through PET Scans & fMRI's
    - an MRI takes advantage of the magnetic properties molecules. It focuses on the hemoglobin the brain which becomes deoxygenated when oxygen is absorbed. When their is an increase in blood flow to a region it is activated. When oxygen is being used up their is a reaction. This is because it shows that that region is stimulated in needs oxygen to complete a process. fMRI measures the ratio or oxygenated blood to deoxygenated blood
      - its benefits is that it is non invasive, it widely available, and can access many different cognitive task
      - its downsides is that it expensive, it has poor temporal resolution, and it is correlational

*correlational: when two or more things tend to occur at the same time and are related to each other but aren't necessarily connected by a "cause & effect" relationship

* casual or causation: this can only be defined in a experiment.
* independent variables: what you vary throughout the study to get different results: it is clear that specific action caused the second event to occur
* dependent variables: what you measure; what is the outcome
* experimental study: in this type of study the variables are NOT manipulated but only measured. It looks at data to find relationships
* correlational study: would introduce new circumstances and observe the reactions of the participants

Phineas Gage: worked on a rail road and iron rod shot into face. It penetrated his eye and went through to the top of his head. He returned to work 6 months later but he had a different personality. His co-workers before described him to be very pleasant but, he became more aggressive and profane after his accident. This is an important study because this showed that damaged to the brain can actually change one personality. This was before a time where they did many lesion studies. It was one of the first ones.

Tan: A patient of Paul Broca, in the who lived in the mid to late 1800's, had a brain injury that left him only to be able to say the word "tan" and swears. This helped because it was later discovered that patient that couldn't speak after injuries all had damage to the same front side of their brain.

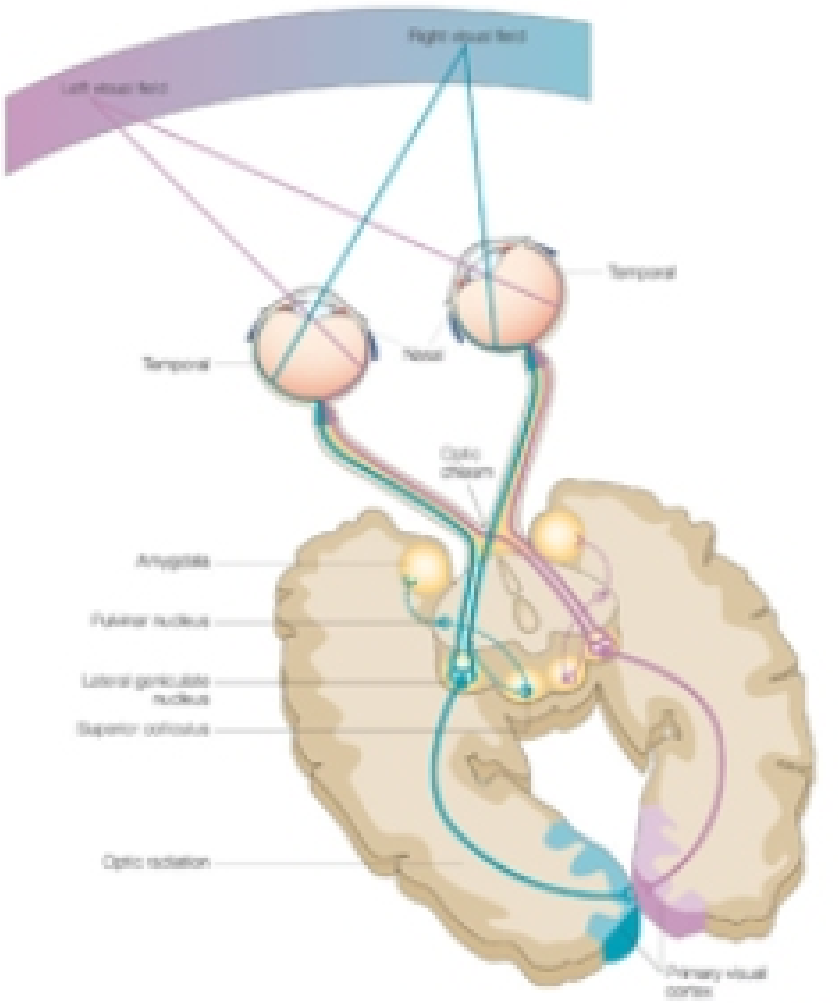
Experimenter Bias: Effect:

- self selection bias —> when the researcher selects specific test subjects for a study to get a positive outcome and not it is not random or subjective choosing
- confirmation bias: we look for evidence that supports our ideas not the ones that disprove them
- "maze bright vs "maze dull" —> the maze bright rats actually had better outcome in the maze but that is the experimenters often gave them the benefit of the doubt during the experiment. The would re-record data when the mouse would mess up.
- Test Subject: they are often WEIRD and or not a good representation of actually global or even region society Westernized, Educated, Industrialized, Rich Democracies… many of them are also young (being college students)

Vision: it is important for object recognition and navigation. It is an interpretation of the world around us.

- shape & position consistence we know it it is the same object even at different angles
- generalization: we no something the letter "c" even when it is in different fonts
- impoverished input: we recognize an object even when parts are missing
- illusion occur because are there is gap between the world and the way that our brain intemperate it

Visual System from the Retina to the Primary Visual Cortex:
When we look at an object many processes happen at very fast rate before our brain recognizes the object. The cornea project light from an object and forms and image on the retina. The image is inverted and hits the rods and cons. The ganglion cells that transmit this information to the brain via the optic nerve. The visual cortex in the LEFT hemisphere receive information from the RIGHT visual field and vice versa. In the LGN, the visual part of the thalamus, many of the axons from the optic tract terminate but, axons from the ganglion cells project to other parts of the brain. From the LGN visual information is relayed to the visual cortex. The Visual cortex contain serval visual areas that process different aspects of visual information like form, color, and movement. The VI or primary cortex project to other areas of the visual cortex that are involved in more complex visual perceptions:
cornea —> retina —> rods & cons —> ganglion cells —> optic nerve —> LGN —> visual cortex



* **Receptive Fields:** The cells in the retina are the same as the cell in the LGN. In the LGN there 1 million neurons it picks up spots of light. In the VI there are 250 million neurons and it picks up stripes and edges of light. In the the extrastriate or other parts of the visual cortex (ex: V4) you have neurons that have more advanced recognition like faces and actually people

cortical blindness: the visual cortex is ruined buy your eyes are completely fine (this is pretty rare)

Anosagnoisa: when someone is denial that they have an disability with their brain and that is effective their motor or cognitive skills

Appreciative Agnosia: there is failure to construct conscious percept from sense of data (right hemisphere)