Non-experimental types of research.

Correlational Research

- Detects how well one variable predicts, not causes another variable.
- Does NOT say that one variable causes another.

- There is a positive correlation between income and years of education.
- Does that mean that having a higher income means you will have more education, or do people with more education have higher incomes?

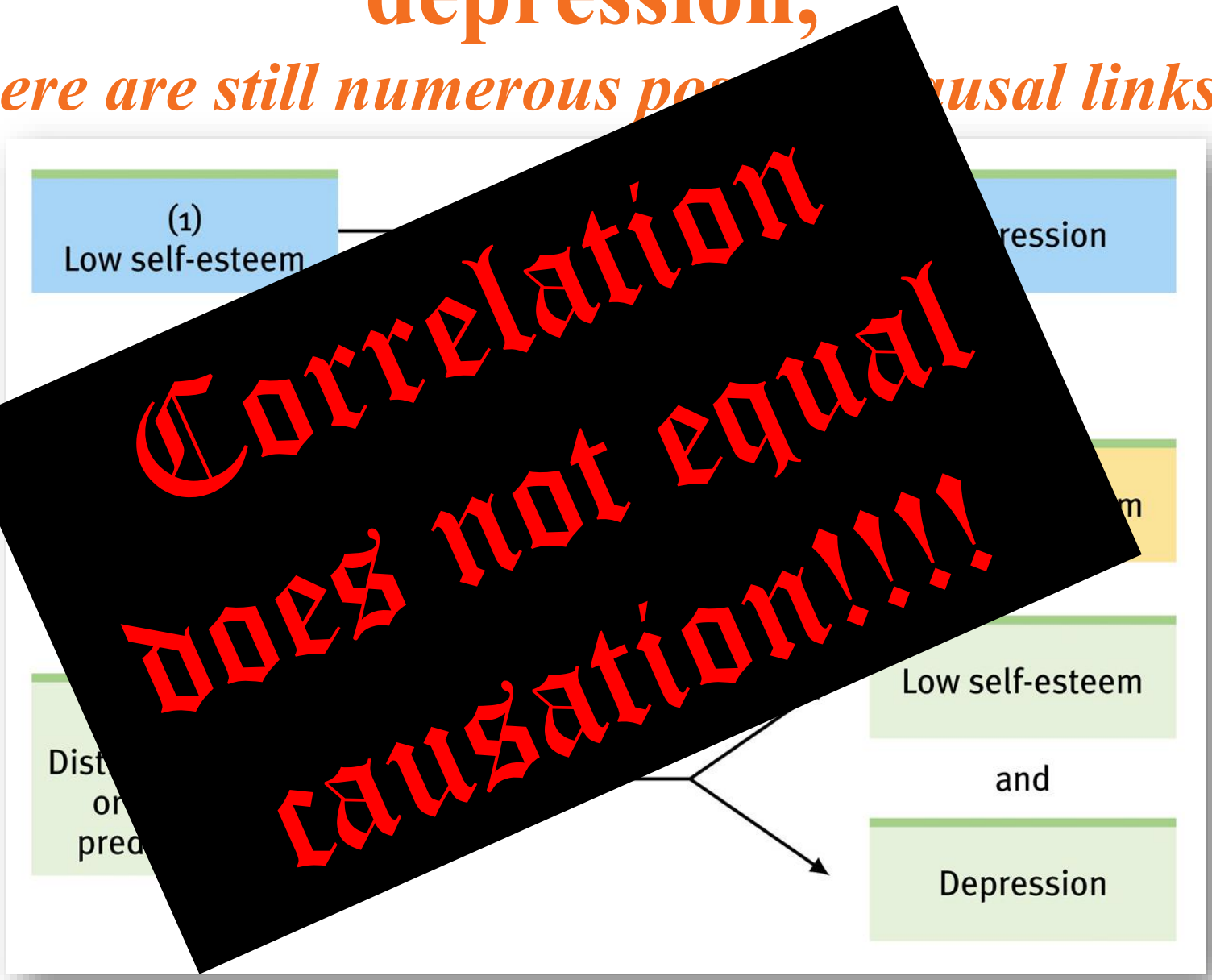
Correlation

Definition: an observation that two traits are *related* to each other

- Studies show that there is a strong correlation between how many books are present in a child's home and college completion rate.
- *Do the books cause a person to complete college?*

If self-esteem correlates with depression,

there are still numerous po usal links:



Types of Correlation

Positive Correlation

- The variables go in the SAME direction.

Negative Correlation

- The variables go in opposite directions.

Studying and grades hopefully has a positive correlation. Heroin use and grades probably has a negative correlation.

If we find a correlation, what conclusions ... draw ...

Let's ...

the ...

cor...

vari...

- ice ...
- rates ...

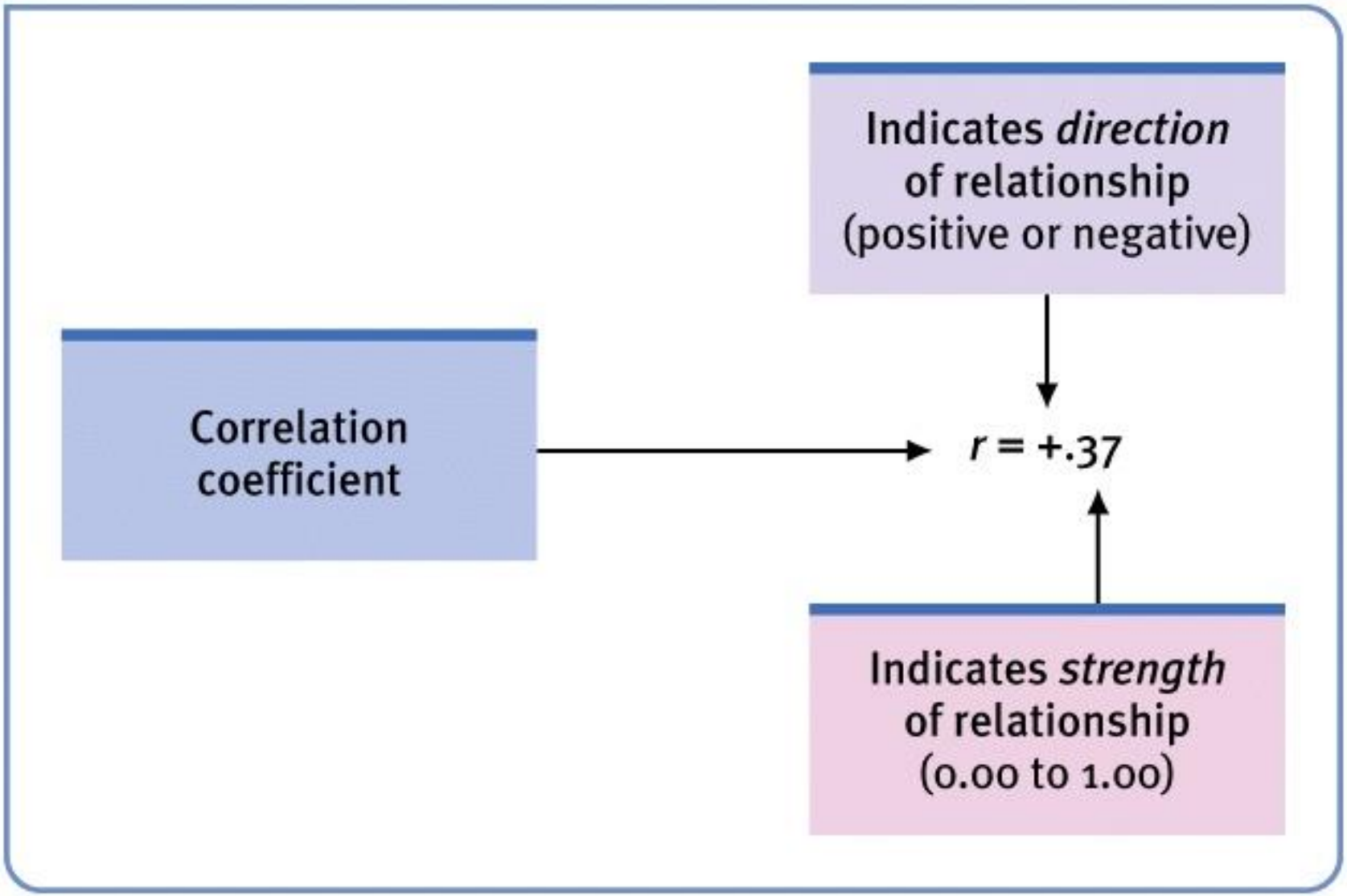
How do ... this?

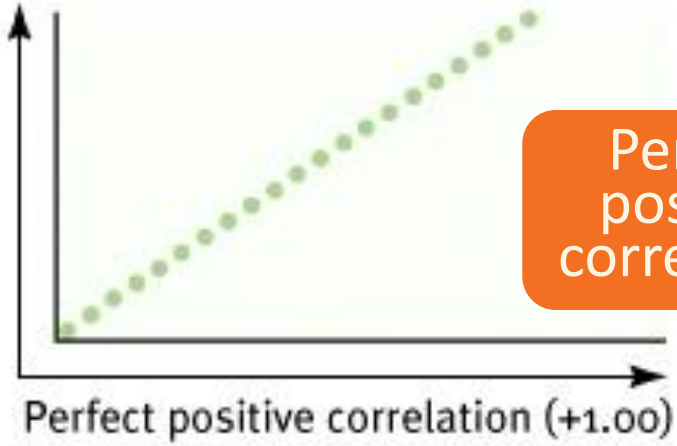
Correlation does not equal causation!!!!

The strength of relationships are measured using a ***correlation coefficient***.

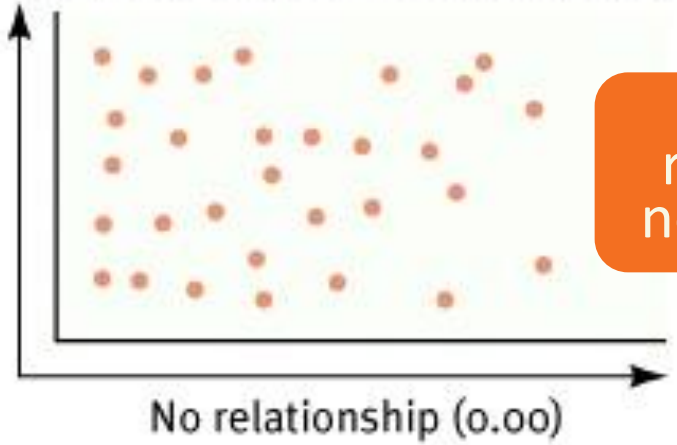
- The correlation coefficient is a number representing the ***strength*** and ***direction*** of correlation.
- Range is from -1 to +1
- The relationship gets weaker the closer you get to zero.

What is a Correlation Coefficient

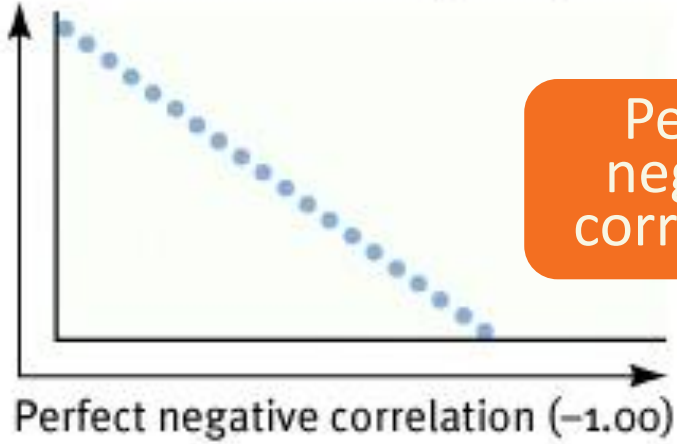




Perfect positive correlation



No relationship, no correlation



Perfect negative correlation

*The **strength** of the relationship* refers to how close the dots are to a straight line, which means one variable changes exactly as the other one does.

Interactive Scatterplot

Which correlation coefficient has the strongest relationship? The weakest?

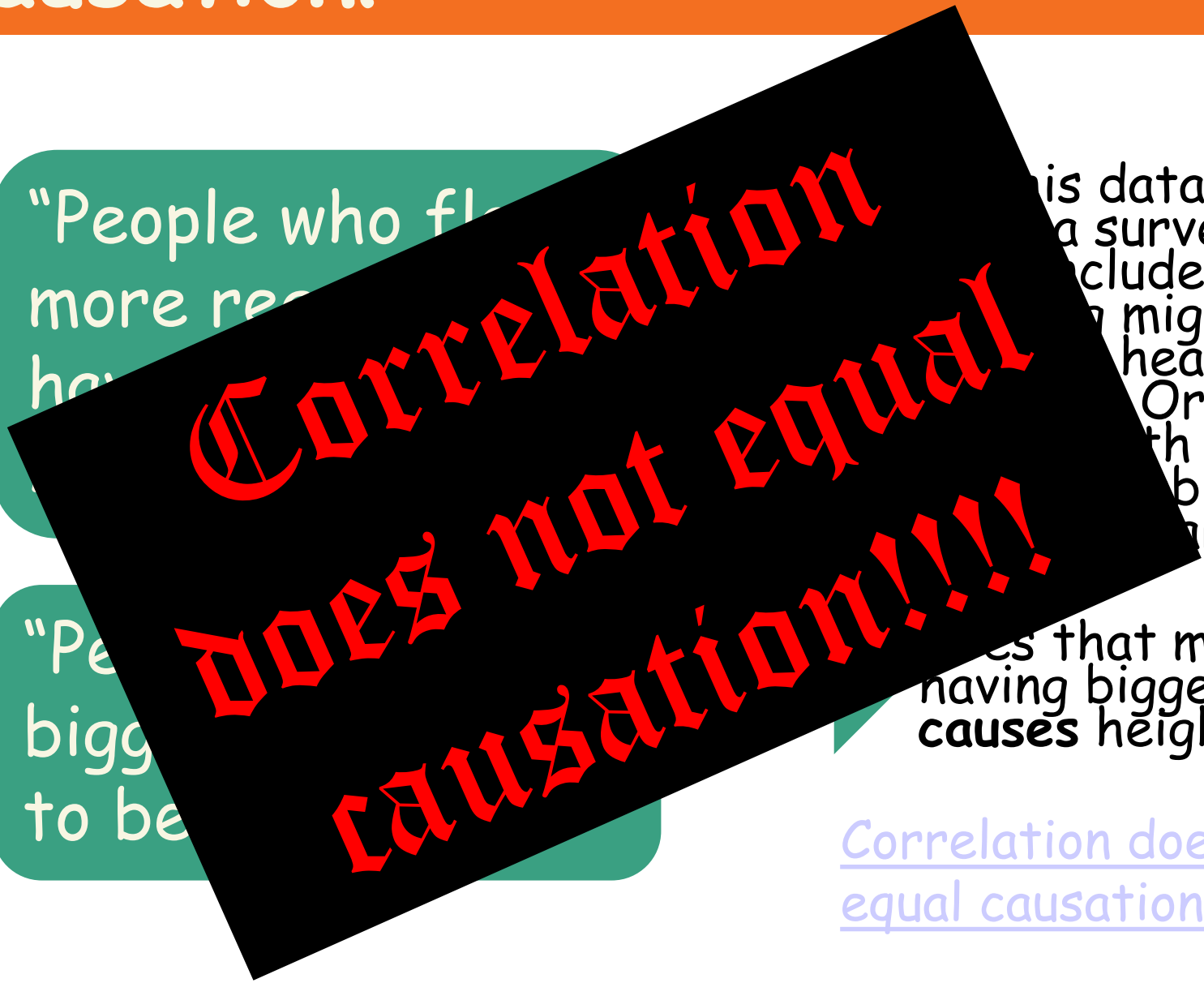
- A. .79
- B. -.88
- C. .09
- D. 3.6
- E. -.05

B has the strongest.
E has the weakest
D. is invalid

Which is a stronger correlation?

- -.13 or +.38
- -.72 or +.59
- -.91 or +.04

Correlation does not equal Causation!



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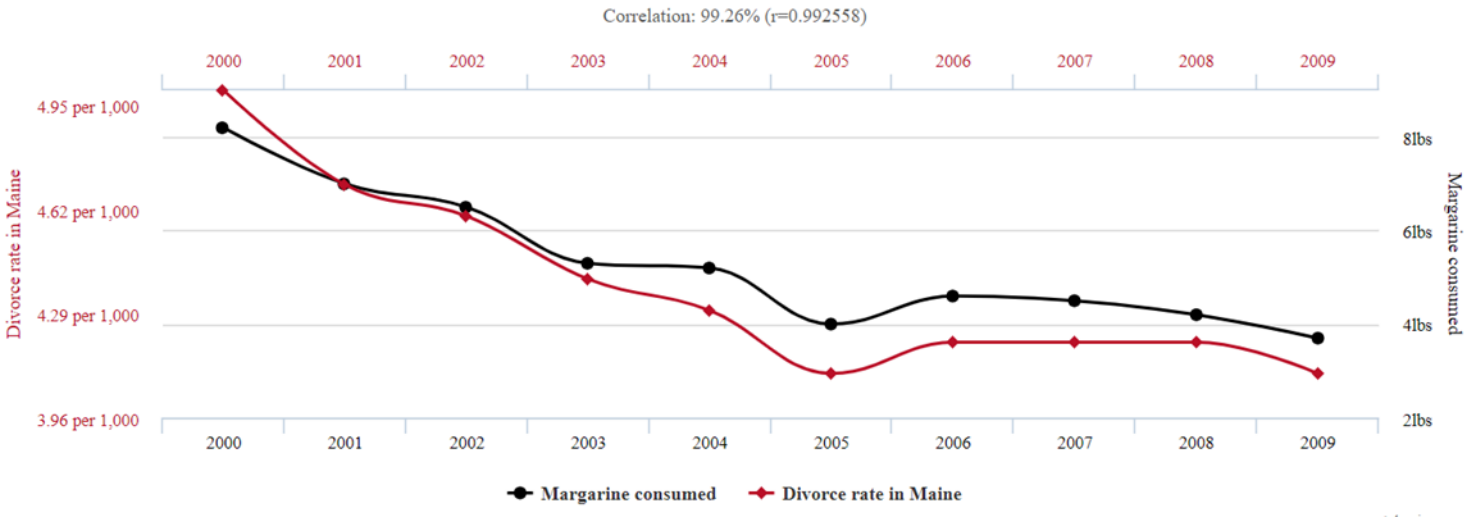
Correlation does not equal causation!

Divorce rate in Maine

correlates with

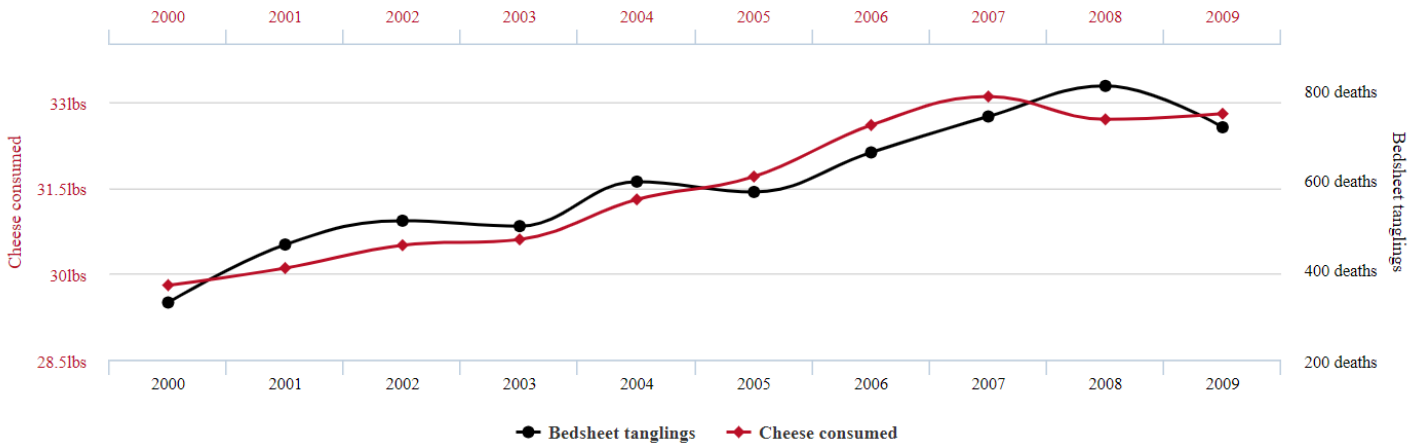
Per capita consumption of margarine



Per capita cheese consumption

correlates with

Number of people who died by becoming tangled in their bedsheets



Illusory Correlation Instructions

- You will see a series of statements, each describing a person performing some type of behavior.
- Each person belongs to either Group A or Group B.
- After all statements have been presented, you will respond with your impressions.

Done!

Construct the table below on a scrap piece of paper.

Group Ratings

Attribute:	**Group A**	**Group B**
Popular		
Lazy		
Unhappy		
Intelligent		
Honest		
Irresponsible		
Helpful		
Unpopular		

Group Ratings

- Your next task is to rate each of the groups.
- Use the scale below:
  - 1: Strongly Disagree
  - 7: Strongly Agree
- You should use intermediate values as well as these two extremes.
- How would you characterize group A? Group B?

Debriefing

- Group A (n = 26 members)
  - 18 positive statements
  - 8 negative statements
- 9:4 ratio of positive to negative statements

- Group B (n = 13 members)
  - 9 positive statements
  - 4 negative statements
- 9:4 ratio of positive to negative statements

Debriefing

- The ratio of positive and negative events was exactly the same for Group A and Group B!
- Did we rate the Groups the way we should have?
- Are our ratings of the Groups exactly equal?

Illusory Correlation

- This demonstration illustrates an Illusory Correlation – the perception of a relationship where none exists, or perception of a stronger relationship than actually exists. Another way to think of it – a false impression that two variables correlate.

Illusory Correlation

- The joint occurrence of two distinctive events (minority member – Group B & distinctive event - negative behavior) probably attracted more attention and caused faulty impressions.

Illusory Correlation

Examples:

- You believe that people in urban environments tend to be rude. Therefore, when you meet someone who is rude you assume that the person lives in a city.
- A woman believes that pit bulls are inherently dangerous. When she hears of a dog attack in the news, she assumes it is a pit bull that attacked.
- A student does well on a test when he uses his blue pencil. For all future tests he uses only his blue pencil.
- You catch a lot of fish off of one dock, you feel that there are more fish there than anywhere else on the lake.

Illusory Correlation

- How could Illusory correlation be one reason individuals become prejudiced?
- Research has shown that White Americans overestimate the arrest rate of African Americans (Hamilton & Sherman, 1996).
  - African Americans = minority
  - Arrest Rate = distinctive event