Non-Experimental Methods

- Overview of Non-Experimental Methods.
- Internal & External Validity.
- Manipulation & Constraint.
- Phenomenology.
- Case Studies.
- Field Studies.
- Archival Studies.
- Qualitative Research.
- Assignment #7: An Observational Study.

Overview of Non-experimental Methods

"Non-experimental methods" refers to a group of descriptive/observational research techniques that, while unable to clearly establish cause-and-effect, can nevertheless reveal important aspects of thought, behavior, & social interaction.

The primary non-experimental methods are Phenomenology, Case Studies, Field Studies, Archival Studies, Qualitative Studies, and Surveys & Interviews.

- Why use non-experimental research methods?
  1. Experimentation is not feasible or desirable.
  2. To test a hypothesis in a real-world setting.
  3. To learn (gather data) about real-world phenomena, prior to developing more mature theories & hypotheses.

Overview of Non-experimental Methods

In addition to Quantitative data, Non-experimental methods often use some form of Qualitative data.

- **Quantitative Data.**
  - numbers assigned to observations; data analysis and conclusions based on means, SDs, etc.

- **Qualitative Data.**
  - observations described in words; data analysis and conclusions based on verbal reports, descriptions, etc.
  - rarely used alone in Psychology; more often used alone in Sociology, Education, & Ethology.

- Many research projects in Psych use a combination of Quantitative and Qualitative data.
Overview of Non-experimental Methods

A major issue in the choice between experimental & non-experimental methods concerns Internal vs. External Validity.

- **Internal Validity.**
  - The degree to which a research design allows you to make causal statements (or draw firm conclusions).
  - Internal validity is generally high in experimental studies but lower in non-experimental studies.

- **External Validity.**
  - The degree to which research findings generalize to people or situations outside the research setting.
  - External validity is often thought to be high in non-experimental studies & lower in experimental studies.

All methods can be described along 2 dimensions:

- **Degree of Manipulation of Antecedents (Control).**
  - Low
  - Medium
  - High

- **Degree of Internal Manipulation of Outcome Variable.**
  - Low
  - Medium
  - High

<table>
<thead>
<tr>
<th>True Experiments</th>
<th>Non-Experimental Research</th>
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<tr>
<td>Low</td>
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<td>Medium</td>
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Phenomenology

- Describing & analyzing one’s subjective experience.
- Related to *introspection* ("arm-chair" psychology).
- Has a major inherent problem (that is nevertheless theoretically interesting): Trying to observe your own experience likely alters that experience.
- Has other problems including (a) accuracy & objectivity; (b) replication; (c) generalization; and (d) providing causal explanations.
- May often involve little manipulation of antecedents or constraints on responding. However, the use of phenomenology (subjective experience) may not always be so limited... (see next slide).
The Remember/Know Procedure

Used in memory research to measure the different kinds of subjective experience that accompany remembering.

- Set-up: Subjects study a list of items (words, faces, etc.) and then are given a recognition test; for each test item the subject thinks they studied, they are to respond “Remember” or “Know”.

- **“Remember” Judgment.**
  - “Make this response if you can recollect the details surrounding the test item’s prior presentation; what you saw, heard, felt, or were thinking about at the time.”

- **“Know” Judgment.**
  - “Make this response if the test item is familiar, you know it was presented, but you can’t recollect any specific details about its prior presentation.”

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Effect of Age on Remember/Know Judgments

*Parkin & Walter (1992)*

![Graph showing the effect of age on remember/know judgments.](image)

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Case Studies

- An intensive investigation of one individual.
- Used for a variety of purposes including:
  - studying rare phenomena.
  - development & initial testing of new hypotheses, theories, or therapies.
  - testing or disproving ideas, theories, or practices.
- Main problems are with (a) replication and (b) ability to generalize to others.
- May often involve little manipulation of antecedents or constraints on responding. However, this is not always the case, esp. when case studies are used to test accepted ideas or theories... (see next slide).
Case Studies
Patient C.K.: Unable to identify common objects (visual agnosia) but can draw them from memory

Dissociation between mental imagery and object recognition in a brain-damaged patient

Malcolm Biglow**, Errol Watson**

*Vorpal Imagery* is the creation of mental representations that share many features with vividly visual perceptions. Studies of normal and brain-damaged people reinforce the view that visual imagery and visual perception are mediated by a common neural substrate and activate the same representations* **. Thus, brain-damaged patients with intact vision who have an impairment in perception should have impaired visual imagery. Here we present evidence in the contrary from a patient with severely impaired object recognition (visual object agnosia) but with normal mental imagery. He draws objects in considerable detail from memory and uses information derived from mental images in a variety of tasks. In contrast, he cannot identify visually presented objects, either real or drawn by himself. He has normal visual acuity and intact perception of equally complex material in other domains. We conclude that the inability of normal subjects to support visual imagery even when they cannot support visually mediated perception of objects.

Field Studies
Field studies are observations or experiments conducted outside of the lab, in real-world settings ("in the field").

- Two general categories of Field Studies: Naturalistic Observation & Participant-Observation.
- In both cases, there is little or no manipulation of antecedent conditions; and little or no constraint on how "participants" respond.
- A major concern in field studies (any study that involves one person observing another) is Reactivity: The tendency of a person or animal to alter their behavior when they are (aware of) being watched.
- Because of this, field researchers often conceal their presence; or augment their study with unobtrusive measures (such as the lost-letter technique).
Field Studies

- **Naturalistic Observation.**
  - observing & recording behaviors as they occur spontaneously in real-world settings & situations.
  - often used to study animals in the wild, mother-child interactions, organizations, and in market research.
- **Often uses techniques for the Systematic Recording of relevant events:**
  - Frequency Method: Counting instances of behavior X.
  - Duration Method: Recording how long behavior X lasts.
  - Time Sampling: Only making observations during a specific period of time (e.g., watch 30s, record 30s).
  - Event Sampling: Only counting behavior of type X.
  - Individual Sampling: Only watching person Z.

Field Studies

- **Participant-Observation.**
  - actually becoming part of the group you’re studying.
  - used to investigate groups that (a) are difficult to study with traditional methods; (b) are expected to show high reactivity; or (c) would not give consent to be studied.

  - Motorcycle gangs
  - UFO Cults
  - Radical Groups
  - Overweight
  - Elderly
  - Marketers

Archival Studies

- **Archival studies use existing records to investigate a novel issue.**
  - Numerous records can be used including census data, library records, consumer records, sports stats, crime rates, website hits, etc.
  - Examples of research using archival data include:
    - Relation between race and sports-related violence (e.g., getting hit by a pitch in MLB: Timmerman, 2002).
    - Whether Black (vs. White) uniforms lead to greater aggression in sports (Frank & Gilovich, 1998).
    - Examining societal changes in the perception of beauty or criminality, the size or layout of housing, etc.
  - Can be a part of an expt’al study or meta-analysis.
Qualitative Studies

- Involves examination of verbal reports ("content analysis") rather than quantitative data.
- Used to study phenomena that are highly dependent on the context in which they occur.
- Two major drawbacks to qualitative research:
  1. the difficulty of verbal analysis;
  2. the fact that self-reports are open to many biases.
- Qualitative Studies often rely on Retrospective Reports for data (i.e., reports based on memory).
  Such reports can be biased by a number of factors including forgetting, self-presentation, unconscious distortion of events, and even false memories.

Assignment #7: Prime-Time Sex & Violence

- Part A: Data Collection [5 points]. Each student will watch a TV program on a major network that airs between 8pm & 11pm and record the number of sexual or violent acts (to be op. defined in class). Data must be recorded on the designated form and is due by class-time on Oct. 2, no exceptions.
- Part B: Research Report [20 points]. A final research report describing the study is due Oct. 16. This report should be an individually-written account of the entire study in APA format with all relevant sections (from Title page to Figures) and at least 3 references of papers you actually read. Grading will be based on both format as well as content (including statistics).
- Mail your final report to MethodsTA@yahoo.com & turn in hard copies to me (by the dates noted above).

Assignment #7: Prime-Time Sex & Violence

- How do we want to operationally define Sex and/or Violence?
- Following is the operational definition of Physical Violence used in a paper by Williams et al. (1982; Journal of Applied Social Psychology, 12, 360-380):
  "The overt expression of physical force, with or without a weapon, against self or other, compelling action against one’s will on pain of being hurt or killed, or actually hurting or killing. Must be plausible or credible; no idle threats, verbal abuse, or comic gestures with no credible violent consequences. May be intentional or accidental: violent accidents, catastrophes, and acts of nature are included”.
- Is there an important difference between physical violence to humans vs. animals or inanimate objects?
- Between physical violence with vs. without a weapon?
- Does a verbal or non-verbal threat constitute violence?