

The Process of Conducting Research

What is a theory?

- a set of general principles that explains the how and why of phenomena.
- Theories are not directly testable.

What makes a good theory?

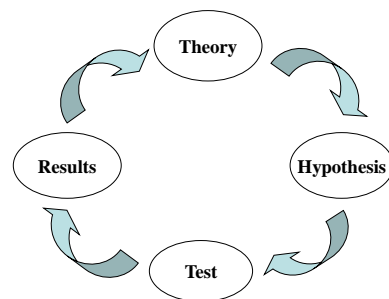
- Good theories are broad
- Good theories are parsimonious (simple)
- Good theories are generative

What is a hypothesis?

- an educated guess about how two or more variables are related.
- Can be CAUSAL or DESCRIPTIVE
- Hypotheses should be:
 - testable
 - falsifiable
 - precise
 - rational
 - parsimonious

Where do hypotheses come from?

The Scientific Process



Example of Scientific Method

- Generally, you have an observation:
- This leads to a theory:
- Next we operationalize this to a testable hypothesis:

OPERATIONAL DEFINITION

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

Evidence vs. Proof

- We measure in terms of statistics, which tell us whether a difference is likely to have occurred by chance.
- Even if difference is significant, it does not 'prove' a hypothesis.

Reporting your findings

- Psychological research is mostly reported in professional journals. Journal articles have a standard format. This makes them easier to read efficiently.
- You will write your own manuscript in this class, and it will follow this standard format.

What is "Peer-Review"?

- Experts in the author's field review the theoretical basis, methodology, statistical analyses and interpretation of findings.
- The editor and/or reviewers decide whether or not to accept the article for publication.
- The intended audience is scholars that have knowledge in or are interested in the field.
- The article is not written for profit.

How Do You Know if An Article is "Peer-Reviewed?"

- The article is written by the researchers that conducted the study.
- The journal has "instructions to authors" about the submission guidelines and peer-review process.
- In addition to the title and author information, the article includes abstract, introduction, method, results, discussion and reference sections.

Anatomy of a research article

- Abstract – summary of the research report, approximately 120 words in length.
- Introduction – Introduces the research question, reviews past research, states the hypothesis.
- Method – Describes the research design. These are the specifics of participants and procedures, and any materials used.

Anatomy of a research article

- Results – This is the statistical part of the article. Reports what was found in terms of the numbers (data).
- Discussion – States the conclusions to be drawn from the data. Discusses implications for future research, and possible limitations of the current research.