What We Will Cover in This Section

• Why research.
• Basic techniques.
  – Naturalistic
  – Survey
  – Correlational
  – Experimental
• Issues and Ethics.

Goals of Research

• Describe.
• Explain.
• Predict.
• Control.
Goals of Research

DESCRIPTION
The accurate portrayal of a situation or phenomenon.

EXPLANATION
The statement of the cause of some situation or phenomenon.

Goals of Research

PREDICTION
The ability to anticipate the occurrence of some event.

CONTROL
Manipulation of some condition(s) to produce a change in behavior.

Terms

• THEORY
  – A general statement about the relationship between variables.

• HYPOTHESIS
  – A specific statement about the relationship between two or more variables.

• Observation
  – The formal collection of data to assess a specific hypothesis.
How the System Works

**THEORY**
Behavior that is reinforced will be repeated.

**MAJOR HYPOTHESIS**
If I give a reward after a behavior, that behavior will be strengthened.

**MAJOR HYPOTHESIS**
If I punish a behavior that behavior will be forgotten.

**RESEARCH HYPOTHESIS**
Rewarding a dog for getting your slippers will result in his getting your slippers more frequently.

**RESEARCH HYPOTHESIS**
Smiling at a professor when he lets you out of class early will result in more early dismissals.

**OBSERVATION #1**
The class smiles at a professor each time he lets you out of class early.

**OBSERVATION #2**
People don’t smile at the professor when he lets you out of class early.

---

Organizing Our Knowledge

**THEORY**

Hypothesis

Observation
Observation
Observation

**Hypothesis**

Observation
Observation
Observation

---

How Science Works

**THEORY**

**HYPOTHESIS**

**OBSERVATION**
Where Research Is Done

- **Laboratory**
  - **Benefits**
    - Control
    - Clear measurement
    - No extraneous variables.
  - **Problems**
    - Generalizability.
    - Realism.
- **Field**
  - **Benefits**
    - Realism
    - Generalizability.
  - **Problems**
    - Control.

Observational Research

1. **Naturalistic Observation**
   
   *Study method in which the researcher looks at and records behavior in a natural setting with no attempt to influence behavior.*
Advantages and Comments

- Identify relevant variables and possible environmental influences on behavior.
- Record behavior in risky or dangerous situations.
- Explore the generalizability of laboratory findings.

2. Participant Observation

*Study method in which the researcher participates in the group while recording its behavior.*

Types

Active Participation

Researcher is actively engaged in the group’s activities.

Passive Participation

Researcher is known to the participants but does not become engaged in their activities.
Advantages

- Best used with an isolated group.
- Good for gaining a direct understanding of group dynamics.
- Record rare and fleeting events.
- Gain an understanding of risky or dangerous events.

Issues and Problems

- Biases.
  - Selective attention.
- Record keeping.
  - Instrument decay.
- Reactivity.
  - Experimenter.
  - Participant.
- Gaining access.
- Ethics.
  - Invasion of privacy.
  - Confidentiality.
- Typicality of the group.

3. Archival Research

Gathering information from existing records.
Advantages

- Permits unobtrusive data collection.
  - Minimizes reactivity.
- Collect data from people who might not otherwise be available.
- Permits retrospective research and data collection.
- Minimal ethical issues.
- Minimal expense.

Issues

- Records keeper.
  - Reliability (instrument decay).
  - Biases.
- Access to documents.
- What are you measuring?

Correlational Research

Focus on the degree to which two variables are related.
### Positive Correlation Example

- Attractiveness vs. Liking
- Correlation coefficient ($r = +0.73$)

### Negative Correlation Example

- Average TV Watching Time vs. GPA
- Correlation coefficient ($r = -0.42$)

### Zero Correlation Example

- Shoe Size vs. GPA
- Correlation coefficient ($r = 0$)
Correlational Conclusions

• Strength of the relationship.
  – From +1.00 to –1.00.
  – Zero means no relationship.
  – Stronger relationships are closer to 1.00 or –1.00
• Direction of the relationship.
  – Positive.
  – Negative.

 QUESTION

• Which of the following correlation coefficients indicates the strongest relationship?
  A. +.45
  B. -.33
  C. +.58
  D. -.67
WARNING!!!!

**cannot Conclude Causality**

---

**Research Example**

While conducting research in Helsinki, Finland a demographer found that the correlation between the number of stork nests on chimneys was positively correlated \( (r = .38) \) with birth rate.

---

**CONCLUSION**

A. Storks bring babies.
B. Male storks make babies in unfaithful human females.
C. Babies make storks.
D. I haven't the slightest idea.
**Experimental Technique**


**Experimental Research**

<table>
<thead>
<tr>
<th>Music type</th>
<th>Mean mood rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggressive</td>
<td>78.67</td>
</tr>
<tr>
<td>Calm</td>
<td>54.50</td>
</tr>
<tr>
<td>Silence</td>
<td>63.00</td>
</tr>
</tbody>
</table>

**Experimental Elements**

**EXPERIMENTAL GROUP**
The group that gets the treatment you are interested in. (Music Type)

**CONTROL GROUP**
A group included in the experiment that does not get the experimental treatment. (Silence)
Experimental Elements

DEPENDENT VARIABLE
The variable that is measured in an experiment. (Mood evaluation)

INDEPENDENT VARIABLE
The treatment that the experimenter manipulates or controls. (Type of music)

Group Problem
Assume that you have been asked to design an experiment that demonstrates that women who have tattoos are seen as being more attractive than women without tattoos.

Be sure to indicate all groups and variables.

Research: Issues and Ethics
Research Issues #1

- **REACTIVITY Problem.**
  People’s behavior changes when they know they are being watched.

- **DEMAND CHARACTERISTICS.**
  Knowledge of the research hypothesis may influence a person’s behavior.

Research Issues #2

- **DECEPTION.**
  Occurs when the research design requires the researcher to give misleading information to the study participants.

- **CONFEDERATES.**
  Associates of the researcher whose identity is kept from the participants.

Ethical Issues

- **PROTECTION FROM HARM**

- **INFORMED CONSENT**
  Telling participants of the nature of the study and the possibility of physical and mental discomfort, harm, and danger.

- **DEBRIEFING & DEHOAXING**
  Telling participants about any deception and the true nature of the study.
Sample Multiple Choice Item.

1. This course is called
   A. Elementary physics
   B. Fun with sushi.
   C. Social psychology.
   D. Existential phenomenology.
Typical TRUE FALSE items.

1. TRUE FALSE  California University of Pennsylvania is not located in the state of California.
2. TRUE FALSE  Your professor is Wolley Segap.

Typical Fill-in Item

_______ is the current President of the United States.

Your incredibly handsome instructor sports what kind of neckwear?

Typical Definition

Define and give an example of the term CHEATING.

CHEATING occurs when a person copies another person’s work and turns it in as his/her own. An example would be copying someone’s quiz answers or turning in someone else’s paper and taking credit for it.
Examples of Bad Definitions.

CHEATING is when you cheat and do bad things. Like taking your friend's pencil.

CHEATING is illegal stuff people do in class and they get caught.

The End