

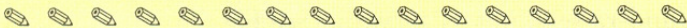
## **Descriptive Methods**

- The case study
- Naturalistic observation
- The survey

## Descriptive Methods: Surveys

A descriptive technique for obtaining the self-reported attitudes or behaviors of a particular group, usually by questioning a representative, random sample of the group. (page 30).

**Survey on Behalf of the Litterers' Society**



1. Prior to reading the enclosed letter, were you aware of how little damage litter does to the environment, or how much money the government wastes in an effort to harass innocent citizens who happen to drop a little bit of litter now and then?  yes  
 no

2. Do you agree that moderate, responsible littering is one of the rights we should expect in a free society?  yes  
 no  
 undecided

3. Are you in favor of having the government use your tax dollars to arrest and persecute people whose only "crime" is littering?  yes  
 no  
 undecided

4. Do you see a need for an educational campaign to inform the public about the good that littering contributes to *natural* recycling?  yes  
 no  
 undecided

5. Are you outraged that short-sighted do-gooders would pass extremely restrictive, punitive laws against littering, merely to advance their own political careers?  yes  
 no  
 undecided

6. Do you support the noble attempts of the Litterers' Society to fight against excessive and unnecessary regulations, and will you support the Society with your generous donation?  Yes! Enclosed is my generous donation!  
 Sorry, I can't afford a contribution at this time.

**FIGURE 2.11**

*An example of how to bias a survey to get the answers one desires. This is an imaginary survey for an imaginary society, but the style of the questions is similar to those found in many "surveys" sponsored by real political and other organizations. The request for a donation is a reliable clue that the organization is not really seeking your opinion and probably will not even tabulate the results.*

Image source: Kalat

## Surveys



“Would you say Attila is doing an excellent job, a good job, a fair job, or a poor job?” Drawing by Chas Addams; ©1982 The New Yorker Magazine, Inc.

Image source: Santrock

### Examples of Surveys:

- How many hours per week do most people watch violent TV programs?
- How is our customer service at Home Depot, Office Depot, Red Robin, etc.?
- How do you feel toward your President?
- What do you give your boyfriend/girlfriend for St. Valentine’s Day?
- An Industrial/Organizational psychologist tests to see if wearing nametags make the employees happier with their work.
- A Personality psychologist explores whether extroverted people have more fun at parties than introverted people.

## Surveys

### Example:

In 2011, a 60 Minutes/Vanity Fair poll asked the following and discovered the following:

How should you balance the budget?

61% responded with increase taxes for the wealthy

20% responded with cut defense spending

4% responded with cut Medicare

3% responded with cut social security

The results of a survey only tell you what people think, which may or may not reflect reality.

What was the other example from class where a survey reflected what people thought, which may not be what actually occurs?

### Strengths of surveys:

- A large amount of information can be acquired quickly.
- Accurately predictions of large-scale trends can sometimes be made.

### Weaknesses of surveys:

- Generalizability may be questionable unless persons surveyed are a representative sample of a larger population. Many “call-in” or magazine surveys do not have a representative population. Most are self-selected and represent a small slice of the population.
- Responses provided may be inaccurate due to a person’s lack of awareness of their own attitudes and biases.
- The characteristics of the interviewer may influence the response.
- Interpretation of the answers may be difficult, especially with a biased survey.
- Surveys lack the ability to explain.

## **Problems with Surveys: Leading Questions**

When collecting data with surveys, you need to be careful

- about the wording of the questions and avoid leading questions,
- the choice of words, and
- that the sample is representative of the much larger population.

Ideally, survey questions are worded so as not to suggest a desired answer where interviewees will answer in a way that they think the interviewer or sponsoring organization wants to hear, thus making the survey flawed for scientific purposes, (but good for political purposes). Such surveys include questions that are intentionally worded in a biased manner.

### **Examples of good questions:**

- Which candidate do you plan to support?
- Do you think that increased parking fees would be a good idea or a bad idea?

### **Examples of bad questions:**

- Do you plan on supporting Hillary Clinton?
- Do you plan on supporting Donald Trump?
- Are Macs better than PCs?
- Is Captain Picard better than Captain Kirk?
- Do you think a woman should have the ability to choose...
- Do you think the life of a child is important...

## Problems with Surveys: Word Choice

In addition to how a question is phrased, small changes in words can affect the outcome of a survey. For example:

A survey question: "DO YOU FAVOR OR OPPOSE \_\_\_\_\_ BEING ALLOWED TO SERVE OPENLY?". The results are shown in a table with two columns: "Homosexuals" and "Gay Men & Lesbians". The rows are "Favor" and "Oppose". The percentages are: Favor (44% for Homosexuals, 58% for Gay Men & Lesbians) and Oppose (42% for Homosexuals, 28% for Gay Men & Lesbians).

	"Homosexuals"	"Gay Men & Lesbians"
Favor	44%	58%
Oppose	42%	28%

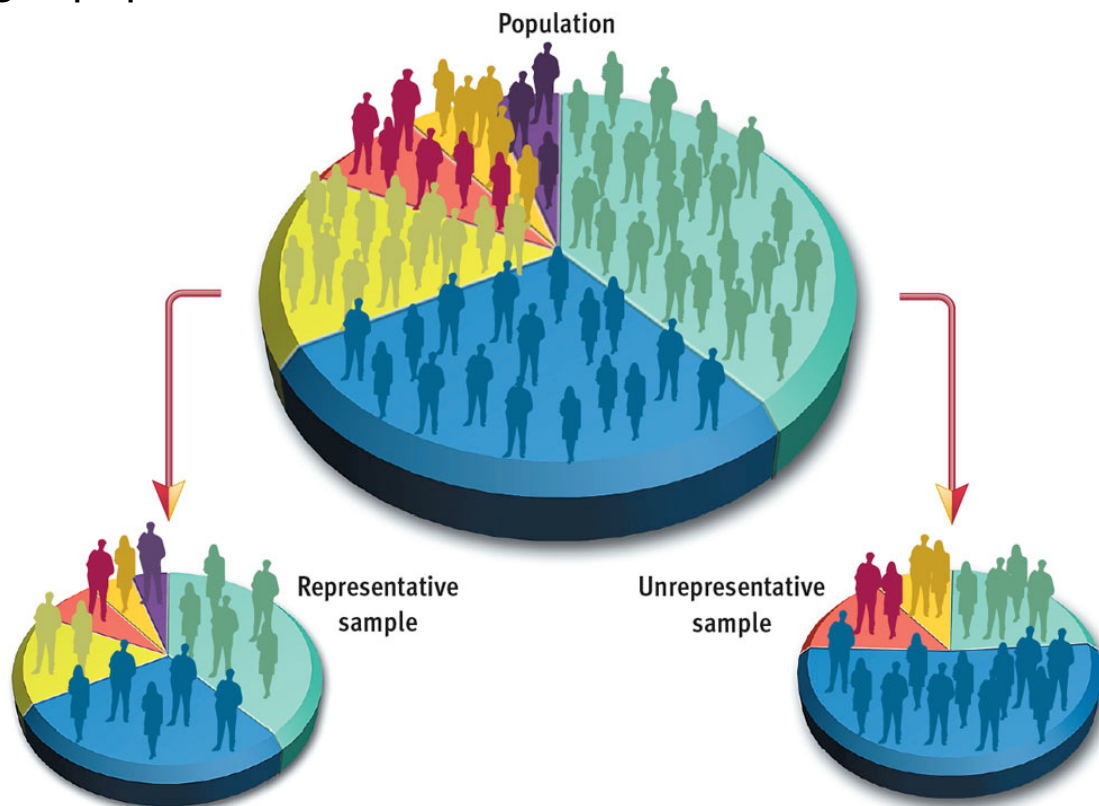
Image source: CBS

While there is no real descriptive difference between “homosexuals” and “gay men and lesbians”, there is an emotional and cognitive difference. The emotional and cognitive difference affects how people respond to their opinions.

If you don't know much about the topic or thought about the topic, we react emotionally (see peripheral route of persuasion, [chapter 13](#)).

## **Problems with Surveys: Unrepresentative Samples**

You cannot survey the entire population to find out what they think. You can take a smaller sample and have a 95% confidence that your sample is similar to the larger population as long as your sample is a representative sample of the population—the sample resembles the larger population.



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Image source: Weiten

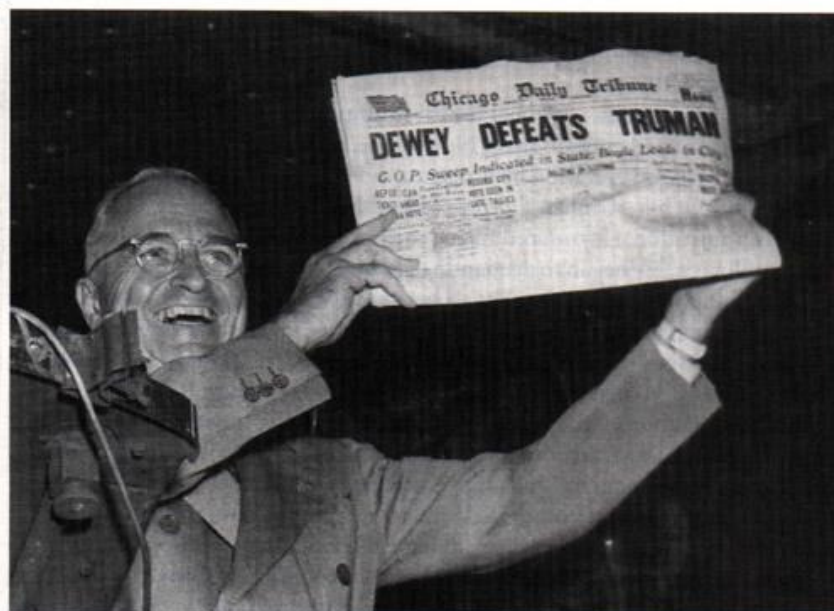
Most call in internet, television and radio show participants have strong beliefs and choose to volunteer their opinions and thus do not resemble the larger population.



## Examples of non-representative samples:

- A senator is interested in whether his constituents favor the death penalty. His staff reports that letters about the death penalty have been received from 854 constituents and 654 favor it.
- A cookie manufacturing company wants to know what percentage of Denver residents make cookies from scratch. A sample of 1,000 residential addresses is chosen and interviewers call these households during regular working hours on weekdays.
- A newspaper is interested in finding out what proportion of drivers in the city wear seat belts. Some reporters go to a GM plant and record the number of employees who fasten their set belts when they leave work.

## Consequences of an Unrepresentative Sample



## Descriptive Methods: Correlation

A correlational study is a research method that describes and predicts how variables are naturally related in the real world, without any attempt by the researcher to alter them or assign causation between them (page 31) (not the definition from Myers).

Unlike experiments that manipulate one or more variables (the independent variable), correlations do not manipulate any variables. Correlations only measure pre-existing variables.

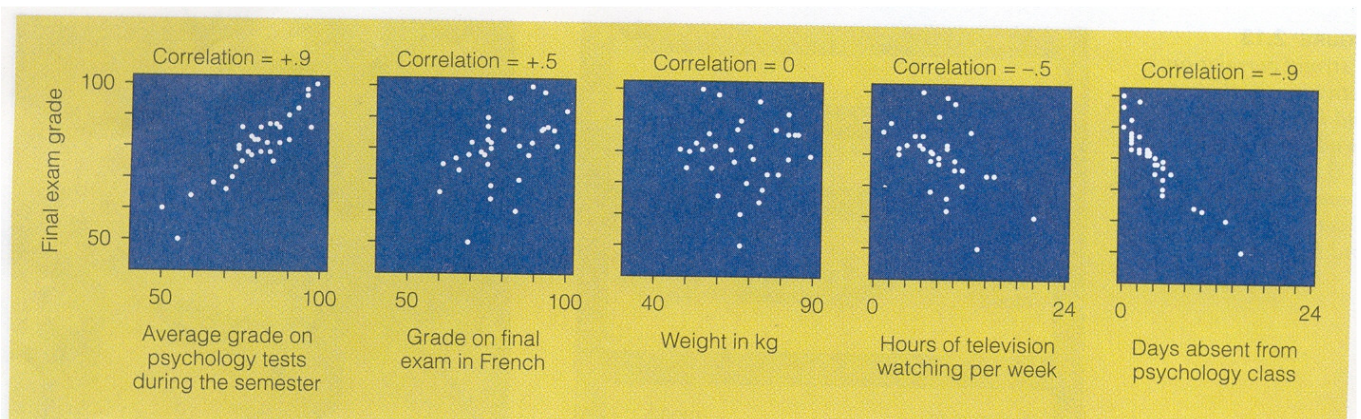


Image source: Kalat

\*correlations can examine more than two factors, but for an introductory course, we will restrict our discussions to two variables.

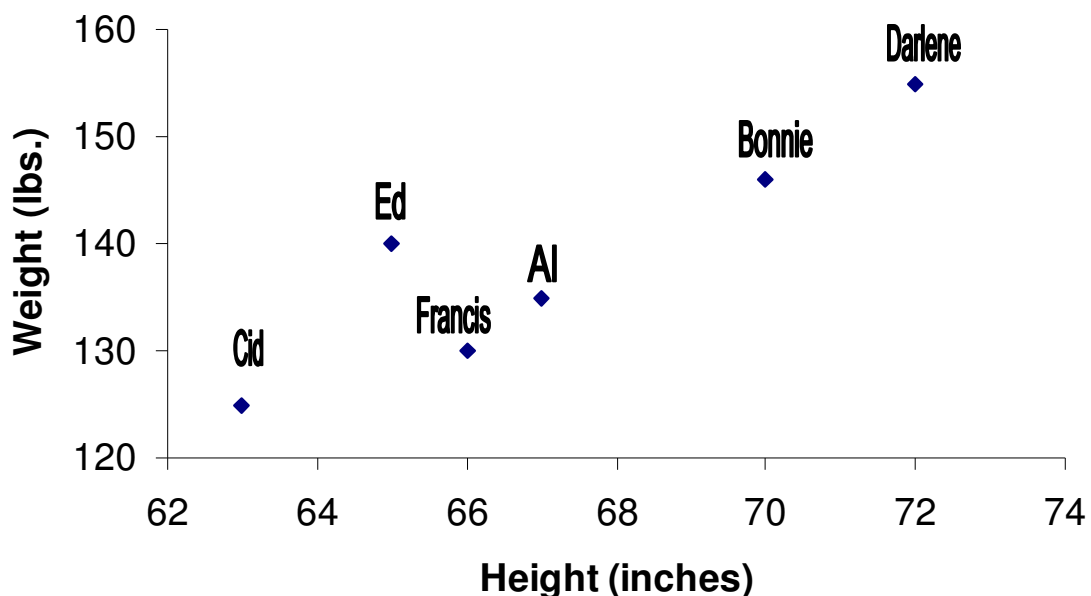
## Measuring Correlation

Correlation: A correlation examines the relationship between two (or more) variables. A correlation occurs between a series of data (height and weight), not an individual such as Al, Bonnie, Cid, etc.

Correlations can be used to predict one variable from the other. It cannot show causation.

### The relationship between height and weight

	Height (inches)	Weight (lbs.)
Al	67	135
Bonnie	70	146
Cid	63	125
Darlene	72	155
Ed	65	140
Francis	66	130



## Correlation and the Correlation Coefficient

### Correlation coefficient:

A measure of the direction and strength of a correlation which is signified by the letter  $r$ .

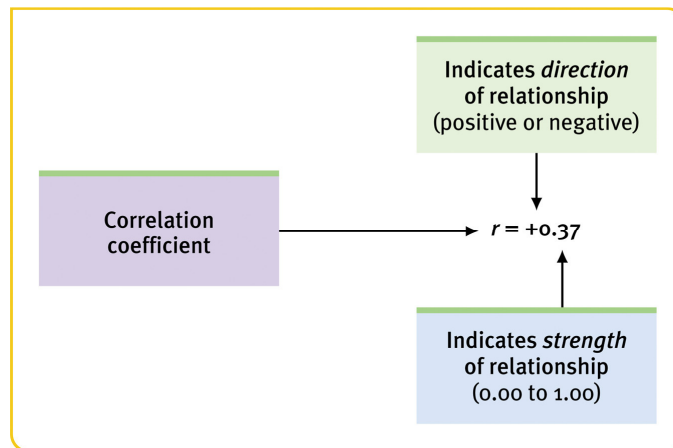


Image source: Psychology (????), Myers

There are two aspects of a correlation coefficient.

- The sign that measures direction of the relation (the correlation) between two variables.

- A numeric value that measures of the strength, and

A correlation coefficient ranges from -1 to +1. The closer the correlation coefficient is to **+1** or **-1**, the stronger the relationship.

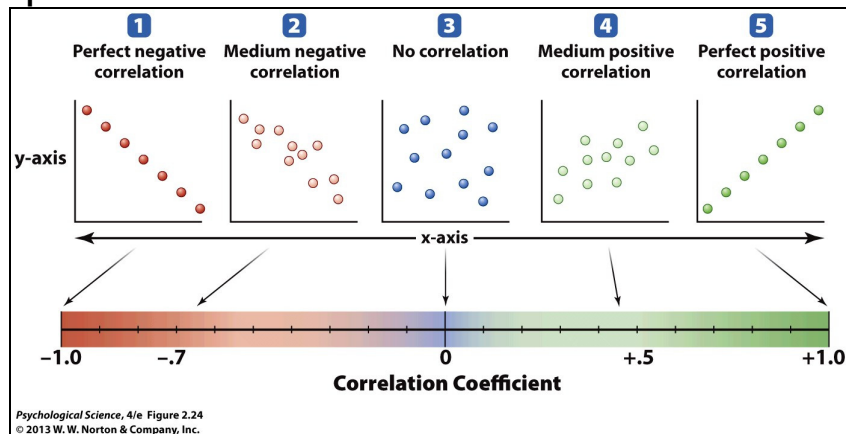


Image source: Gazzaniga, Heatherton and Halpern, Psychological Science (2011).

## Correlations Coefficients The Sign/Direction of relation

- **A positive correlation** indicates that the variables act in the same direction. As one variable increases, the other tends to increase or as one variable decreases, the other decreases.
  - For example, the most crowded areas of a city are the most impoverished.
- **A zero correlation** indicates that there is no relation between the two variables.
  - For example, there is no relation between a person's telephone number and their IQ score.
- **A negative correlation** indicates that as one variable increases, the other tends to decrease.
  - For example, trust in other people and cheating other people are negatively correlated.

### Examples of magnitude and direction of the relation:

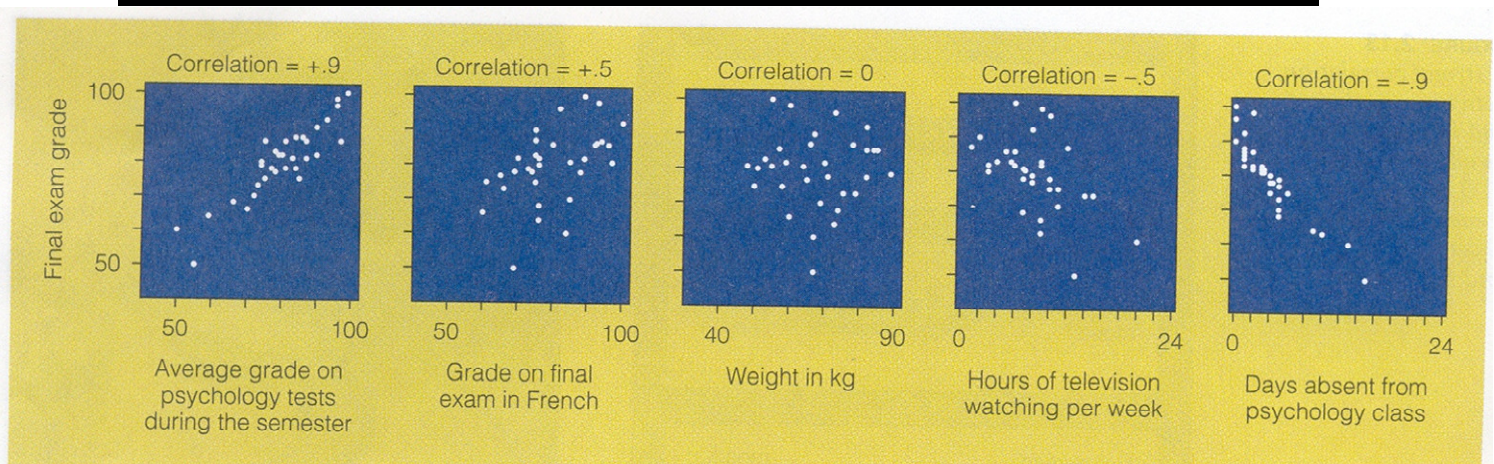


Image source: Kalat

<b>Positive (+)</b>		<b>zero</b>	<b>Negative (-)</b>	
Variables act in the same direction		No relation	Variables act in the opposite direction	
← stronger	weaker →		← weaker	stronger →

## Correlations

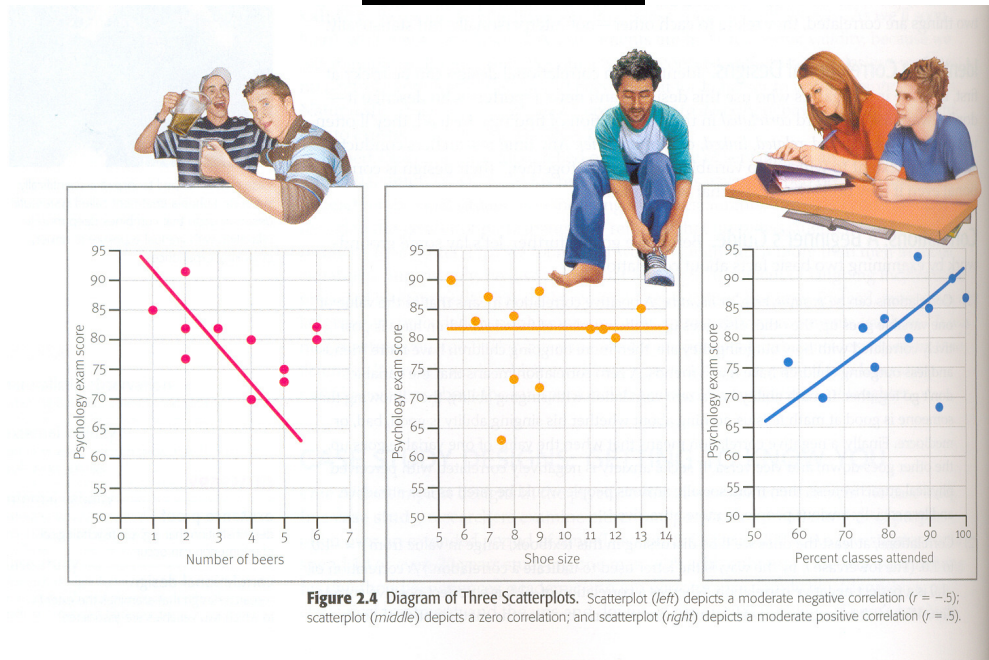


Image source: Psychology, Lilliefeld

### Examples of Correlations

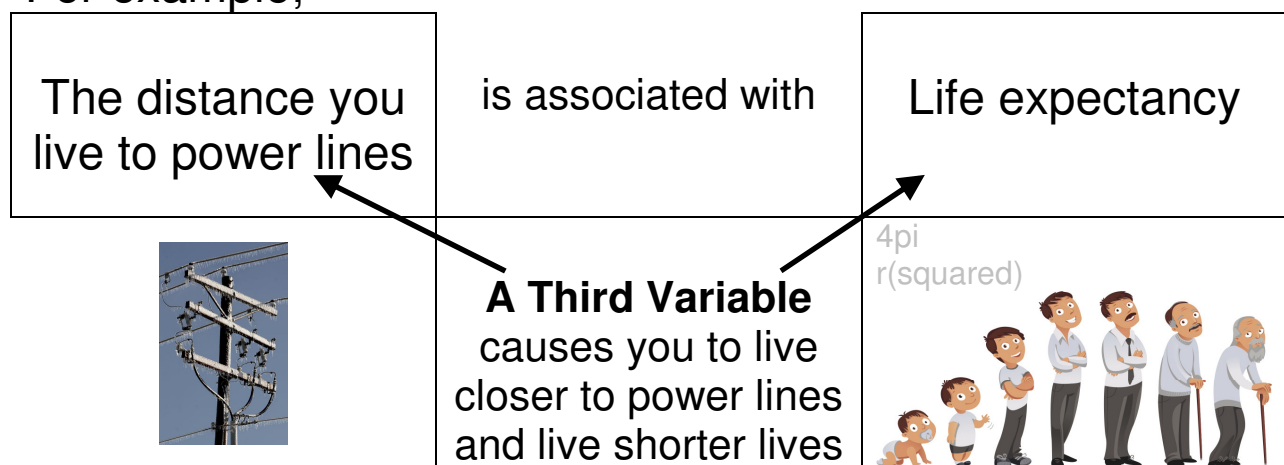
- Is there an association between number of beers consumed and the psychology exam score?
- Can we predict shoe size from the psychology exam score?
- Is there a relationship between attendance and psychology exam score?
- Do people exhibit more aggressive behavior when it is hot?
- Does the score on the “pre-quiz” predict your final grade in the course?
- Semen quality is associated to intelligence.
- Is there a relationship between the number of books in a family’s home and the child’s school grades?
- Are people who are angry less likely to think critically and more likely to be selfish?
- Does CEO pay predict performance?

## Limits of Correlations

Just because two variables are related, doesn't necessarily mean that there is a causal relation between them. There could be a third variable causing changes in both variables, and often referred to as the 3<sup>rd</sup> variable problem (see [page 34](#)).

Correlations by themselves can't determine casual relations. Correlations only tell you what variables are associated with each other

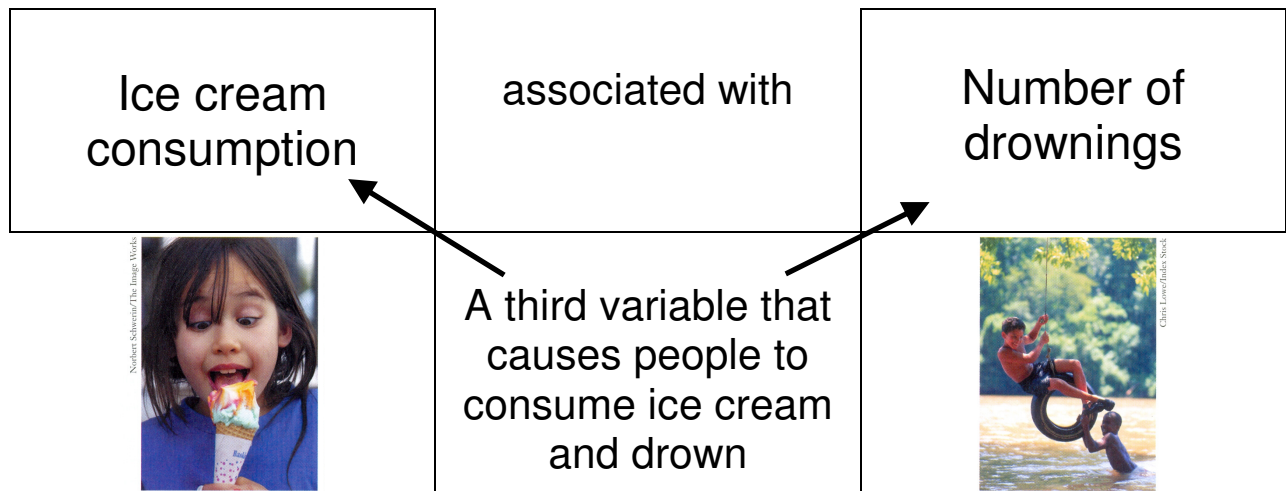
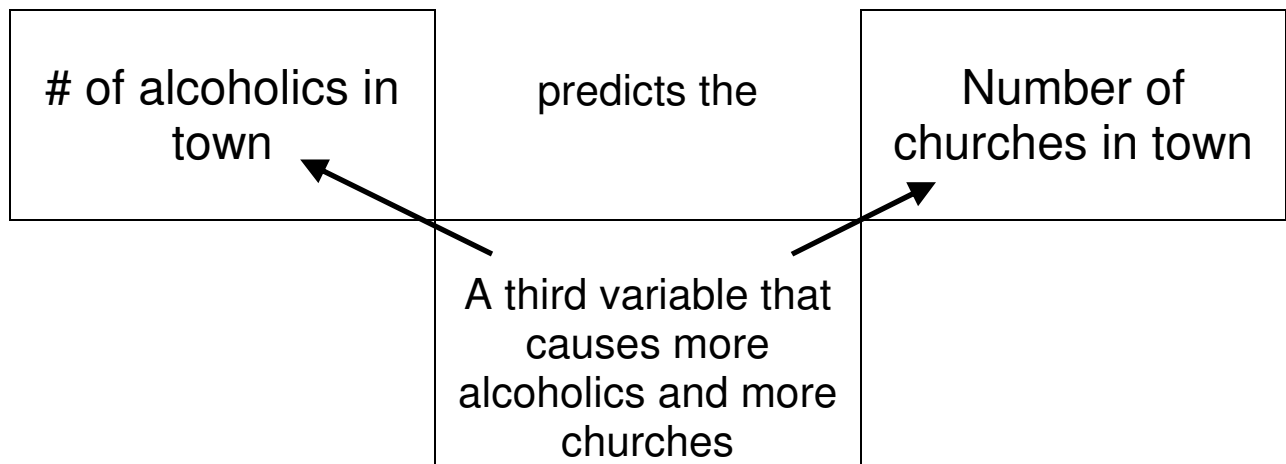
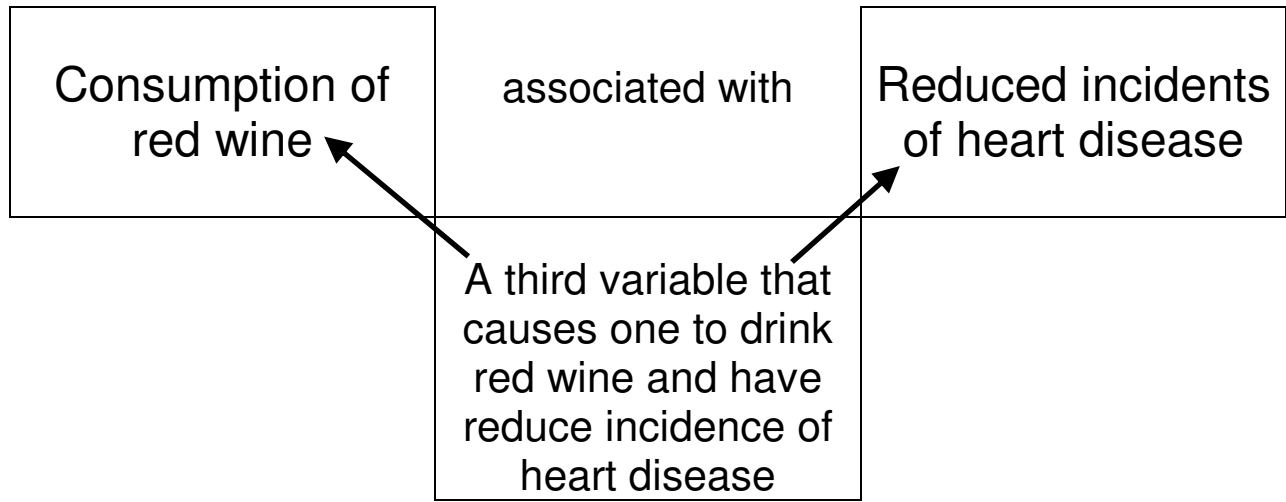
For example,



- The shorter the distance you live to power lines, the shorter your life expectancy is.
- The farther away you live to power lines, the longer your life expectancy is.

Based on correlations alone, it cannot be concluded that the power lines cause people to live shorter lives. It is generally believed to be another factor that causes people who live under power lines to live shorter lives.

## Correlations that are not causal (3<sup>rd</sup> variable problem)





## **Experimental Methods: Establishing Cause & Effect**



Image source: Classics of Western Literature, Bloom County 1986-1989, (1990), Berke Breathed

Opus believes that the reason why the woman rejects his “marriage proposal” was due to the hat he was wearing

However, there are other factors that could have led to his rejection such as

- Dropping her career
- Moving to Antarctica
- Raising ten kids
- Laving him with love and devotion between poker games throughout old age

Without systematically examining each factor, it is difficult which one(s) led to the rejection.

Experiments attempt to systematically examine each factor that may be responsible for a particular phenomenon (increases internal validity). However, doing so may create conditions that do not mimic the real world since multiple factors pull at us at once (decreases external validity).

## Experiments: Examining Cause and Effect

An experiment is a research method in which an investigator manipulates one or more factors (independent variable) to observe the effect on some behavior or mental process (the dependent variable) (page 35). There must be at least two groups (an experimental and control group to compare).

- Hypothesis: Watching televised violence increases aggressiveness
- Independent Variable: Watching violent television
- Dependent Variable: Aggressiveness

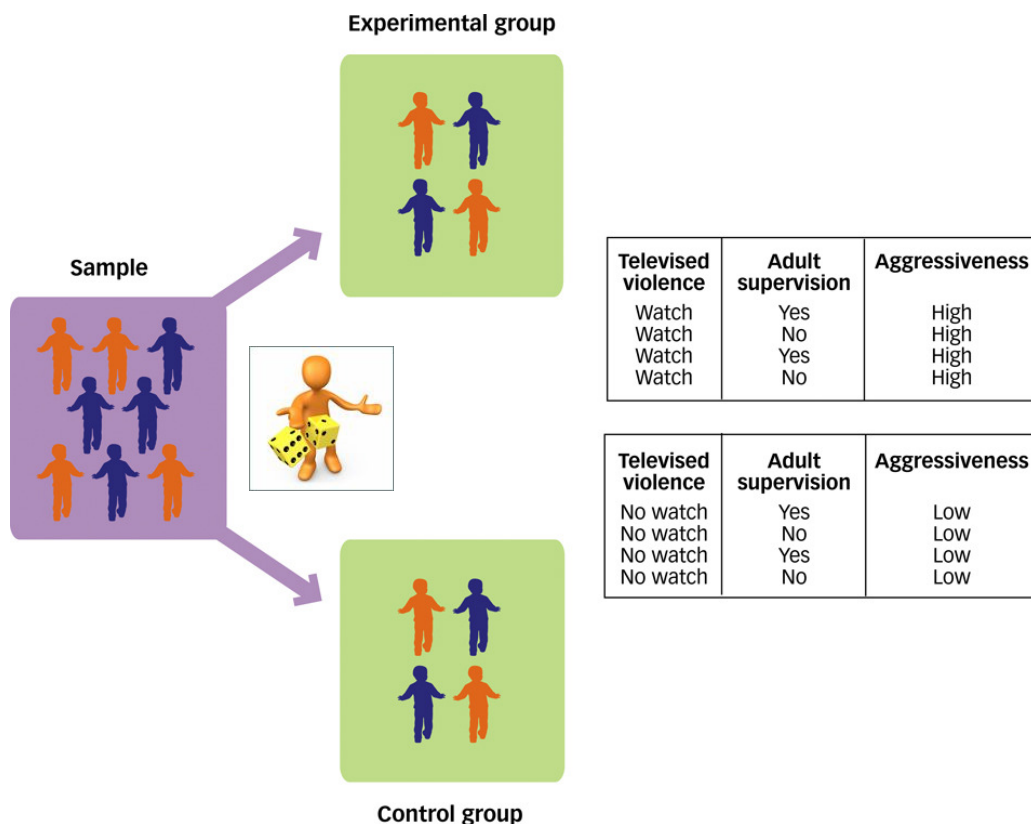


Image Source: Psychology (2009), Schacter, Gilbert and Wegner

## Experiments

- Hypothesis: Watching televised violence increases aggressiveness
- Independent Variable: Watching violent television
- Dependent Variable: Aggressiveness

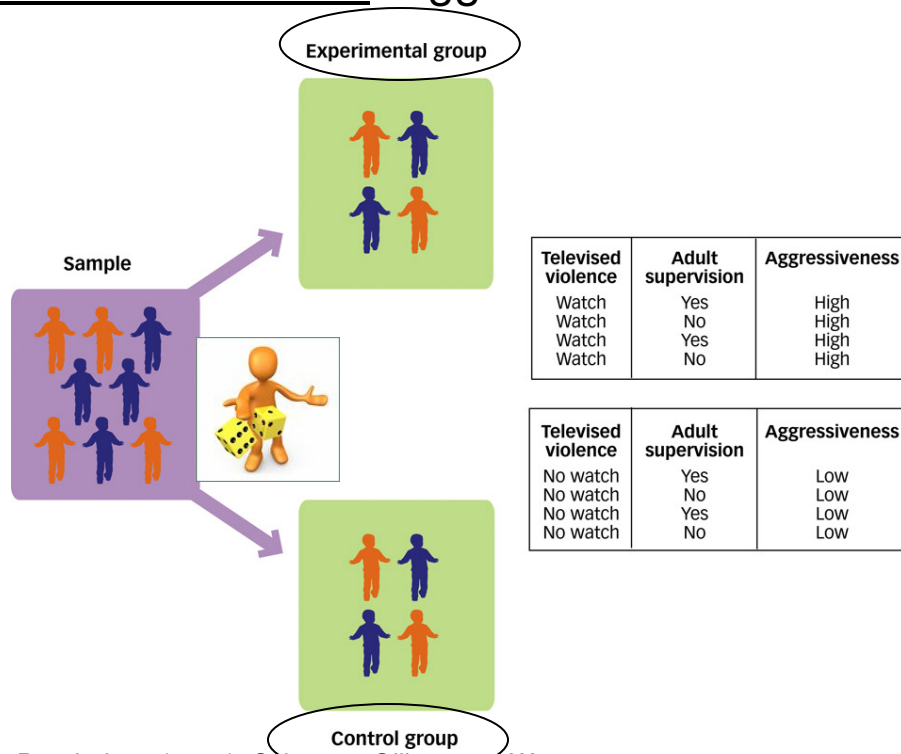


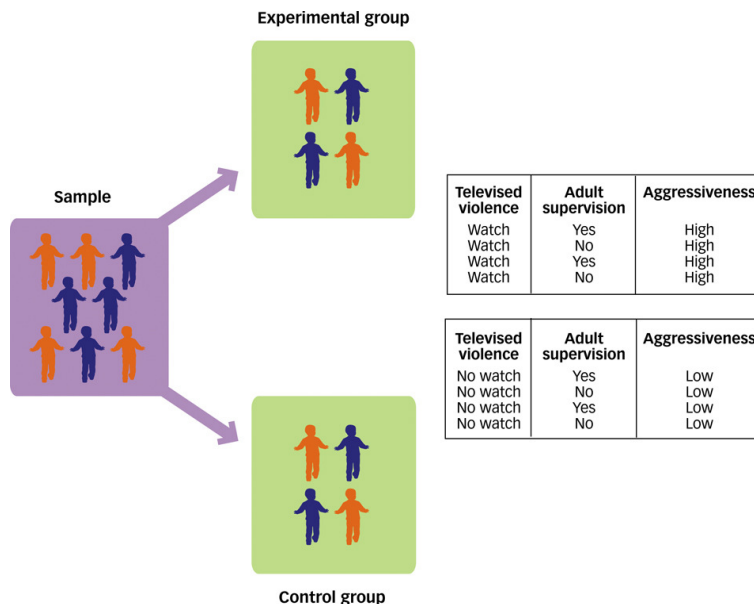
Image Source: Psychology (2009), Schacter, Gilbert and Wegner

- First we perform a manipulation of one variable (the independent variable). When we manipulate the variable we create at least two groups of participants: the experimental group and the control group. *We randomly assign participants to one of the groups to reduce selection bias (page 55).*
- Second, having manipulate one variable, we measure the other variable—the dependent variable.
- Third, we check to see if our manipulation of the independent variable produced changes in the dependent variable.



## Experimental Methods

A method of investigation used to demonstrate cause-and-effect relationships by purposely manipulating a factor (the independent variable) through to produce change in a second factor (the dependent variable). There must be at least two groups (an experimental and control group to compare).



Images Source: Psychology (2009), Schacter, Gilbert and Wegner

## Examples of Experiments:

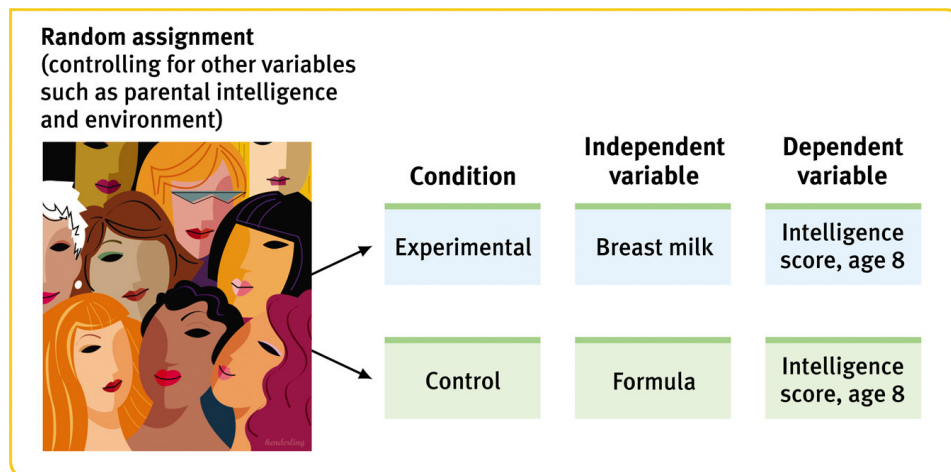


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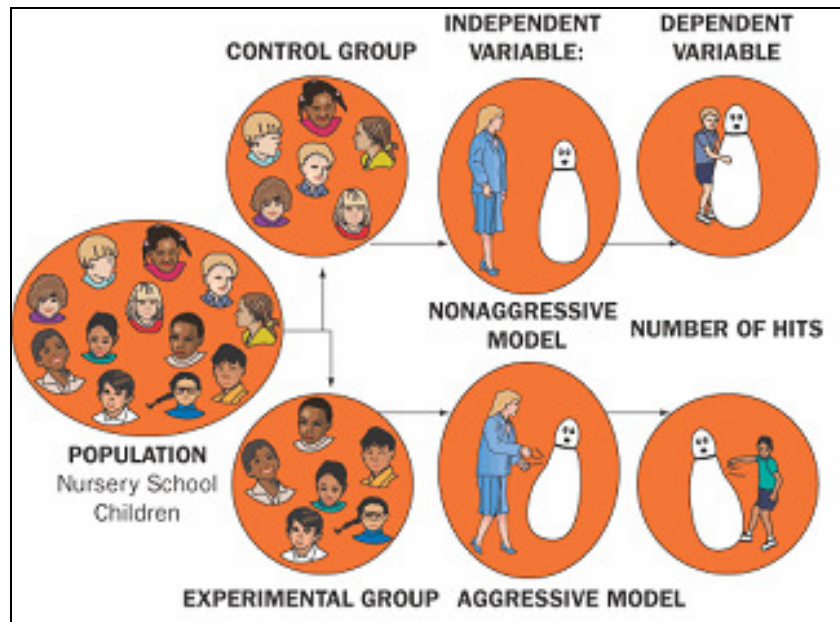


Image source: Psychology (), David and Pallidino

- Does watching violent television lead to more aggressive behavior? Two groups randomly assigned: one group watches 24 (violent TV) and the other watches Sesame Street (nonviolent TV); compare the probability of violent behavior by members of the two groups
  - IV = type of television program
  - DV = violent behavior
- Does oat bran reduce cholesterol levels?
  - IV = presence or amount of oat bran
  - DV = cholesterol levels
- Does taking vitamin C reduce the number of colds?
  - IV =
  - DV =
- Which of two new anti-depressants is more effective in treating major depression?

## **Is this an Experiment or Correlation?**

A study was done with some safety equipment. Would the safety equipment interfere with how enjoyable participants engaged in the activity?

Does using a condom interfere with people experiencing pleasure during sex? A study was done that found that that whether or not you use a condom, there is no reported difference in pleasure

- Is it more likely that this study was an experiment or a correlation?

Before answering the question and just responding, think about the following:

- (1) What is an experiment?
- (2) What is a correlation?
- (3) What is the difference between an experiment and correlation?

How would you conduct an experiment to see if gender effects how many cats are adopted?