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### Unit 1: Scientific Foundations of Psychology

#### Unit 1 in AP Psychology involves three general parts. They are:

1. What "Psychology" is, and how it came to be a field of its own (its history)
2. The different "perspectives" people tend to take when analyzing human behavior
3. How research in the field is conducted

We will be covering parts 1 and 2 in context as we move throughout the course. With that said, here are the questions you need to be able to answer from the beginning of the reading.

1. On page 1, what is the definition of Psychology?



← the Greek letter Psi is often used to abbreviate Psychology. It is the symbol for the APA, the American Psychological Association

2. The first scientific laboratory in Psychology is established by whom?

- a. When?
- b. Where?
- c. What was studied?



← THIS GUY!!

- d. MOST IMPORTANTLY, what made the study "scientific"?

3. Psychology's first two approaches of study came from **structuralist** and **functionalist** perspectives.

- a. How did they differ?

- b. What were their flaws? What made these approaches ultimately fail?

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4. Modernized Psychology answers the question “what makes people who they are?” from different schools of thought, or **perspectives**.
- a. Everybody has their own views on human behavior, and ways of explaining why people do the things that they do. In general, there are two major pieces to consider about human behavior: (fill in the chart below with what each proposes)

<i>Nature</i>	<i>Nurture</i>

5. More specifically, there are a number of perspectives which theorists use to consider human behavior. Today, most professionals approach the field from a **biopsychosocial** approach. How is that defined?
6. Sometimes a single perspective of thinking about the field is used. Those single perspectives are listed on the chart below. In your own words, summarize what they propose.

<i>Perspective</i>	<i>What does the perspective focus on?</i>
Behaviorism	
Psychoanalysis (Psychodynamic)	
Humanism	
Cognitive	
Evolutionary	
Behavior-Genetics	
Biological (Neuroscience)	
Sociocultural	

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7. What is the difference between **basic** and **applied** research?
8. Identify the difference between **psychiatrists** and other professionals in the field of Psychology.
9. Name the type of psychologist that might best help someone with...
  - a. Adjustment problems?
  - b. Legal issues?
  - c. Developing new tests?
  - d. Developing better working environments?
  - e. Studying the physical brain?
  - f. Study how children age over time?

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**We will begin the year in class with the third question on page 1, how research in the field is conducted.**

1. Why is it important to conduct research scientifically?
  - a. Define **hindsight bias**
  - b. What is the **overconfidence** phenomenon?
  - c. How might the perception of order in random events caused biased interpretations in the world?
2. How do researchers execute **scientific** inquiry→ **The scientific method**
  - a. What is the difference between **theory** and **hypothesis**?
  - b. What is an **operational definition**? Why is it necessary, particularly in Psychological research?

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3. Psychological science uses three general approaches to research→ **descriptive, correlation, and experimentation.**

a. **Descriptive approaches**→ attempt to describe variables

→**Case Studies** (define the term)

→**Naturalistic Observation** (define the term)

→**Survey** (define the term)

-What is the difference between a **population** and a **sample** in research? Why should a sample be **randomized**?

-What does it mean for a sample to be **representative**? What does a representative sample allow researchers to do?

**\*\*What would pros and cons to each approach be?\*\***

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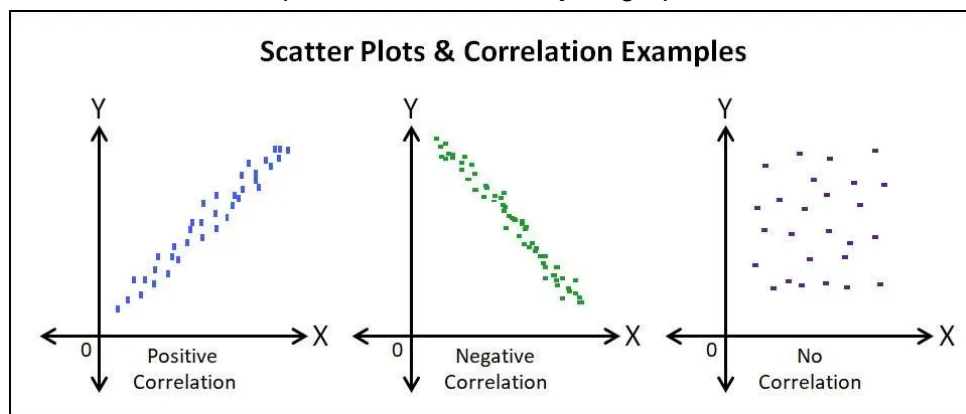
#### b. Correlational research

-How is this approach **different** from descriptive research?

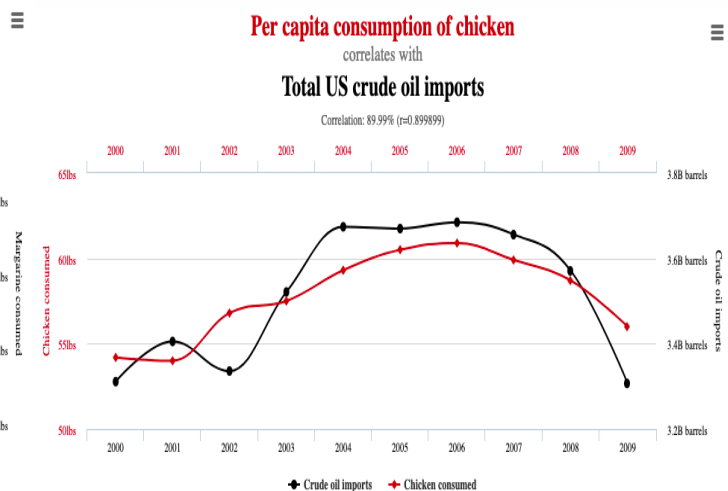
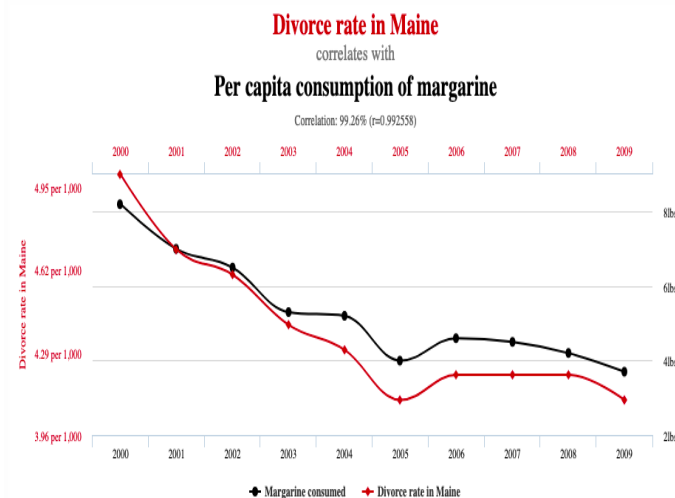
-What is the difference between a **positive** and a **negative** correlation? How are the two similar???

-What is a correlation **coefficient**? How does it represent relationships between variables?

-Correlational data is represented on **scatterplot** graphs, as shown below:



**However...just because there is an apparent relationship between two variables, does NOT mean that one has any INFLUENCE on the other...some correlations are ILLUSORY!**



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**c. Experimental research**

i. What makes experimental research unique? A few things...

- 1. Manipulation of an independent variable**
- 2. Presence of a control group**
- 3. Random assignment of participants**
- 4. Results that can yield a cause-effect relationship between variables**

d. What is the difference between an **independent** and a **dependent variable**?

**e. What is random assignment?**

i. How does random assignment allow for creation of experimental and control groups?

ii. What are **confounding, or “third” variables**? How does random assignment help control for them?

iii. What is the difference between random **sampling** and random **assignment**?

**f. What is done to eliminate bias in research?**

i. **What are double-blind procedures?**

ii. How might a **placebo** help control for **participant bias** in a study?

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#### **Practice Identifying the Components of an Experiment**

(From Waber, et. al, 2008) Investigators had 82 men and women rate the pain caused by electric shocks applied to their wrist, before and after taking a pill. The pain was rated on a scale of 1-10, with 1 being the least painful, and 10 being the most. Researchers randomly assigned half the participants to read that the pill, described as a newly approved prescription pain reliever, was regularly priced at \$2.50 per dose. The other half read that it had been discounted to 10 cents. In fact, both were placebo pills. The pills had a strong placebo effect in both groups. But 85 percent of those using the expensive pills reported significant pain relief, compared with 61 percent on the cheaper pills.

Based on the above...

- What is the independent variable in this study?
- What is the dependent variable, and how was it operationally defined?
- In the above study, what does it mean to use a “placebo pill”?
- Identify why the researchers can call this an experiment?
- What conclusion can the researchers draw from this study?

#### **4. Ethics in Research**

a. What are **ethics**? Why are ethics important in Psychological research?

b. **Define** the ethical principles for Psychological research below:

i. **Informed Consent**

ii. **Debriefing**

iii. **What other ethical considerations for humans (and animals) exist?**

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Read the study below, and answer the questions that follow about ethics in research.

#### "Tuskegee Study of Untreated Syphilis."

The study took place in Macon County, Alabama. The research itself took place on the campus of Tuskegee Institute. The intent of the study was to record the natural history of syphilis in Black people. When the study was initiated there were no proven treatments for the disease. Researchers told the men participating in the study that they were to be treated for "bad blood." This term was used locally by people to describe a host of diagnosable ailments including but not limited to anemia, fatigue, and syphilis. A total of 600 men were enrolled in the study. Of this group 399, who had syphilis were a part of the experimental group and 201 were control subjects. Most of the men were poor and illiterate sharecroppers from the county.

As compensation, the men were offered what most Blacks could only dream of in terms of medical care and survivors insurance. They were enticed and enrolled in the study with incentives including: medical exams, rides to and from the clinics, meals on examination days, free treatment for minor ailments and guarantees that provisions would be made after their deaths in terms of burial stipends paid to their survivors.

There were no proven treatments for syphilis when the study began. When penicillin became the standard treatment for the disease in 1947 the medicine was withheld as a part of the treatment for both the experimental group and control group.

#### *How/Why the Study Ended*

On July 25, 1972 Jean Heller of the Associated Press broke the story that appeared simultaneously both in New York and Washington, that there had been a 40-year nontherapeutic experiment called "a study" on the effects of untreated syphilis on Black men in the rural south.

Between the start of the study in 1932 and 1947, the date when penicillin was determined as a cure for the disease, dozens of men had died and their wives, children and untold number of others had been infected. This set into motion international public outcry and a series of actions initiated by U.S. federal agencies. The Assistant Secretary for Health and Scientific Affairs appointed an Ad Hoc Advisory Panel, comprised of nine members from the fields of health administration, medicine, law, religion, education, etc. to review the study.

While the panel concluded that the men participated in the study freely, agreeing to the examinations and treatments, there was evidence that scientific research protocol routinely applied to human subjects was either ignored or deeply flawed to ensure the safety and well-being of the men involved. **Specifically, the men were never told about or offered the research procedure. Researchers had not informed the men of the actual name of the study, i.e. "Tuskegee Study of Untreated Syphilis" its purpose, and potential consequences of the treatment or non-treatment that they would receive during the study.** The men never knew of the debilitating and life threatening consequences of the treatments they were to receive, the impact on their wives, girlfriends, and children they may have conceived once involved in the research. **The panel also concluded that there were no choices given to the participants to quit the study when penicillin became available as a treatment and cure for syphilis.**



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- How are the participants' rights violated in this study?
- How are **ethical** flaws in research **different** from **research design** flaws?

#### 5. Statistics in research

- a. Define these examples of **descriptive** statistics for research.

##### Measures of Central Tendency

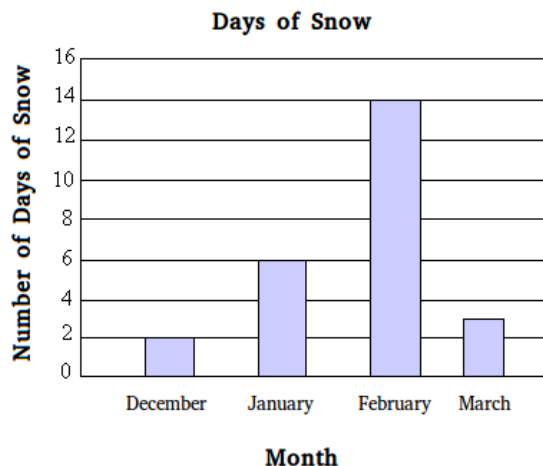
- Mean-
- Median-
- Mode-

##### Measures of Variation

- Range-
- Standard Deviation-

- b. What is a **histogram**?

- c. In a study, researchers are testing the question: "How does the **month of the year** affect the **amount of snow**?" That histogram would look like this:



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- d. What are **inferential** statistics?
- e. Define the principles below that allow scientists make informed inferences.
  - i. **Representative** samples
  - ii. **Variability** of data
  - iii. **Number of cases**
- f. Define statistical significance:



- i. What is the “p” value needed for **statistically significant** results?