Lab Research

PSY 395
Oswald

Outline

- Experimental vs. Correlational Designs (again)
- When to Use Lab Research
- Types of Lab Research
- Problems with Lab Research
- Elements of Lab Research

Experimental vs. Correlational Designs

Is inhibition related to aggression in teenagers?

**Experimental Design:**
Group 1: Have teens perform a cognitively demanding task (20 long-division and 20 multiplication problems), then have them navigate through NYC traffic in a driving simulator.
Group 2: Have teens perform a cognitively simple task (connect-the-dots), then have them navigate through NYC traffic in a driving simulator.

- IV: Cognitive task
- DV: Number of times drivers use their horn.
- Hypothesis?
Is inhibition related to aggression in teenagers?

**Correlational Design:**
Do an fMRI scan to see how active the frontal lobes are (responsible for cognitive inhibition)
Have teens complete a self-report survey of their past aggressive behaviors (saying something mean, getting in a fistfight, cutting in line)
- Hypothesis?

---

**Cronbach (1957)**

2 Disciplines of Scientific Psychology

- Experimental psychology (lab research)
  - concerned with between-treatments variance;
  - derives the hypothesis explicitly from theoretical premises and tests it
  - tries to control for individual differences: goal is to control behavior and "variation within treatments is proof that he has not succeeded"

---

- Correlational Psychology (field research)
  - the goal is to predict variation 'within' a treatment
  - many factors that may affect the DV are free to vary
  - sophisticated data analysis, not necessarily matched by theoretical sophistication

---
2 Disciplines of Scientific Psychology

- **Experimental** psychology treats all persons alike and modifies treatments to obtain the highest average performance.
- **Correlational** psychologists raise average performance by treating persons differently.
  - Example: Best method for learning text vs. tailored training.

Conclusion: Need to integrate both perspectives.

---

When to Use Lab Research

- **Universalistic vs. Particularistic research question**
  - Um...doesn't make much sense!
  - General question vs. focusing on a particular population/setting/time – but all research is bound to a population/setting/time
  - Research findings (whether 'universalistic' or 'particularistic') should be considered with respect to generalizability

---

When to Use Lab Research

- **Basic vs. Applied research question**
  - Somewhat tied to experimental vs. correlational
  - What *might* happen vs. what *does* happen
  - The former doesn’t necessarily imply the latter
  - Example: Does an entertaining video help distract children from pain?
    - Basic research: Controlled setting, administer a standard pain stimulus – mild but irritating shock
    - Applied research: Use the video in the burn unit as doctors change the dressings
When to Use Lab Research

- Manipulable vs. Non-manipulable IVs
  - Many IVs can’t be manipulated (e.g., gender, intelligence, personality)
  - Ethics of manipulation (e.g., psychological effects of losing a limb)
  - Short vs. Long time frame
  - Lab research is best suited for short term investigations
- Participants awareness of the research
  - In lab research participants know they are being researched

Types of Laboratory Research

- Impact Studies
  - Classic studies…the manipulation “happens” to the participants.
    - Confederate stunts (staged emergencies)
    - Milgram study, Zimbardo’s prisoner study, social distance study
    - Simulations that vary information provided

- Judgment Studies
  - Participants are more passive…a set of conditions is provided and the person makes a judgment
    - Stereotyping
    - Loss vs. gain frames in decision making
      - Wearing sunscreen prevents skin cancer.
      - If you don’t wear sunscreen, you are more likely to get skin cancer.
- Observational studies with controlled conditions
  - Spousal or family interactions
  - Interactions in the playground
  - Build-a-tower experiment
Problems with Lab Research

- Experimenter Expectancy Effects
  - Rosenthal studies of rating photos of “successful people”
  - Need to keep the experimenter “blind” to the condition of the study
  - Minimize interaction with participants
  - Careful training of experimenters
  - Set up independent camps: experimenters, data-analysts, report-writers
  - Expectancy control group design
  - Double-blind controlled studies

- Replication
  - Need to replicate lab research in real settings across populations and contexts to demonstrate generalizability of findings.

- Demand Characteristics
  - Personality and situational strength (Mischel)
    - Individuals differences don’t matter as much in strong situations
    - (They do matter in weak situations/manipulations)
  - The lab situation can be very powerful!
    - Novel
    - No unintended distractions
    - People do what they are told to do (Milgram study)
    - Pick up poisonous snakes, fish out a penny from an acid solution, tear sheets of paper into no less than 32 pieces, etc.
<table>
<thead>
<tr>
<th>Elements of Lab Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting and cover story</td>
</tr>
<tr>
<td>IVs and Confounding variables</td>
</tr>
<tr>
<td>Manipulation Checks</td>
</tr>
<tr>
<td>DVs (not too many!)</td>
</tr>
<tr>
<td>Debriefing</td>
</tr>
<tr>
<td>- Learn which participants attended to the experiment</td>
</tr>
<tr>
<td>- Learn which participants correctly guessed the purpose of the experiment</td>
</tr>
</tbody>
</table>