Journal – Day 5

• Answer AP Question #3 from the homework. We will discuss it when everyone is done.

• **Homework**
  – PowerPoint Slides – Day 6
  – Unit 1 Vocabulary Quiz – 9/7
  – Unit 1 HW and Test – 9/8
Experimentation and Research Methods

It is actually way more exciting than it sounds!!!!
Applied V. Basic Research

• Applied Research has clear, practical applications.
• YOU CAN USE IT!!!

Looking for a cure for cancer

• 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.
The Need for Psychological Science

Psychologists, like all scientists, use the scientific method to construct theories that organize observations and imply testable hypotheses.
The Need for Psychological Science

- **Hindsight Bias**
  - we tend to believe, after learning an outcome, that we would have foreseen it
  - the “I-knew-it-all-along” phenomenon

- **Overconfidence**
  - we tend to think we know more than we do
  - OVERCONFIDENCE WILL INHIBIT (OR STOP) CRITICAL THINKING (OR CREATIVITY)
The Need for Psychological Science

Critical Thinking

- thinking that does not blindly accept arguments and conclusions
  - examines assumptions
  - discerns hidden values
  - evaluates evidence
  - Overconfidence will inhibit this
The Need for Psychological Science

- **Theory**
  - *an explanation using an integrated set of principles that organizes and predicts observations*

- **Hypothesis**
  - *a testable prediction*
  - *often implied by a theory*
The Need for Psychological Science

- **Operational Definition**
  - *a statement of procedures (operations) used to define research variables*

- Example-
  - intelligence may be operationally defined as what an intelligence test measures
The Need for Psychological Science

- **Replication**
  - *repeating the essence of a research study to see whether the basic finding generalizes to other participants and circumstances*
  - usually with different participants in different situations
Experimentation

- **Experiment**
  - *an investigator manipulates one or more factors (independent variables) to observe their effect on some behavior or mental process (the dependent variable)*
  - *by random assignment of participants the experiment controls other relevant factors*
  - *For study to be considered an experiment it needs to include either random assignment OR manipulation of one independent variables*
Independent Variable

- Whatever is being manipulated in the experiment.
- Hopefully the independent variable brings about change.

If there is a drug in an experiment, the drug is almost always the independent variable.
Dependent Variable

• Whatever is being measured in the experiment.
• It is dependent on the independent variable.

The dependent variable would be the effect of the drug.
If I wanted to prove that smoking causes heart issues, what are some confounding variables?

- **The object of an experiment is to prove that A causes B.**
- **Factors which can influence or compromise the results of the experiment**

Lifestyle and family history may also effect the heart.