Correlation vs Causation
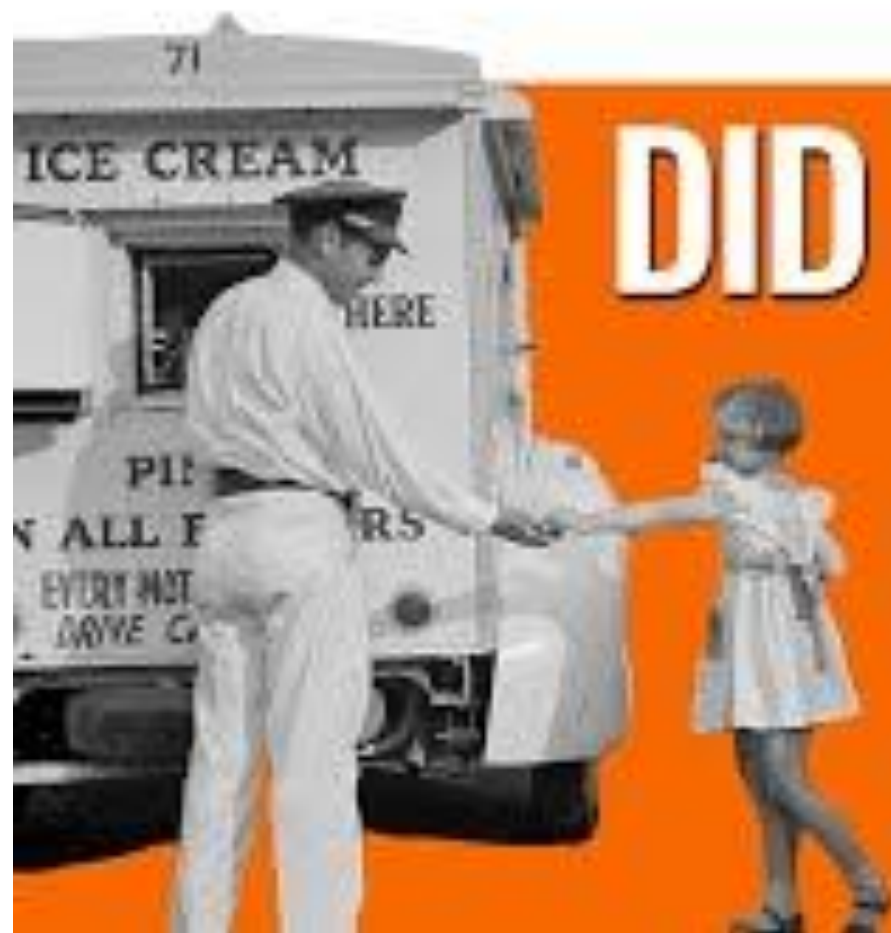
Correlation, yes. But causation…?

Variables can be linked without one causing the other.

CORRELATION: Variable A and Variable B are related.

A 🔗 B

CAUSATION: Change in Variable A **causes** change in Variable B

A ➡ B

Two Types of Data

Quantitative

- Numerical
- Can be put in order (least to greatest)
- Can be continuous (unlimited number of values between minimum and maximum)

Categorical

- Categories or group labels
- Does not have a certain order
- Can be represented by numbers in certain situations

Quantitative or Categorical?

- Hair color
- Temperature
- Gender
- ZIP code

Quantitative or Categorical?

- Hair color: Categorical
- Temperature: Quantitative
- Gender: Categorical
- ZIP code: Categorical

Contingency Table

Explanatory Variable

Outcome variable

	Southside	Northside	
White Sox	Individuals who are Southside and White Sox fans	Individuals who are Northside and White Sox fans	Total White Sox fans
Cubs	Individuals who are Southside and Cubs fans	Individuals who are Northside and Cubs fans	Total Cubs fans
	Total Southside	Total Northside	Total individuals (Grand total)

Results of Student Survey

Link to Forms Results:

Responses Table