

Studying Behavior

OPERATIONAL DEFINITION

- Defines a variable in terms of the specific procedures used to measure it.
- Translates the abstract into something observable and measurable.

Correlations

- Positive correlation
- Negative correlation
- No correlation

- a note about curvilinear relationships...

Three explanations for any correlation

- X causes Y (causal hypothesis)
- Y causes X (reverse causation hypothesis)
- Z causes both X and Y (the 3rd variable/confound problem)

Methodology

- Correlational vs. Experimental research
- Correlational research- descriptive designs
 - observation
 - surveys
 - interviews

- **NOTE: not all descriptive research is correlational**

The Experimental Method

- Can provide support for causal relationship
- involves direct manipulation by experimenter
- Two types of variables:
 - Independent: The variable the experimenter manipulates.
 - Dependent: The variable the experimenter measures as a response to the manipulation of the independent variable.

Random Assignment and Control

- With **random assignment** to conditions, each subject has an equal chance of being assigned to any of the various experimental conditions.
- Experimental Control is also very important.

Confounds

- confounds are uncontrolled variables **that vary systematically with the IV**
- might account for outcome of study

So why do correlational research?

- Useful for matters of description and prediction.
- Pilot studies.
- Some variables cannot be manipulated.
 - impossible (e.g. participant variables)
 - unethical

Quasi-Experiments

- Employ quasi-independent variables (not able to be manipulated)
 - usually subject variables like gender, age
- Therefore, we cannot use random assignment to conditions
- Essentially, Q-Es are correlational

Where we conduct research

- The laboratory- a research setting where the experimenter has control over the kind and sequence of events subjects are exposed to.
- The field- any naturally occurring environment.
- Which is better?

Types of experimental validity

- Internal validity- Does the relationship we observe reflect the real relationship between variables?
- External validity- Do the findings generalize to other settings and other subjects?
- Construct validity- Does the operational definition of the variable truly capture the theoretical meaning of the variable?

Internal Validity: Sources of Bias

- Confounds
- Demand Characteristics
- Experimenter effects

External Validity: Sources of Bias

- Biased sample –
- Example
 - interested in all voters
 - contact by telephone
 - biased sample - lower economic groups may not own telephones

Sampling vs. Assignment

	Random Assignment	No Random Assignment
Random Sampling	↑Internal Validity ↑External Validity	↓Internal Validity ↑External Validity
No Random Sampling	↑ Internal Validity ↓ External Validity	↓Internal Validity ↓External Validity

Questions to consider when doing research

1. What hypothetical constructs are involved?
2. How can you operationalize?
3. What type of design is best, given your resources and time frame?
Hint: There may be more than one way of looking at a question

KEEP IT SIMPLE!