

## Psychology - Mr. Duez - Unit 1, Part 1 and 2 - History & Evolution of Psychology -and- Research Methods

**What is Psychology?** *Psychology in the Past? Approaches to Psych today.*

**Research:** *The Scientific Method, Design, Processing, and Ethical Issues.*

1. Wilhelm **Wundt** is credited with being the founder of modern experimental psychology when he founded a lab at the University of Leipzig Germany in 1879.
2. **Tichener, Watson, James, and Skinner** are all important early psychologists.
3. Understanding the differences between the various approaches or perspectives - **behavioral, biological, cognitive, humanistic, psychoanalytic, & sociocultural** - is the key to understanding psychology.
4. The modern definition of psychology combines the **scientific study of behavior and mental processes in humans and other animals**.
5. **Observation** is the most important aspect of psychological research.
6. **Operationalism** means to define our variables in the manner in which we are going to measure them.
7. **Correlation** measures degree of relationship between variables and ranges from -1 to +1. **Correlation does NOT imply causation**.
8. **Experimental, correlational, & descriptive methods** all have strengths & weaknesses in describing human behavior.
9. **Descriptive statistics** describe the data gathered in research, while inferential statistics allow us to draw conclusions about how this data can be generalized to a larger population.
10. Following **ethical principles** is vitally important in any kind of psychological research.



**History & Approaches:** It has been said that psychology has a short history and a long past. It has been a discipline studied only over the past 110 years. Prior to that, Psychology essentially a sub-discipline of philosophy. It was **Wilhelm Wundt** who came to recognize the discipline of psychology that we know today.

Psychology can be traced back to the Ancient Greek philosophers. Both **Plato and Socrates** described human knowledge as being innate. The idea is reminiscent of modern thought that humans are born with the ability to perform specific behaviors. But, **Aristotle** (who came later) argued that to understand something one must observe the phenomenon directly.

**Rene Descartes** was very interested in understanding the causes of human behavior. He was influenced by watching some automatons perform mechanical behavior in a garden. Descartes reasoned that since the cause of those behaviors was mechanical, perhaps human behavior is similar. His theory posited this mechanical approach, but with a drive of "human spirits" that make contact with the "mind" in the pineal gland. Philosopher **John Locke**, on the other hand, believed that humans were born *tabula rasa* - a blank slate, with no inborn knowledge. To Locke, the most important things was to understand how experience shapes human behavior instead of focusing on innate ideas that emerged over time.

**1850-1920: The emergence of Structuralism & Functionalism:** **Wundt** devised a technique that would allow him to observe causes of behavior indirectly: **introspection**. It involved an attempt to understand the concept of consciousness by having a trained researcher observe an object and report the thoughts, sensations, and feelings he experienced while perceiving the object. Through introspection, Wundt believed, a psychologist would be able to distill the structure of consciousness. This is called **Structuralism**.

While Wundt was developing his theory in Germany, **William James** was developing his own theory of human behavior in the **U.S.** James believed that understanding the structure of consciousness was useful, but it wasn't enough. He felt that we needed to understand not just how consciousness was structured but the purpose for consciousness. That is, what is the

function of conscious activity? James's theory became known as **Functionalism**. James is commonly regarded as the "Father of Psychology in America."

During this time, **E. B. Titchener**, who had previously been a student of Wundt in Germany, came to the U.S. and began applying Wundt's theories at Cornell. Titchener became convinced that unless we taught students how to do psychology, psychology as a scientific discipline would never develop the way of biology, physics, and chemistry had. So he set up a lab at Cornell for the express purpose of teaching students how psychology works.

### **Early 20th Century: Applied and basic discipline Psychology**

**Applied discipline** refers to **Clinical Psychology**.

Ex: Sigmund Freud, Carl Rogers, Alfred Adler, Carl Jung, and Aaron Beck

**Basic discipline** refers to **Behaviorism or Cognitive Psychology**.

Ex: B. F. Skinner, John Watson, Jean Piaget, Stanley Milgram, Phil Zimbardo, Michael Gazzaniga, Roger Sperry, E. C. Tolmen, Lev Vygotsky, and Albert Bandura.

**Watson & Skinner** used the work of **Ivan Pavlov and Edward Thorndyke** to develop **behaviorism** in early 20th century. Behaviorists believe that things such as memory, language, and thinking are not viable topics of study because they are not directly observable. Behavior, however, is **observable**, and because of that, behavior should be the only topic psychologists should examine experimentally.

**Clinical psychologists** were also refining their ideas and techniques in the early 20th century. **Freud** and his colleagues (Jung, Adler) believed that the reason people suffered from **anxiety was due to conflicts that were unresolved in their unconscious**. The claim was that people suffered because they were influenced by thoughts, or conflicts, that were outside of their awareness. **Psychodynamic** psychologists developed techniques to help people deal with these anxieties through therapy that came to be known as **"talk therapy."**

A final movement in the 20th century was the development of **humanistic psychology**. Led by Abraham **Maslow** and Carl **Rogers**, humanists saw **people as basically good and focused on individual's ability to grow and achieve his or her full potential**. Humanistic psychology is often referred to as **the "third wave,"** as it was an alternative to the psychoanalytic and behavioral approaches.

**Later 20th Century & 21st Century A variety of approaches:** As the 20th century progressed, psychologists began to study **internal events** such as memory and thoughts. The belief was that if internal events could be turned into behavior, they could be observed. So if someone could report memory in some objective way, we could actually study memory. Psychologists such as **George Miller** led this line of thinking, and they worked to make the field of cognition into one of the most influential areas for the last part of the 20th century.

**Biological psychology** (coupled with cognition) dominated the rest of the 20th century (and current study). Biological psychologists study the influence of biology on human behavior. **The believe is that internal causes might be inferred from behavior.**

Because psychology is such a diverse field, there is no one agreed upon method of studying human behavior. The goal remains the same: **predict and help control human behavior**. We will study these broad approaches:

- Biological**
- Behavioral**
- Cognitive**
- Humanistic**
- Psychoanalytic**
- Sociocultural**

**BIOLOGICAL APPROACH:** Focuses on the **physiological bases of behavior**. The focus is on the brain & central nervous system (CNS). Also strongly interested in the role of drugs on human behavior, as such, they often use **animal models** as a means of understanding human behavior. Rats, for example, are used to study drugs such as THC (the active ingredient in marijuana). Researchers do this because (1) it is illegal to test such substances on humans & (2) the rats' brains are similar enough to humans' brains to be able to make leaps of logic from the animal to the human. Other areas of biological psychology involve the role our senses play in our overall experience as humans. **Sensation psychologists** study the various sense organs to understand how they gather information. Biological psychologists also study the role of the **endocrine system** in influencing human behavior. The glands in the endocrine system secrete slow-acting hormones which move throughout the body and are involved in processes like the flight-or-fight response and homeostasis.



**BEHAVIORAL APPROACH:** Many psychologists, such as John **Watson** and B.F. **Skinner**, believe that to refer to the "behavioral approach" as an *area* of psychology seems inappropriate. Behavioral approaches, they believe, are the *only* way to understand humans. To these psychologists, behavior and the surrounding environment are the only topics worth studying to understand humans.

In a landmark paper in 1913, for instance, John B. **Watson** wrote, "... give me a dozen healthy young infants... I will take anyone and create... a doctor, a lawyer, even a beggar man thief..." According to Watson, if one is interested in controlling human behavior, one needs only to develop a set of environmental conditions that give rise to the desired behavior.

B. F. **Skinner** took a different perspective. According to him, behavior isn't controlled so much by the precursors of behavior but rather by the history of what has occurred when the behavior was performed previously. The consequences of behavior have a small, continuous influence on behavior, until the behavior is under the control of the environmental consequence. If a child is rewarded for taking his clothes to the hamper at night, the child will continue to bring his clothes to the hamper. And even if the child is not rewarded once, he will still bring his clothes there, so long as the reinforcement has been well-established. (Casino and card players can vouch for the fact that one doesn't need constant reinforcement to continue playing! A reward once in awhile will do the trick.) Rewards are called **reinforcements** in behaviorism.

Proponents of the behavioral approach argue, essentially, that observable behavior and the environment are all that is needed to form a science of psychology.

**COGNITIVE APPROACH:** Cognitive psychologists and those who subscribe to the cognitive approach believe that internal mental events are essential aspects of human behavior and are clearly worth examination. Cognitive areas include the study of memory, language, thought, and attention. In these areas, psychologists try to make predictions about behavior by measuring changes in behavior (reaction time, typically) and then to infer internal mechanisms that control such behavior.

A large body of literature exists that demonstrates the connectedness of ideas in memory; in these studies, participants are presented with a word and then have to say that word out loud. In one condition, the first and second words are related. In a second condition, they are not. The amount of time it takes people to say the second word is faster when the words are related than when the words are not related. This suggests that the ability to say these words is influenced by the relationship between words in memory. Cognitive psychologists claim that this demonstrates the phenomenon of semantic relatedness in memory.

The cognitive approach is very popular today in many areas of psychology, including social, developmental, personality, and clinical psychology. The overriding idea is that in order to understand the individual, one must understand the way that people think, remember, process information, and reason about the world.

**HUMANISTIC APPROACH:** The humanistic approaches to psychology focus on people as being goal directed and driven. According to humanistic psychologists, humans are driven to achieve all that they can achieve and to work towards the goal of self-actualization in all that they do. Abraham Maslow defined a self-actualized person as someone who has reached his or her own unique potential.

Humanistic theories have been around for thousands of years and have gone in and out of fashion, but essentially, the issue has always been one of free will and motivation. Humanistic psychologists believe that we are completely in control, and in fact, some would argue that the only reality that matters is subjective reality. People create their own view of the world, and that view shapes their interactions with others.

Humanistic approaches can take the form of a theory or a form of psychotherapy. In humanistic therapy, psychologists attempt to help individuals see the misconceptions they hold in their subjective view of reality. If those views can be corrected, the individual will often feel better about herself.

**PSYCHOANALYTIC APPROACH:** Psychoanalytic approaches to human behavior are some of the more controversial approaches. According to proponents of the psychoanalytic approach, humans are controlled by forces that are out of their control. Specifically, humans are controlled by forces buried deep in their unconscious. According to people like Sigmund **Freud**, people have a great many unconscious conflicts that cause them discomfort. They are unable to verbalize these conflicts, however, because they are outside of their consciousness. That is, people feel stress, but they don't know why they feel stress. To help people overcome this anxiety or stress, psychoanalytic psychologists encourage lots of free association and "*talk therapy*" to help people come to understand the roots of these anxieties. Dream analysis, at one time, was considered to be vital to the process.

Unfortunately, no doubt disappointingly to students, little evidence supports the psychoanalytic approach to psychology. This doesn't mean that this approach is not potentially valuable to psychology. But as a science, psychology is interested in developing theories that are theoretically sound and testable, and psychoanalytic approaches are not, to date.

**SOCIOCULTURAL APPROACH:** Sociocultural approaches to psychology focus on the diversity of the human experience and attempt to explain human behavior by focusing on the **context** in which one develops (i.e., developmental psychology), the **influence** of groups (i.e., social psychology), or some **applied** aspect of psychology (i.e., forensic psychology). These areas all operate on the assumption that human behavior doesn't occur in a vacuum and that groups, cultures, and situations all have an impact on human behavior.

Social psychology deals with the influence of groups on an individual's behavior. To understand social psychology completely, one must understand the context in which one exhibits behavior. To a social psychologist, behavior is predicted in part by the presence of or absence of another person.

**Summary of the approaches:** While it is important to be able to see each of these approaches as a distinctly different perspective, it is also vital to see how they interact. A psychologist who studies sensation and perception would, for example, need to see how these systems work from both a biological approach, which would focus on the mechanics of how sensations are detected by the senses, and a cognitive approach, which would examine how these sensations are interpreted and understood through perception. A psychologist using the sociocultural approach would look at the social surroundings of a student who is struggling in school, while a behaviorist would focus on how the student's behaviors are being punished or reinforced. The AP Psychology exam often poses questions that ask the student to examine problems using these multiple approaches.

**RESEARCH METHODS:** In psychology, we are interested in understanding human behavior and mental processes. To do that, we need an organized set of methods that will allow us to ask questions and provide coherent explanations about the "whys" of human and animal behavior. This chapter will help you understand the role that research plays in psychology.

**OBSERVATION:** It is essential to understand that psychology is an empirical discipline. **Empirical** means that we use observation as a means of understanding questions about behavior. It is not simply enough to *believe* that something (a behavior, say) is true. A technique is needed to allow for the direct observation of that behavior under a variety of conditions.

The discipline of psychology relies heavily on well-established empirical techniques. For example, psychologists are often interested in questions about behavior in specific contexts. Suppose a psychologist is interested in the seating arrangement of a college class. To be able to answer questions about why students choose to sit where they do, he could simply observe several classes and try to determine how students made their seat selection. Such a technique, called **naturalistic observation**, is a common method of investigation by psychologists.

Naturalistic observation involves going out to the location where the behavior of interest occurs and observing it as it unfolds. This can occur either with intervention (such as participation in the situation to be observed) or without (such as observing from a separate location). Both scenarios have advantages and disadvantages.

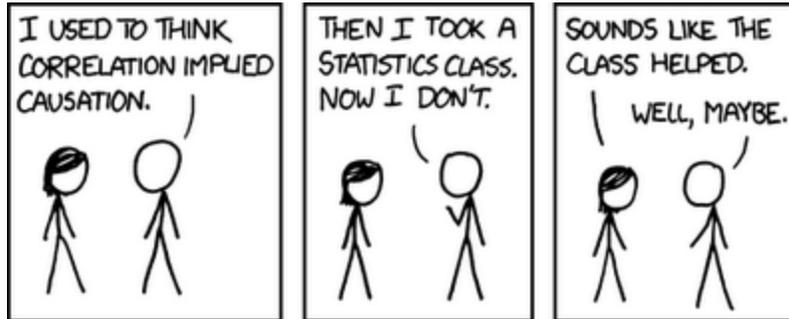
To observe accurately, one must first define the variables. A **variable** is *any observable phenomenon that can take on more than one value*. Income, number of credits in psychology, and height are all variables that would be of interest to a psychologist, as would other, less easily quantifiable variables. To solve this problem with quantification, psychologists will often operationalize their variables. To operationalize a variable, one must define the variable in such a way that it can actually be measured.

Suppose a psychologist is interested in the construct of aggression. Aggression cannot be measured directly, so there is no way to come to any objective definition. Thus, the researchers must state how they intend to measure aggression and what behaviors they plan to use as a proxy for aggression. A researcher interested in aggression might measure the number of aggressive words (such as swearing) one uses or the number of times a participant hits another person. In such a way, the

researcher is stating in clear and defensible terms what she is going to use to identify aggression.

Once an observational study has been completed, a researcher needs to understand what it is she has found. If she used a survey to gain attitudinal data about a particular phenomenon, for example, she might then use a **correlation** to understand the data more completely. A correlation is a statistical technique that allows us to understand the degree to which two variables are related.

**TIP!!!! REMEMBER:** JUST BECAUSE TWO VARIABLES ARE RELATED DOES NOT NECESSARILY MEAN THAT ONE CAUSES THE OTHER. **CORRELATION IS NOT CAUSATION.**



A **correlation coefficient** can range only from -1 to +1, and it tells us two things about a relationship. First, the sign indicates that direction of the relationship. That is, it tells us if the relationship is one in which the numbers vary *together* (as one increases or decreases, the other does the same, etc.) or in which the variables vary *inversely* (the numbers go up or down in opposite directions).

Second, the number tells us the strength of the relationship. The closer the number is to 1, the stronger the relationship.

Let's say we want to determine the correlation between IQ and income. We would collect survey data examining the variables of interest. Then, we would rank order IQ and rank order income (that is, put the data in order from greatest to least) and determine if the ranks of the two variables are similar or not. If IQ and income are related such that the higher the IQ, the higher the income, the correlation would be positive (say, +.75). If the relationship is inverse - that is, as IQ increases, income decreases - the correlation would be negative (say, -.60).

The correlation is often depicted by a scatter plot, which plots one score against another. By understanding the correlation, we have some idea of how variables relate. We don't, however, know which variable caused which outcome. Thus, we cannot claim a cause-and-effect relationship from correlation.

**EXPERIMENTAL TECHNIQUES:** Observational techniques are very good at helping researchers gain some idea about a particular phenomenon. However, **the goal of psychology is often to predict and control behavior**, and observational techniques do not allow this to happen. What they allow, rather, is a description of behavior. The lack of control one has over the variables of interest makes it difficult to draw strong conclusions about data. So researchers often attempt to answer questions about behavior by manipulating variables to measure how they are influenced by environmental factors.

Suppose we wanted to understand the influence of a drug on the ability of a rat to run a maze. We could take two groups of rats and inject one group with experimental drug and the second with a **placebo** (an inert substance designed to not cause a change in behavior). Both groups of rats would then run the maze while we measured their speed in seconds. We could compare the results and attempt to determine if the running speed was influenced by the drug.

In this experiment, whether or not the rat gets the drug is the **independent variable (IV)**. The speed that the rat runs the maze is the **dependent variable (DV)**.

In psychology, this type of experiment is common. One variable is manipulated in a variety of ways to determine its effects on the outcome variable. Such an experimental procedure allows for **cause-and-effect relationships** to be established. We will talk about different aspects of research methodologies later in the semester.

**TIP!!! REMEMBER: THE DEPENDENT VARIABLE IS DEPENDENT UPON THE INDEPENDENT VARIABLE.**

**EXPERIMENTAL DESIGN:** To do an experiment in psychology, we must first understand the notion of **variables** and **experimental control**. *Experiments occur when we manipulate one variable and measure the outcome of that variable in multiple conditions.* One of the benefits of psychology is that we can manipulate multiple variables at any one time and not only determine the effects of one variable on another but also measure the interaction of variables as they combine to determine their effects.

Studying experimental design allows us to understand how we design experiments to determine causes of behavior. There are different ways to do this, but the most common is to **develop a variable with two or more conditions and then to measure an outcome from the conditions to determine if the independent variable had an impact on the dependent variable**. If it did, there should be differences in the performance of our participants on those conditions. If it did not, there should be no difference, and the same performance will be observed across the conditions.

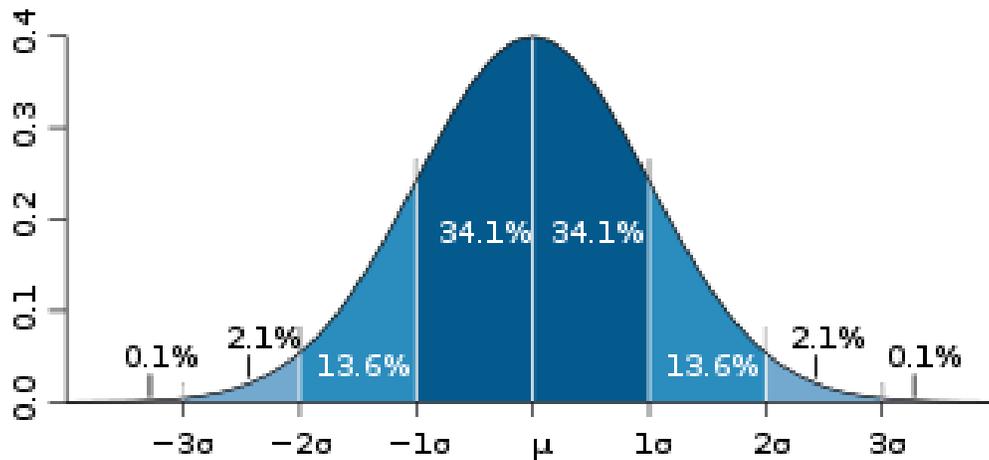
If we wanted to understand memory, we would set up two conditions: in one condition, participants might be given a word list to memorize in the presence of music, while in the other condition, participants might learn the list in silence. Memory can then be tested by having participants recall the information.

If the students are not all run through the experiment at the same time of day, we may have a **confounding variable**. A confounding variable is a variable other than an independent variable that completely explains the results. Assume a few participants run through the experiment at 7:30 am while they are still sleepy, while others run it at 12:00 noon when they are hungry. The problem lies in the fact that participants' level of arousal--and, therefore, their ability to perform the task--is unsystematically influenced by the time of day the participants ran through the experiment. To control for this, we need to make sure all participants run through the experiment under conditions that are similar as possible.

**STATISTICS:** Statistics traditionally falls into two categories: *descriptive* and *inferential*. **Descriptive statistics** is that used to describe a sample. If we have a set of data, such as scores on an exam (80, 90, 100, 80, 95), we can describe that data in a few ways. First, we can tell what *the most common score* is (80). This concept is called the **mode**. Second, we can tell which *score is in the middle of the distribution* (90). This is the **median** (like the median strip on a highway divides the highway, the median in a distribution divides the distribution).

Third, we can *add all the numbers and divide by the number of scores* (89). This is called the **mean**, and it is the most common measure of *central tendency*. Another important descriptive statistic is the **standard deviation**, which is the amount, on average, that each score differs from the mean. Thus, the standard deviation tells us about how much each score is different from the average score. The bigger the standard deviation, the more spread out the scores are.

When we measure a population on variables of interest to psychologists (IQ, speed of processing information, aggression), we find that scores are often normally distributed. They can be shown on a **normal distribution curve**.



One reason we use the **normal curve** so much is that we know so much about it. See the information above for how the normal curve is divided out. We know, for example, that if we select a random point on the curve, we'll most likely get a score that falls between -1 and +1 standard deviations from the mean. Essentially, we can predict there is a 68 percent chance we will get a score from that section of the curve. That is enormously helpful when it comes to inferential statistics.

**INFERENCEAL STATISTICS:** While descriptive statistics allow us to fully understand the behavior of the subjects in our research, psychologists need a way to suggest that what is true of these subjects might also be true for an entire population. **Inferential statistics** are used to make generalizations from a research sample to a population.

To really understand statistics, you must be familiar with the concept of probability. **Probability is essentially a theory that suggests that things will sometimes happen by chance.** One goal of using probability in psychology is to determine the chance that something might happen randomly versus the chance that it happened because of some manipulation. Statistics allow us to evaluate the probability of an outcome to determine if there is any reason we should assume it happened by chance.

In the study described above, after we collected our data, let's say we found a difference in memory performance (on a 10-point test) of about 3-points (the people studying without music answered 3 more questions correctly). We can use statistics to evaluate if that difference of 3 points is meaningful or not. We use the term statistically significant, but essentially, we are seeing if we could expect a difference of 3 by chance or if it is not likely due to chance.

In statistics, we operate under the assumption that there are no difference between groups or conditions. This is called the null hypothesis. We then test this hypothesis by examining if there are in fact differences that are unlikely to occur by chance. Our statistical tests will allow us to reject our null hypothesis if we find evidence that our results are unlikely to have occurred by chance (the probability is less than, say, 5 percent).

That is, to say the least, a different way of thinking about the world than we are used to. The best advice for you is to learn the rules of which statistics to use and when and try to practice as much as possible.

**ETHICS:** Because psychology deals with living organisms, we need to be careful about the ethics of doing research. Contrary to popular belief, **psychologists do not torture animals** (human or otherwise) or purposefully create situations that give rise to emotional or psychological harm in experimental participants. In fact, psychologists are guided by ethical principles set forth by **American Psychological Association (APA)** to ensure that they follow the rules to decorum when running experiments.

For experiments involving humans, participants are entitled to both **informed consent** and full **debriefing** following the

experiment. Participants are not allowed to be coerced into taking part in the experiment and should know that they can leave at any time. In addition, all proposals that involve experiments are typically reviewed for ethical standards by an **Institutional Review Board (IRB)** prior to the beginning of an experiment. The IRB reviews the proposals to ensure that the research is not going to cause the participants any undue harm. It operates on a cost-benefit analysis. If deception must be used, the participants need to be debriefed immediately.

**If animals are going to be used, researchers have the responsibility to ensure the proper care of animals.** That is, the temperature must be controlled, the animals must be fed, cages must be cleaned, and the holding rooms need to be secured. The minimum number of animals should be used to achieve interpretable results, and if the animals are to be sacrificed, they need to be done so humanely. Essentially, any research that is psychological in nature needs to be done with the best interest of the participants in mind.

**TIP!!! Ethical guidelines have been emphasized on recent AP Psychology exams**, so make sure you keep them in mind as you study.

### **EVOLUTION OF PSYCHOLOGY:**

- 1. Which of the following psychologists started the first psychology lab in Germany?** (James, Wundt, Watson, Pavlov, Freud)
- 2. Of the following approaches to understanding behavior, which will most likely focus on the way that adults process information?** (Biological, Cognitive, Sociocultural, Psychodynamic, Humanistic)
- 3. Which philosopher discusses the mind-body problem?** (Plato, Socrates, Kant, Freud, Descartes)
- 4. What is the difference between cognitive psychology and behavioral psychology?**
  - (1- Behavioral psychology deals with reinforcement and punishment, while cognitive psychology deals with information processing.
  - 2 - Cognitive psychology focuses only on observable behavior, while behavioral psychology focuses on internal processes.
  - 3 - Both focus on observable behavior; there is no difference.)
- 5. Of the following approaches to psychology, which area would be most concerned with the idea that people strive toward self-actualization?** (Biological, Cognitive, Social/cultural, Psychodynamic, Humanistic)
- 6. Which of the following approaches to psychology is most likely to have a paper entitled “The role of the endocrine system as a secondary neurotransmitter”?** (Biological, Cognitive, Social/cultural, Psychodynamic, Humanistic)
- 7. In early psychology, Wilhelm Wundt developed a technique for doing research that involved having people describe their thoughts as they observed an object. This technique is called** (Dream Analysis, Mind/Body Analysis, Behavioral Analysis, Introspection, Algorithm)
- 8. Watson and Skinner both believed that \_\_\_\_\_ was/were the biggest predictor of future action.** (inborn tendencies, temperament, environment, thoughts, memory)
- 9. The paper “The role of imagery in memory processes” would most likely be written by someone who subscribes to** (biological psychology, cognitive psychology, social/cultural psychology, psychoanalytic psychology, humanistic psychology)
- 10. The person who is most responsible for developing the school of thought called functionalism is** (James, Wundt, Skinner, Watson, Miller)
- 11. A psychologist who is researching the impact of peer pressure on the behavior of adolescents would most likely be a** (clinical psychologist, social psychologist, cognitive psychologist, biological psychologist, humanistic psychologist)
- 12. Those who believe that the most important key to understanding behavior is to understand the role of the environment in shaping organisms are called** (cognitive psychologists, humanistic psychologists, biological psychologists, developmental psychologists, behavioral psychologists)
- 13. Which of these would a social psychologist be MOST likely to investigate?** (The amygdala’s role in the fight-or-flight response, The effects of giving monetary rewards for academic success, How the size of a group influences decisions)

made by group members, Why humans often make irrational financial decisions, How unresolved internal conflicts affect one's personality)

14. **According to operant conditioning, the \_\_\_\_\_ of behavior are the best predictor of whether or not that behavior is performed again.** (derivatives, consequences, antecedents, causes, contexts)
15. **Which of the following approaches focus on free will and personal growth?** (Biological, Cognitive, Sociocultural, Psychoanalytic, Humanistic)
16. **The psychoanalytic approach to understanding personality was described by** (Freud, Descartes, Kant, Hobbes, Milner)
17. **Which philosopher is responsible for the concept of tabula rasa?** (Descartes, Darwin, Locke, Wundt, James)
18. **Which area of psychology is most concerned with understanding the internal works of "mind," such as memory and thought?** (Biological, Cognitive, Social/cultural, Psychoanalytic, Humanistic)
19. **Both Plato and Socrates saw knowledge as** (complete, innate, learned, incomplete, reflexive)
20. **Which area of psychology is most often criticized for offering theories that are not supported by evidence and testable theories?** (Cognitive, Biological, Behavioral, Sociocultural, Psychoanalytic)

#### RESEARCH METHODS:

1. **Suppose a study finds there is only a small correlation between IQ and the ability to solve word problems in math. The correlation shows that a very weak relationship demonstrates that the higher the IQ, the better the ability to solve word problems. A correlation that would demonstrate such a relationship could be** (.00, +.99, +.10, -.98, -.56)
2. **A teacher wants to determine the impact of teaching style on quiz scores. To do this, she divides a class into two groups and teaches on group using one style and the other group using a second, different style. She then measures the scores on the quizzes. The independent variable here is:** (group 1, group 2, teaching style, scores on the quizzes, the teacher)
3. **In the experiment above just described, which is the dependent variable?** (group 1, group 2, teaching style, scores on the quizzes, the Teacher)
4. **If Jose were to do a study that involved using two groups that already existed, and he simply measured an aspect of their behavior, he could determine how the groups are related on a particular measure of behavior. Such a study would typically involve statistics. If he didn't want to infer causation but rather was just interested in the relationship between the variables, he would be using which statistic?** (mean, standard deviation, t-test, f-test, correlation)
5. **If Sarah scored 1 standard deviation above the average, \_\_\_\_ of the population scored higher than she did.** (15%, 25%, 50%, 65%, 95%)
6. **A researcher decides to study how students in a classroom respond to positive feedback from their teacher by watching them via a two-way mirror. This method of unobtrusive viewing of behavior in its usual setting is referred to as** (a longitudinal study, a case study, an experiment, remote viewing, naturalistic observation)
7. **Suppose a psychologist wants to study the effect of caffeine on happiness. Which of the following would be an appropriate operational definition of happiness?** (The number of times a subject smiles during the experiment, Whether or not the subject seems happy during the experiment, The names of the comedians that the subject likes, The number of times that a subject smiles before the experiment, Whether or not the subject seems happy before the experiment)
8. **If a teacher gives a test in two different classes and has a much larger standard deviation for the scores in the second class, which of these MUST be true?** (The test was equally hard for both classes, The scores in the first class are closer to the mean, The scores in the second class are closer to the mean, Students in the first class performed just as well as in the second class, No one in either class did well on the test)
9. **A correlation of +.90 would probably indicate** (a very weak negative relationship between two variables, that variable a caused variable b to occur, that variable b caused variable a to occur, a strong positive relationship between two variables, no relationship between two variables)
10. **Control is essential in psychological research. Which of the following research methods procedures has the most control?** (Correlational study, Experiment, Observational study with participants)

11. **According to the ethical principles of doing psychological research, which of the following would not likely be allowed?** (Participants are deceived but eventually debriefed, Participants are given informed consent but are deceived, Participants are not given informed consent but are debriefed, Participants are given full disclosure but are not able to tell the independent from the dependent variable, Participants are not told what to expect but are given informed consent and debriefed)
12. **Suppose a researcher finds the correlation between two variables to be -0.98. Which of the following is an accurate statement?** (There is a very weak relationship between the variables, There is a very strong relationship between the variables, Because the number is negative, there is almost no relationship between the variables, Because the number is so close to 1, we can say that one variable causes the other variable, One of the variables must be a dependent variable and the other an independent variable)
13. **The term operationalize means to** (utilize more than one dependent variable, create an experiment, define a correlation, define variables clearly, define the statistical procedures)
14. **A confounding variable is one that causes** (unsystematic variation, systematic variation, unreliable data, participants to feel deceived, an experiment to be valid)
15. **Whose job is it to review research proposals and determine whether experimenters are allowed to deceive subjects during an experiment?** (An institutional review board (IRB), The American Psychological Association (APA), The experimenters themselves, A review panel made up of former subjects, the American Ethical Association (AEA))
16. **Which of the following is the most commonly used measure of central tendency?** (Correlation, Mean, Median, Standard deviation, Mode)
17. **Which of the following is the most commonly used measure of variability?** (Correlation, Mean, Median, Standard deviation, Mode)
18. **Inferential statistics is used to** (establish strength of relationships, establish cause and effect, generalize to the population, describe a data set, formulate hypothesis)
19. **A negative correlation typically means that** (variables are related inversely, variables are related directly, variables are unrelated, variables are only weakly related, variables are strongly related)
20. **Suppose you wanted to study the effects of dopamine on the amount of exercise in a rat. In such an experiment, the dependent variable would be** (the amount of dopamine, the rat, the groups of rats, the amount of exercise, the number of rats in the groups).