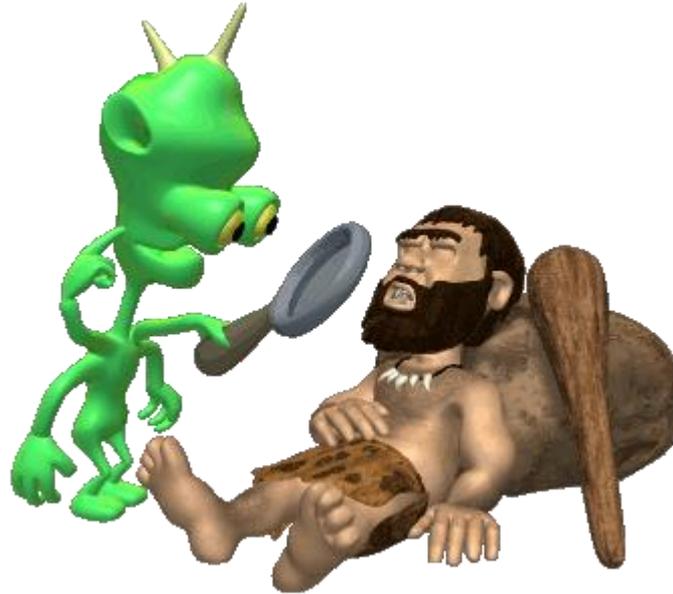


Students will demonstrate knowledge of an experiment by identifying different types of variables.

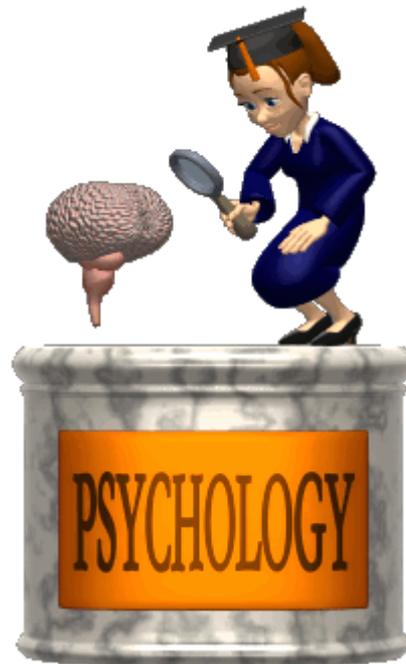
Research Methods



It is actually way more exciting
than it sounds!!!!

Why do we have to learn this stuff?

Psychology is first and foremost a science.

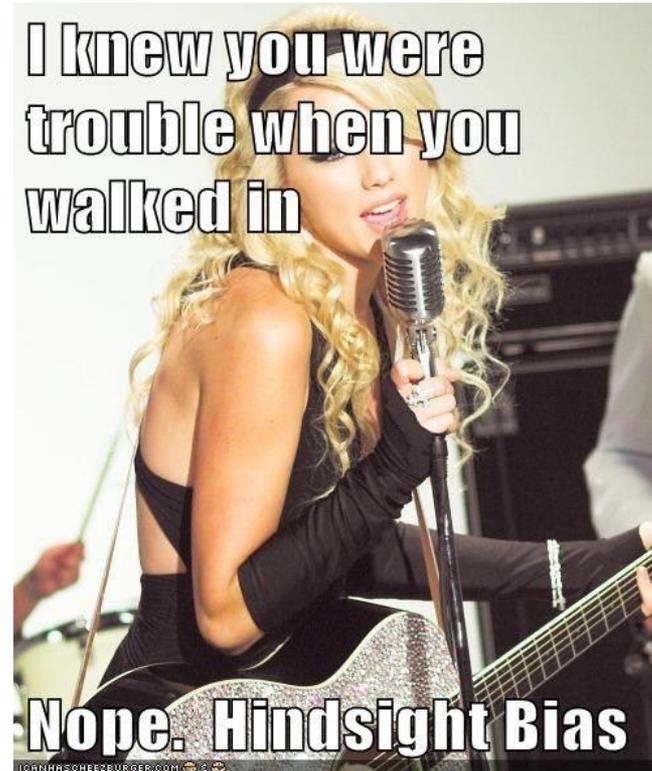


Thus it is based in research.

Hindsight Bias

- The tendency to believe, after learning the outcome, that you knew it all along.
1. The divorcing couple that always argued - "I knew they wouldn't last".
 2. The person who places a lucky bet on a horse, and proudly proclaims "I knew my horse was going to win. It is just a skill I have."

Monday Morning
Quarterbacking!!!



Applied V. Basic Research

- Applied Research is designed to solve practical problems
- YOU CAN USE IT!!!
- Basic Research explores questions that you may be curious about, but not intended to be immediately used.



Research on therapies for drug addicts has a clear purpose.

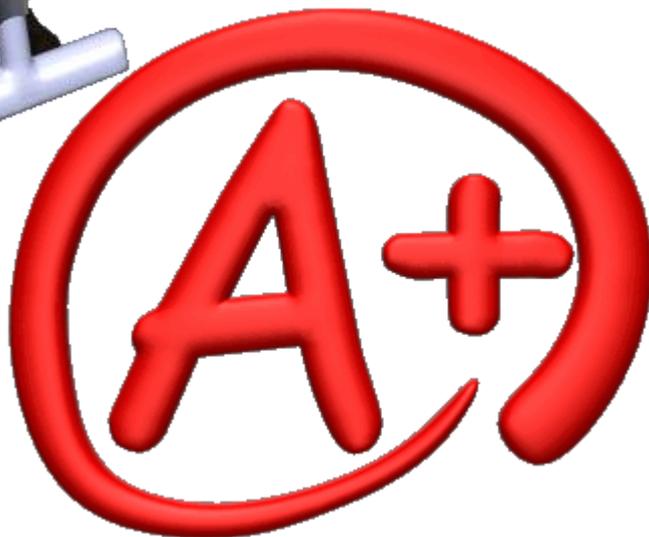


Studying how kissing changes when you get older is interesting...but that's about it.

Terminology

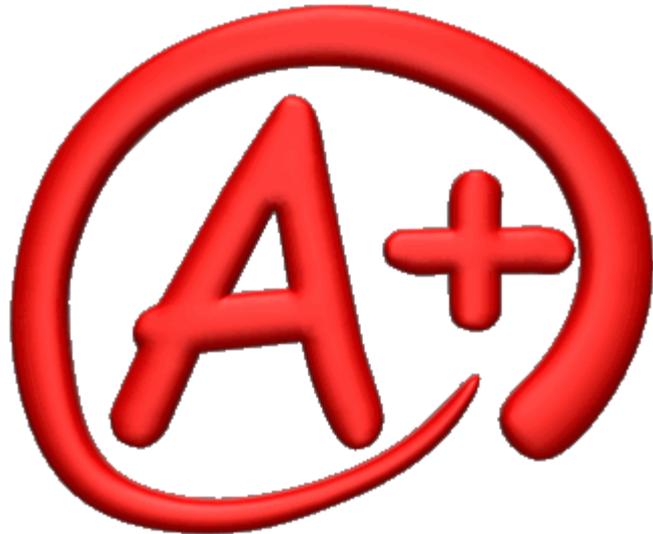


Research Design begins with a Hypothesis



- **Hypothesis: A testable prediction, often implied by a theory.**
- Expresses a relationship between two *variables*.
- A variable is anything that can vary among participants in a study.
- Example: *Participating in class will effect grades a student receives.*
- Question: What are the two variables in the hypothesis above?

Hypothesis



- **Non-directional hypothesis**
(previous example)
- **Directional hypothesis**
(*Participating in class will lead to higher grades than not participating in class.*)
- **Null hypothesis**
(*Participating in class will have no effect on grades.*)

Experimental Method

- Looking to prove causal relationships.
- Cause = Effect
- Laboratory v. Field Experiments

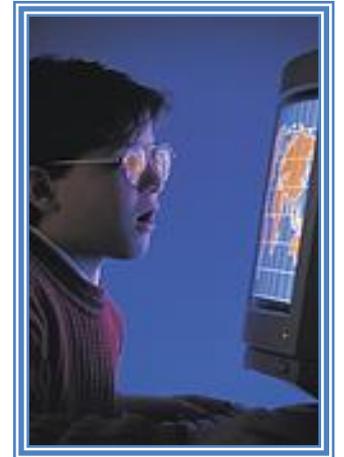


Smoking causes health issues.



The Science of Psychology: Four Major Research Methods

1. *Experimental Research*:
carefully controlled scientific
procedure that manipulates
variables to determine *cause
and effect*

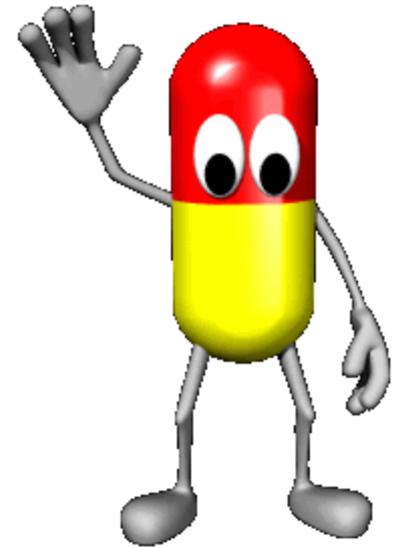


One must first come up with a question:

Question: What is the relationship
between participating in class and
grades?

Independent Variable

- Something that is changed by the researcher
 - What is tested
 - What is manipulated
 - Answers the question "What do I change?"



Comprehension check...

- If you wanted to see if the level of participation caused a change in grades.....
 - What would the independent variable be?

Dependent Variable

- something that might be affected by the change in the independent variable.
 - What is observed
 - What is measured
 - The data collected during the investigation
 - Answers the question "What do I observe?"



Comprehension check...

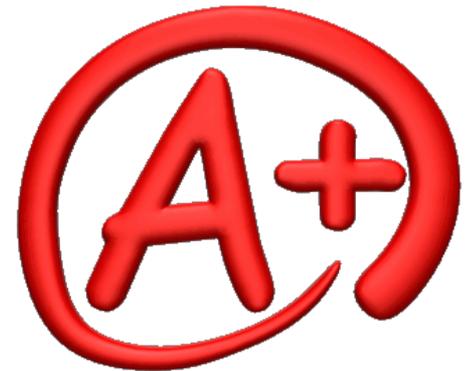
- If you wanted to see if the level of participation caused a change in grades.....
 - What would the dependent variable be?

Operational Definitions

- Explain what you mean in your hypothesis.
- How will the variables be measured in "real life" terms.
- How you operationalize the variables will tell us if the study is valid and reliable.

If our hypothesis is that participating leads to better grades -

- What do you mean by participating?
- What do you mean by better grades?



Conceptual Level

Hypothesized relationship

Concepts

Frustration



Aggression

Concrete Level

Operational definitions

Prevented from playing with favorite toy



Number of times child strikes punching bag

Observed relationship

1. Jon believes that exercise is a cause of higher levels of life satisfaction. If Jon plans to study this hypothesis experimentally, his independent variable would be the
 - a. amount of exercise his participants receive.
 - b. level of life satisfaction before the exercise.
 - c. level of life satisfaction after the exercise.
 - d. physical health of his participants.

2. Shantae is doing an experiment on how anxious people will feel if they are told that they did not do well on an intelligence test. She asks her participants to rate how nervous, upset, and anxious they feel on a scale from 1 (not at all) to 7 (very). Participant's scores on the scale are best described as a(n)
 - a. independent variable.
 - b. operational definition.
 - c. confounding variable.
 - d. dependent variable.

3. Which of the following best describes the hindsight bias?
 - a. Events seem more predictable before they have occurred.
 - b. Events seem more predictable after they have occurred.
 - c. A person's intuition is usually correct.
 - d. A person's intuition is usually not correct.

4. Barb has index cards for her vocabulary test. What should she do with them to counteract the negative consequences of the serial-position effect?

Controlled Variables

- A controlled variable is not changed
- Also called constants
- Allow for a "fair test"
- Answers the question "What do I keep the same?"

Students of different ages were given the same jigsaw puzzle to put together. They were timed to see how long it took to finish the puzzle.

Identify the variables in this investigation.

What was the independent variable?

- Ages of the students
 - Different ages were tested by the scientist

What was the dependent variable?

- The time it to put the puzzle together
 - The time was observed and measured by the scientist

What was a controlled variable?

- Same puzzle
 - All of the participants were tested with the same puzzle.
 - It would not have been a fair test if some had an easy 30 piece puzzle and some had a harder 500 piece puzzle.