- **Psychology 1010-009. Class notes 9/2/14 Professor: Raymond**

- Why is the way we conduct research important?
- Facilitated communication
- Prefrontal Lobotomy
- Like scientific thinking, good research designs protect against several cognitive biases

Two modes of thinking

- **System 1 (intuitive)**

- **Fast**
- **Utilizes heuristics**
- **Heuristic: A mental shortcut or rule of thumb that helps us to streamline our thinking**

- **System 2 (analytical)**

- **Slower and deliberate**
- **Often thought to "over ride" system one**

* System 1 processing and heuristics usually lead to correct answers with minimal effort, but there are instances when these can cause an error in judgement

*What direction would you have to travel to go from Reno, Nevada to San Diego, Caloformia?

Answer: South-East

* Proper research designs in scientific thinking encourage the use of system 2 processing

Validity:

- External Validity

- Extent to which we can generalize findings to real- world situations

- Internal Validity

- Extent to which we can draw cause and effect relationships from studies

- Construct Validity(Called just validity in your text)

- Extent to which a measure asses what it claims to measure

Reliability:

- Reliability:

- The consistency of a measure (i.e. does it record similar responses over time).

- Interrater Reliability:
- Extent to which different raters (Interviewers, data coders, observers) agree on the characteristics they are measuring

Generalizability:

- Generalizability:
- Degree to which the results from a study can be said tot represent the entire population from which a sample was drawn
- Random selection
- Procedure that ensures every person in a population has an equal opportunity to be chosen to participate in a study
- This is key if we want to generalize the findings of a study to the entire population

- **Self report measures and surveys**
- Ask participants to report on themselves
  Personality traits, mental illness, traits, interests, opinions ect.
  Not necessarily asking participants directly about a topic
- The construct validity and reliability of the survey/questionnaire used is also extremely important
- Advantages
- Easy to administer
- People often have insight into their behavior that others cannot observe
- Disadvantages
- People don't always have full insight into their behavior however
- Assume people are honest in their responses
- Response Set: Participants distort their responses to questionnaire items
- Often to paint themselves in a more positive light

Types of research design

- Naturalistic observation:
- Watching participants behavior in real-works settings without attempting to influence that behavior

  \+ High in external validity
  \- Low in internal validity
  -Difficult to determine causation

- Case study
- In depth examination of a single individual, or a small group of individuals, often over an

extended period of time

+ Helpful in providing existence proof

-Existence proof: Demonstrates that a psychological phenomenon can occur

+ Useful in generating new hypotheses for future research

- Evidence is anecdotal and cannot be used to draw inferences

Types of research designs

- Correlation design

- Examines the extent to which two variables are associated with one another
- Correlations can be positive, zero, or negative

Positive: Both variables change together in the same direction

Zero: The variables are not associated at all

Negative: The variables systematically change with each other, but in opposite directions

Range from -1 to 1

1 is a perfect positive correlation, -1 is a perfect negative correlation

- + Allows us to make predictions based on the discovered relationships
- + Allows us to study phenomenon that are impossible to study experimentally
- - Correlation does not equal causation!!!
-

- Illusory Correlation

- The perception of a statistical association two variables where none exists
- Many superstitions develop from illusory correlation

We fall into them for many of the same reasons we discussed in the last chapter (pattern recognition, confirmation bias, belief perseverance, ext).

- Independent Variable (IV)

- A variable whose variation does not depend on another variable
- Manipulated by the experimenter

- Dependent Variable (DV)

- A variable whose value is dependent on another variable
- Measured by the experimenter to assess the effects of the independent variable

- Experimental designs

- Research design characterized by random assignment of participants into conditions and manipulation of an independent variable