

## AP Stats – Chap 6

### Scatterplots, Association, Correlation

We're looking for **associations** (connections, relationships) between QUANTITATIVE variables.

Association is **NOT** cause-and-effect!

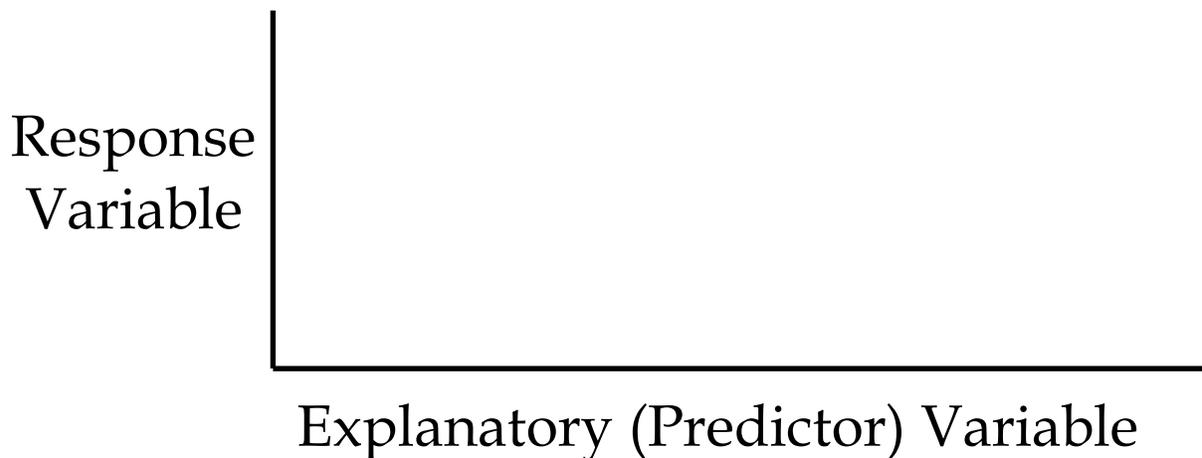
**Association** is described in terms of

- direction (positive, negative, none)
- form (straight line, swarm/cloud, curved, none)
- strength (how much, how little)
- unusual features (outliers, subgroups)

If the form is linear, we find **correlation**, a unitless measure of the strength of the linear association between two quantitative variables.

### 3 correlation conditions:

- must be quantitative variables
- straight “enough”
- no outliers



### What Can Go Wrong?

- Don't say **correlation** when you mean **association**.
- Don't correlate categorical variables.
- Be sure the correlation is linear.
- Beware of outliers.
- Don't confuse correlation with causation.
- Watch out for lurking variables.