

General Psychology

Psy 100

Research Techniques



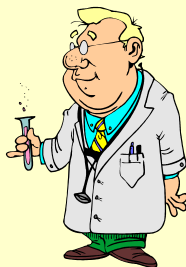
What We Will Cover in This Section

- How science works.
- Research Techniques
 - Observational
 - Correlational
 - Experimental
- Ethics

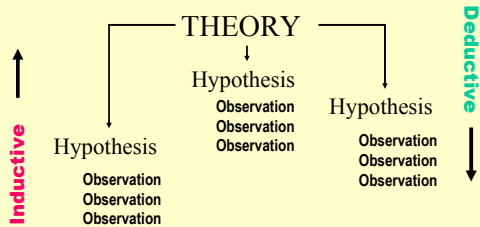


Goals of Research

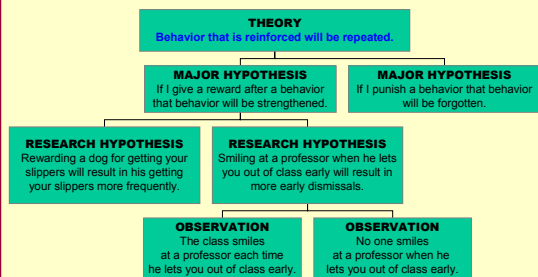
- Describe behavior.
- Explain behavior.
- Predict behavior.
- Control behavior.



Organizing Our Knowledge



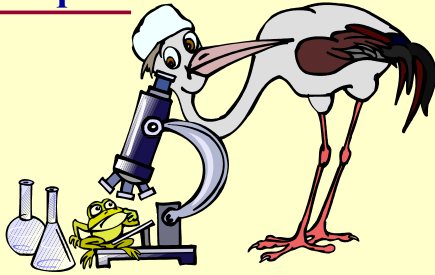
How the System Works



Where Research is Done

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

Research Techniques



Field Research Example

- In 1984 Pittsburgh National Bank had a problem with their tuition reimbursement program.
- They were paying tuition and fees for employees seeking bachelors degrees.
- Approximately 45% of the people did not want to work in the field in which they majored.
- The bank was prepared to scrap the program.

Experimental Design #1

	Independent Variable	Dependent Variable
Experimental Group	342 people who attended workshop	Job posting Applications 70% Promotions: 12% Salary/grade change: 91%
Control Group	450 people who did not attend the workshop.	Job posting Applications 23% Promotions: 3% Salary/grade change: 66%

Experimental Groups

EXPERIMENTAL GROUP

The group that gets the treatment you are interested in.

CONTROL GROUP

A group included in the experiment that does not get the experimental treatment.



Experimental Variables

DEPENDENT VARIABLE

The variable that is measured in an experiment.

INDEPENDENT VARIABLE

The treatment that the experimenter manipulates or controls.



Experimental Design #2

	Independent Variable	Dependent Variable
Experimental Group	Rats given maternal blood	Mean retrieval time: 2.25 days
Control Group	Rats given saline solution.	Mean retrieval time: 7.00 days



Small Group Problem

Assume that you have been asked to design an experiment that demonstrates that men with tattoos are seen as being more attractive than men without tattoos.

Be sure to indicate all groups and variables.



Question

What was the most difficult part of designing your experiment?



Operational Definition

Defining a variable or condition in terms of the specific techniques or procedures used to manipulate or measure it.

Thirsty

Deprived of water for 12 hours.

Given a teaspoon of salt and no water for 1 hour.

Attractive

Rated as being pretty on a ten-point scale.

Over 50, balding, and wearing a bow tie.



Experimental Conclusion

With a well designed experiment you can conclude that the Independent Variable **CAUSED** changes in the Dependent Variable.

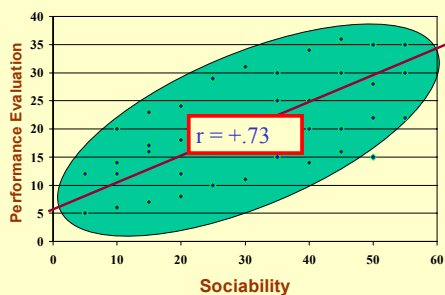


Correlational Research

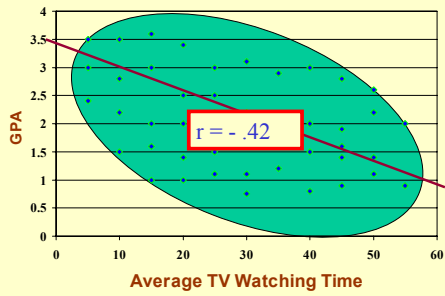
Focus on the degree to which two variables are related.



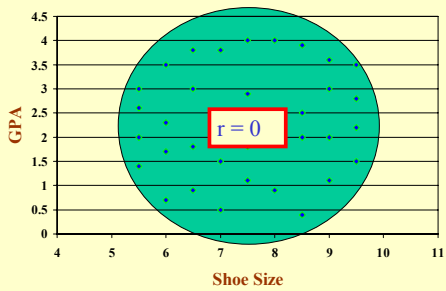
Positive Correlation Example



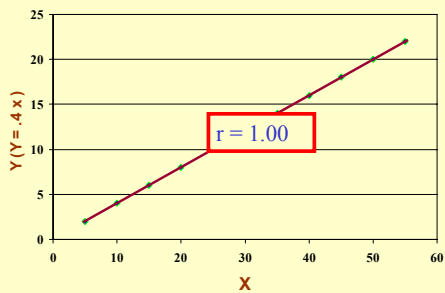
Negative Correlation Example



Zero Correlation Example



Perfect Positive Correlation Example



Measuring the Correlation

Coefficient	Strength
.60 to 1.00 -.60 to -1.00	Very strong
.40 to .59 -.40 to -.59	Moderate
.20 to .39 -.20 to -.39	Weak
-.19 to +.19	Very weak



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 represents the strongest correlation?

- .42
- .61
- .16
- .09



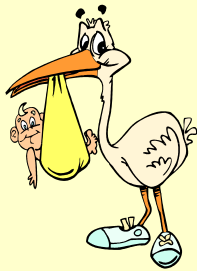
WARNING!!!!

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.



Survey Research

- Questionnaires.
 - Advantages.
 - Quick.
 - Lot of people.
 - Inexpensive.
 - Disadvantages.
 - Who returns?
 - Response bias.
 - Follow-up questions.
- Interviews.
 - Advantages.
 - Control sample.
 - Follow-up questions.
 - Disadvantages.
 - Time.
 - Expense.
 - Evaluating responses.
 - Response bias.



Direct Observation

- Case Study.
 - Direct observation of an individual.
 - Usually done when the situation is unusual or unique.
- Group Observation.
 - Conducted when one wants to see how individuals in a group behave.



Question

What is a potential problem with the Direct Observation technique?



Survey and Observation Conclusions

Generally limited to describing what happened.



Ethics in Research

Key Principle

Do No Harm

Primary Elements

1. Informed Consent.
2. Voluntary Participation.
3. Confidentiality.
4. Deception.
5. Debriefing.

This section is finished!

But there is a new section next time!