

# Presenting Results

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PSYC 203

# Where Results Could Appear

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- Text
- Table
- Figure/Chart
- Choice should be driven by nature, amount, and complexity of information
- **Goal** is to ensure the reader/viewer/listener understands your points.

# Text

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- Can be useful when there is only one or two numbers to present
  - “73% of undergraduate students live on campus compared to 18% of graduate students.”
- Once we get beyond two numbers, text-based presentations of results is less useful and may be more difficult for a reader to follow.
  - “73% of undergraduate students live on campus, 19% live off campus in their own apartments, and 8% live with their parents.”

# Tables

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- Effective when:
  - you wish to show how a single category of information varies when measured at different points (in time or space).
    - For example, a table would be an appropriate way of showing how GPA varies between different majors.
  - the dataset contains relatively few numbers. Too many numbers is overwhelming, particularly in presentations when the audience will have a relatively short time to take in the information.
- precise values are critical.
  - For example, a table would be appropriate when it's important to present a result as 64.35 and not 64.26. Figures often (though not always) result in a lack of precision.

# Design Patterns

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- Patterns should appear in the columns of your tables. Most people find it easier to identify patterns in numerical data by reading down a column rather than across a row.
- If you have multiple columns with meaningful information, use the most important column to structure the table. If the columns are equally important it is often better to include two or more simple tables rather than using a single more complex one.
- Balance specificity with simplicity based on your audience. In some cases (e.g., APA style), the level of specificity is determined for you.
- All tables should have a title that is clear and stand on its own. Notes may also be helpful for identifying sources, sample sizes, and other critical information.
- Where more than one table is presented, each should have a unique number. In longer pieces of work, such as dissertations, a list of tables with their page number is usually provided in addition to the contents page.
- The formatting of the table should help the reader interpret the data and so the use of lines and/or bold text to separate headings from the body of data, or highlighting/shading specific rows or may be effective.

# Table Design

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Region	% adults taking a vacation
Northeast	45
Pacific Northwest	67
Southwest	32
Midwest	46
Southwest	52
North Central	24
Hawaii	21

# What about this table?

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Table 1. *Percentage of U.S. Adults who reported taking a vacation in past year*

Region	% adults taking a vacation
Pacific Northwest	67
Southeast	52
Midwest	46
Northeast	45
Southwest	32
North Central	24
Hawaii	21

Source. *Bureau of Made up Statistics*

# Figures/Charts

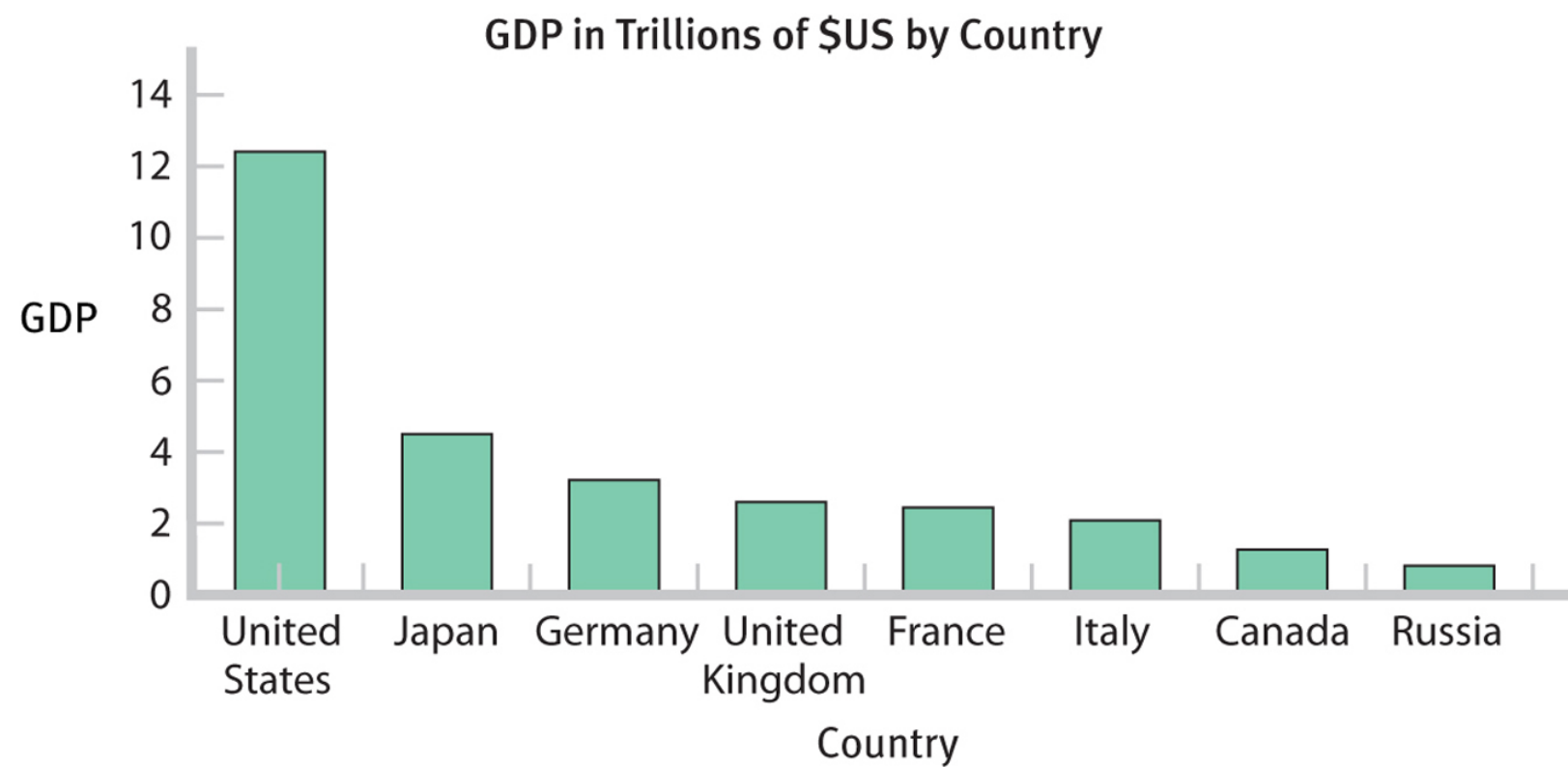
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- Bar charts
  - Used to display and compare the number, frequency or other measure (e.g., mean) for different discrete categories or groups.
  - Orientation can be either vertical or horizontal depending upon the number of categories and length or complexity of the category labels.
  - Bar lengths are proportional to the size of the category they represent.
  - Great flexibility as a method for conveying information.



# Bar Charts

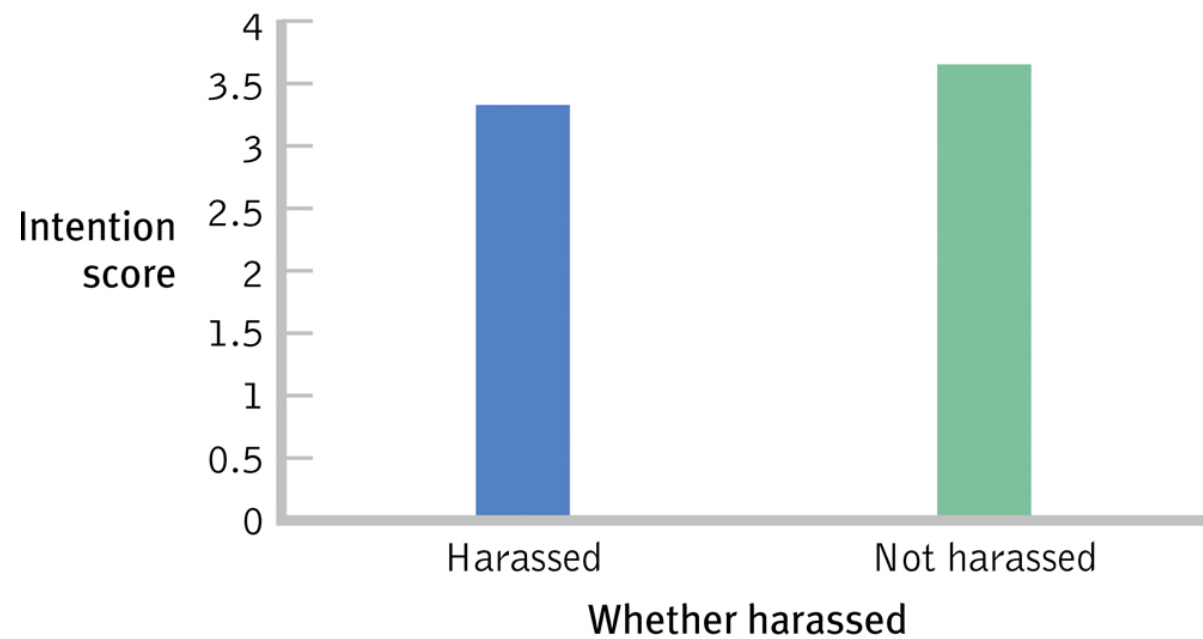
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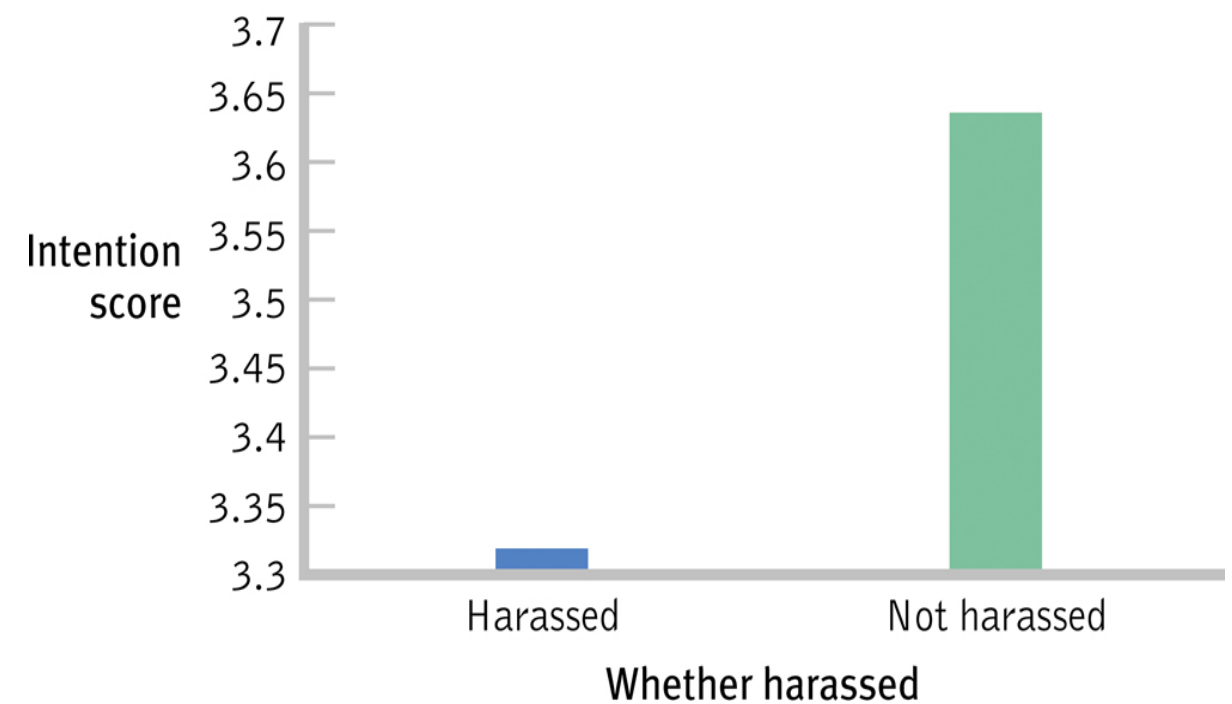
# Bar Charts

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Effect of Sexual Harassment Status on Female Navy Officers' Intentions to Stay in the Navy



Effect of Sexual Harassment Status on Female Navy Officers' Intentions to Stay in the Navy



# Scatterplot

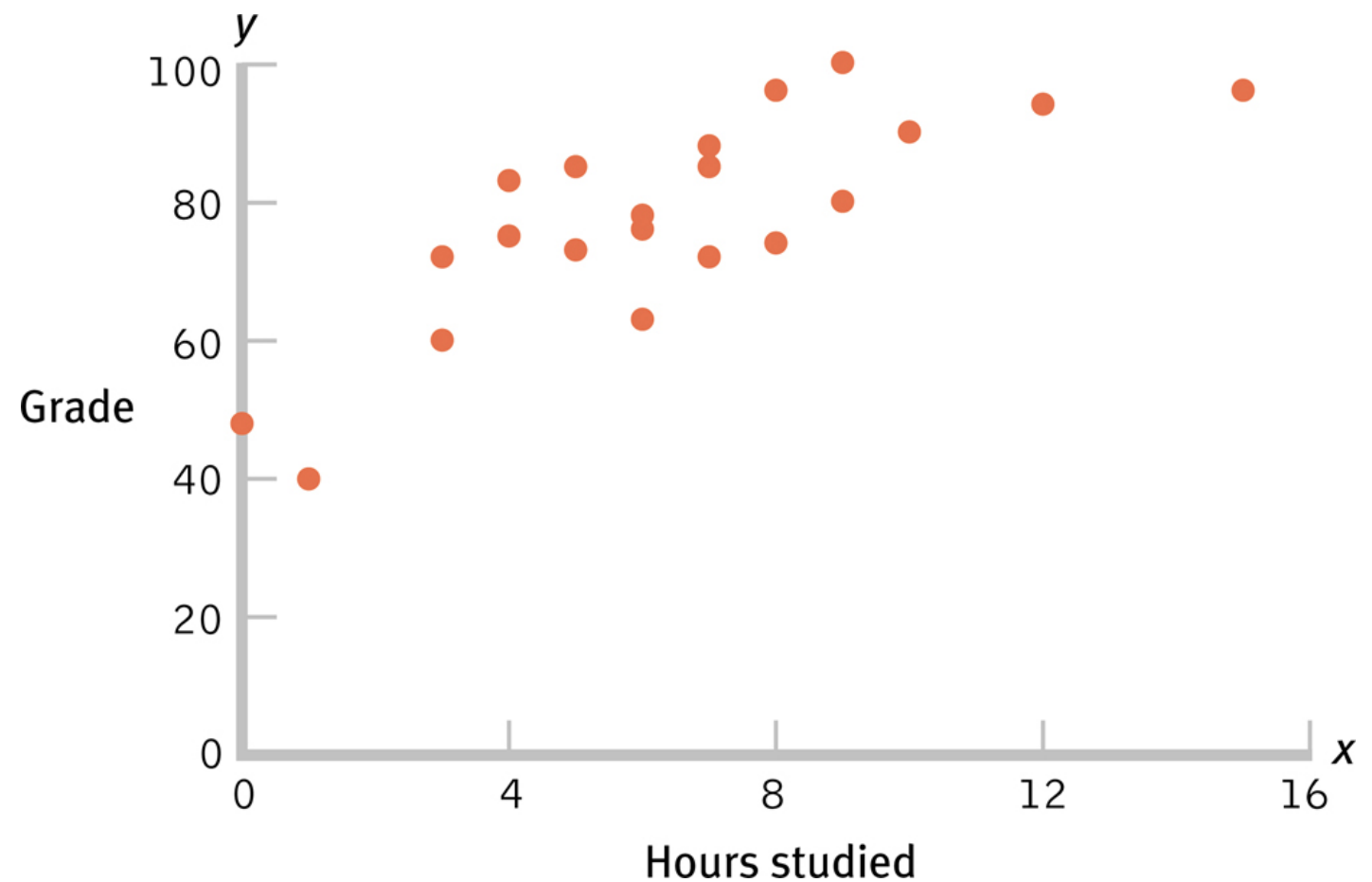
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- These are incredibly powerful charts that facilitate quick and clear understanding of relations that can be difficult or impossible to see in a table
- Two-dimensional visualization that represents scores on two variables.
- Each variable is plotted along an axis
- Let's look at simple example

# Scatterplot

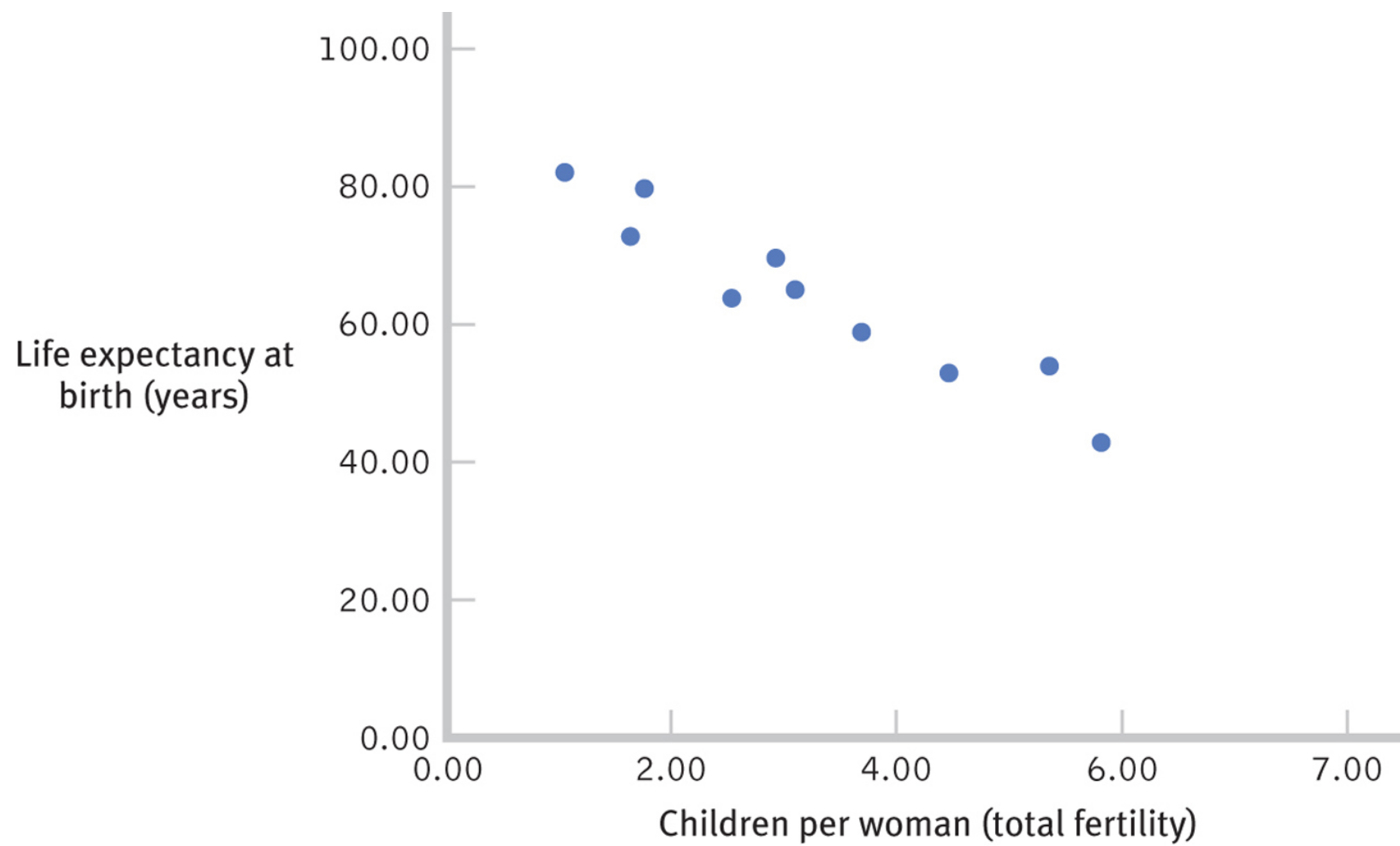
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- Depict the relation between two
- Relation is often linear



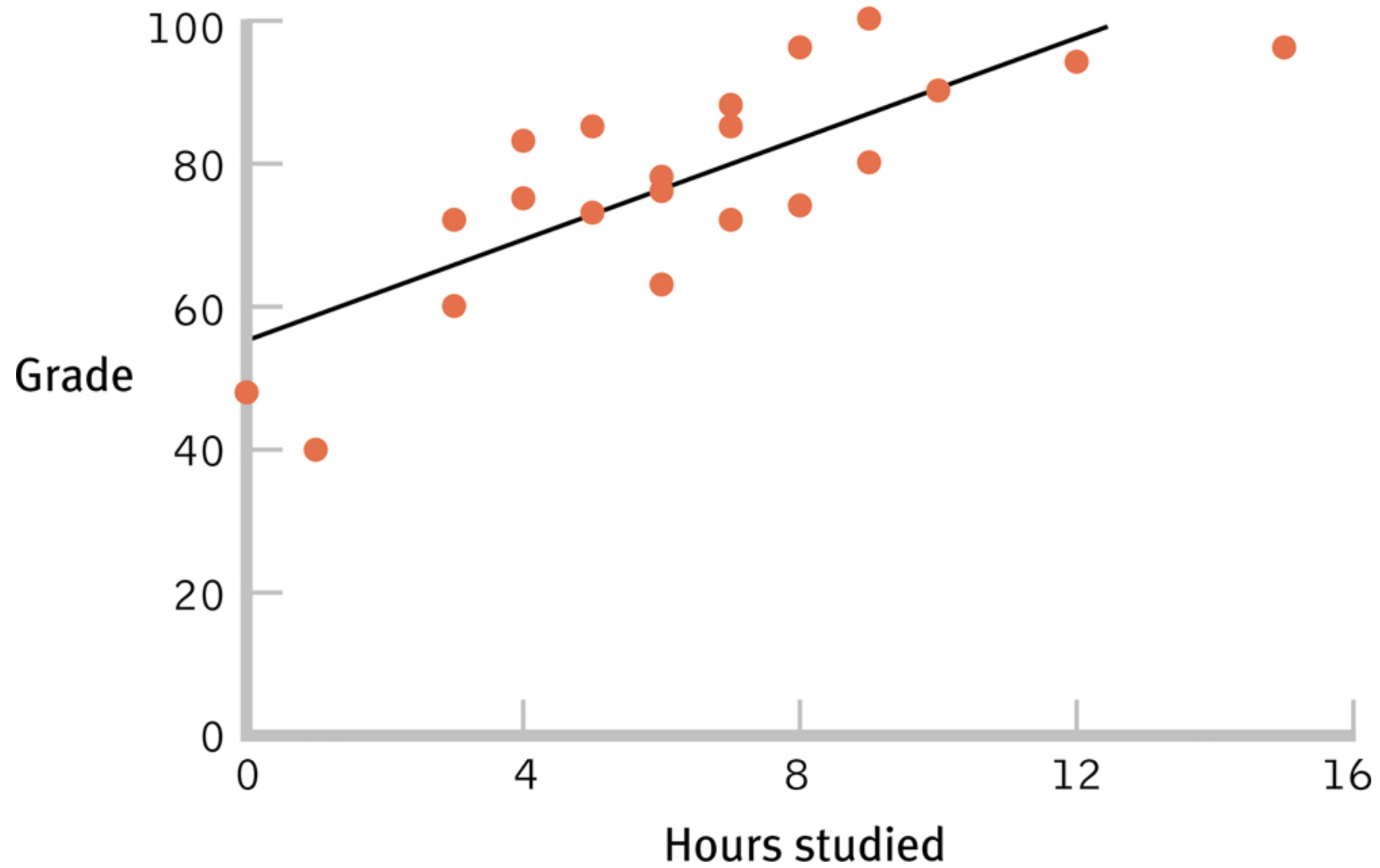
# Scatterplots

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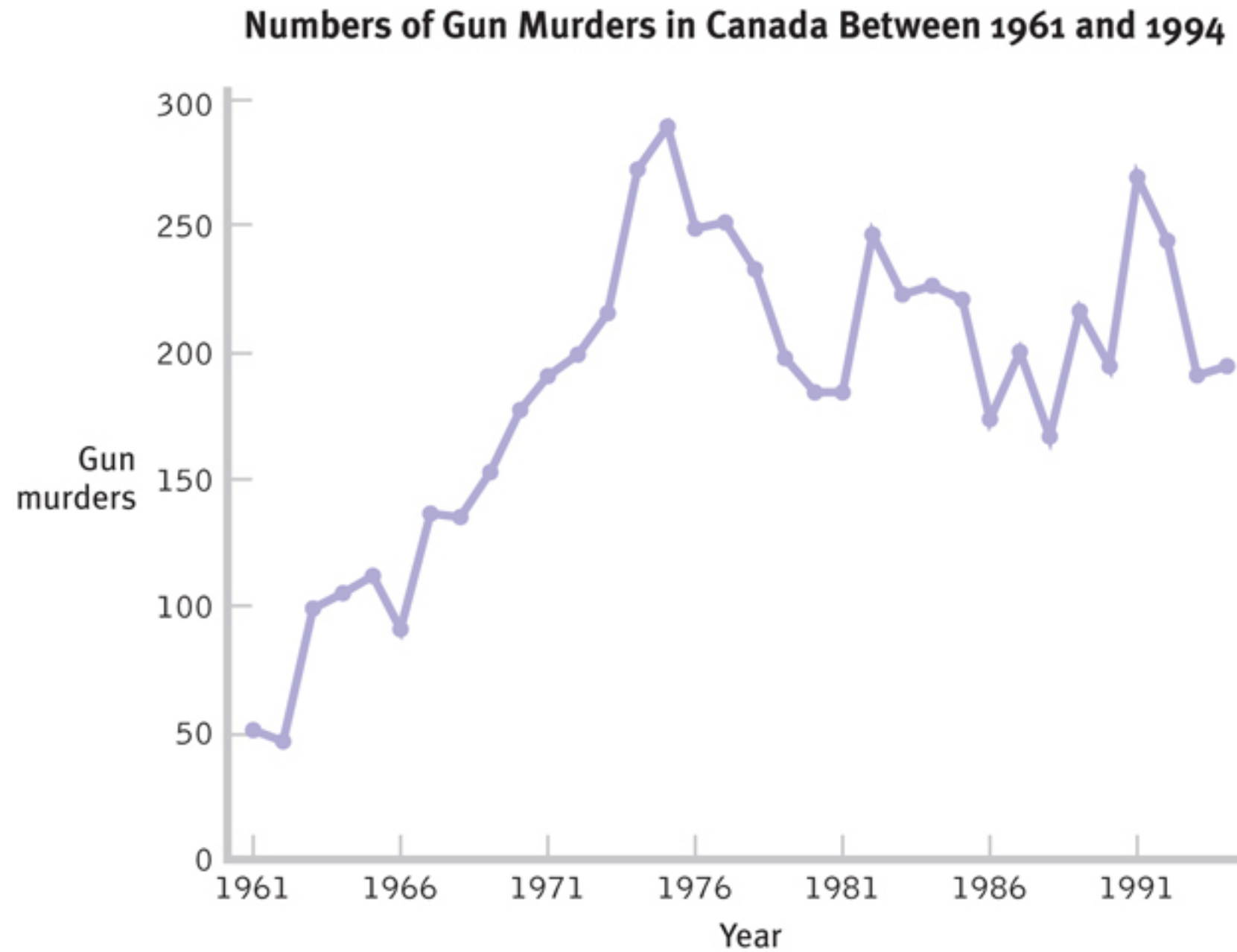
# Scatterplot: Line of Best Fit

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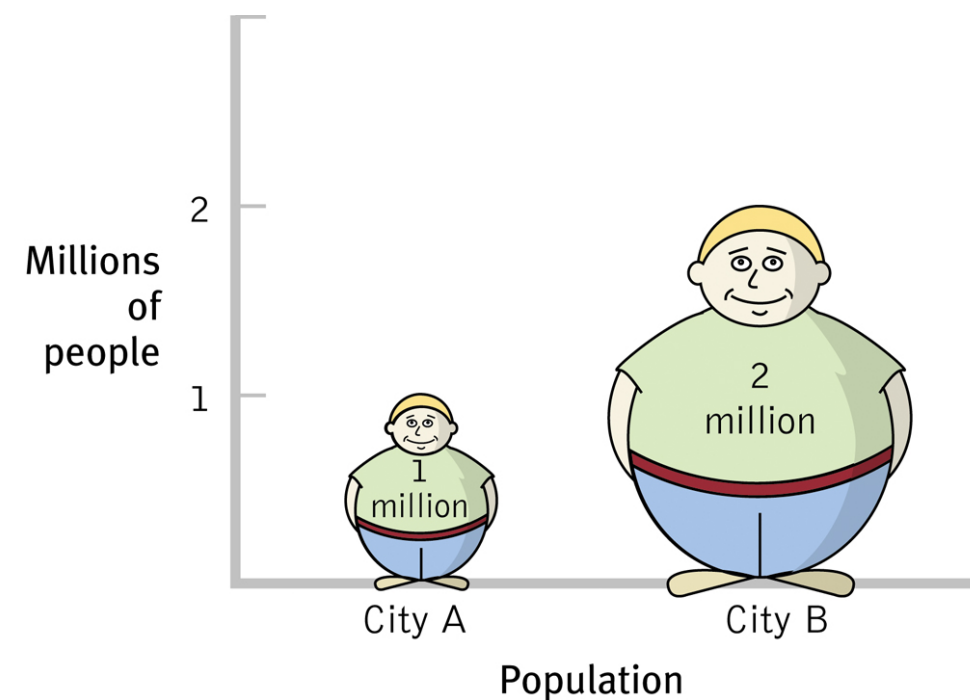
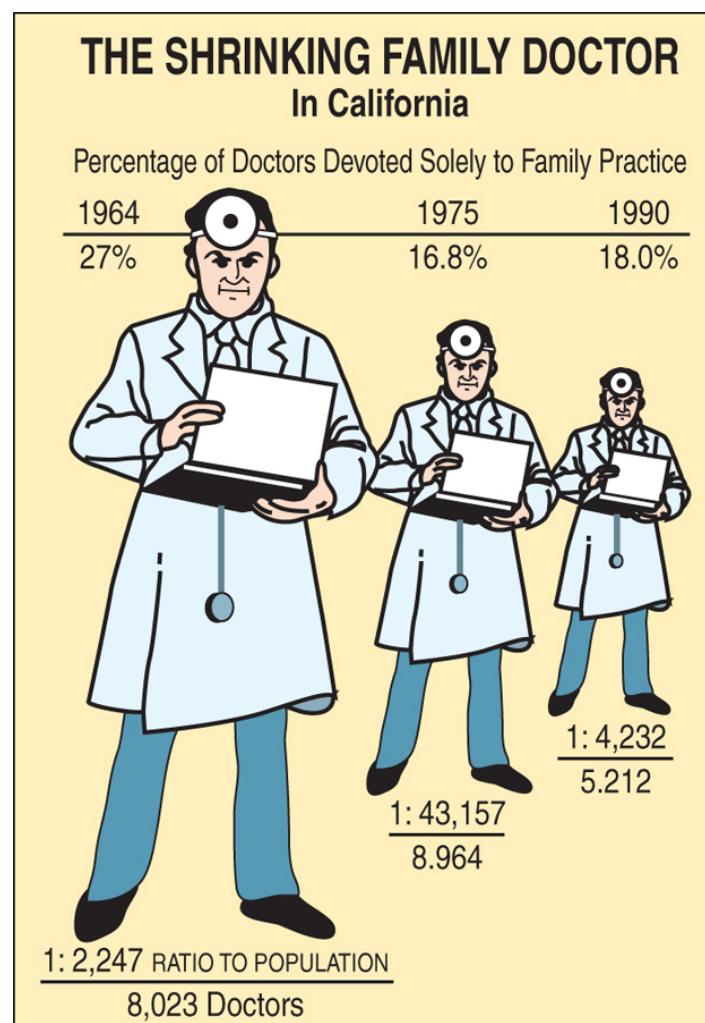
# Time Series Plot

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# Pictorial Graph

- Visual depiction of data used for an independent variable with few levels and a scale independent variable





# Pie Charts

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- Pie charts work best when the categories show some variation in size. When there are several similar-sized categories, a table might be used to present the information more effectively.
- It is usual for the different sectors of the pie chart to be arranged clockwise in order of magnitude.
- It is helpful to color or shade the different slices so that they grade from dark to light tones as you move from the first to the last slice.
- Two or more pie charts can be used to compare sets of data where the categories are the same or similar but there is a change in another variable, such as time or age. In such cases it is helpful to maintain the same ordering and coloring of slices in the second pie chart as the first in order to facilitate comparison. If the two charts represent different sized totals show this by making the areas of the pie chart proportional to the totals they each represent.

# Pie Charts

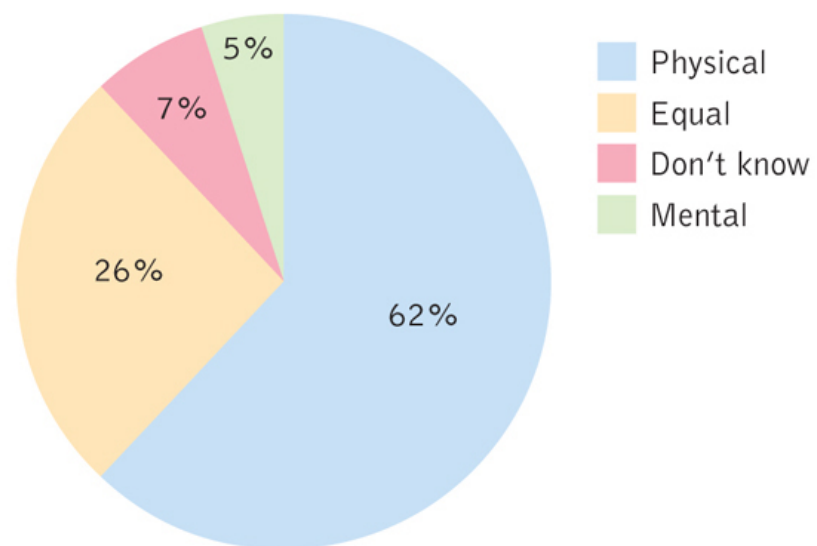
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- Avoid design elements that detract from the message you are trying to convey such as 3D effects and exploding slices. These can produce optical effects that make it hard to compare different categories.
- There are however occasions when the use of an exploding pie chart can enhance the presentation of the data. (e.g., you wish to highlight information in one category/wedge).

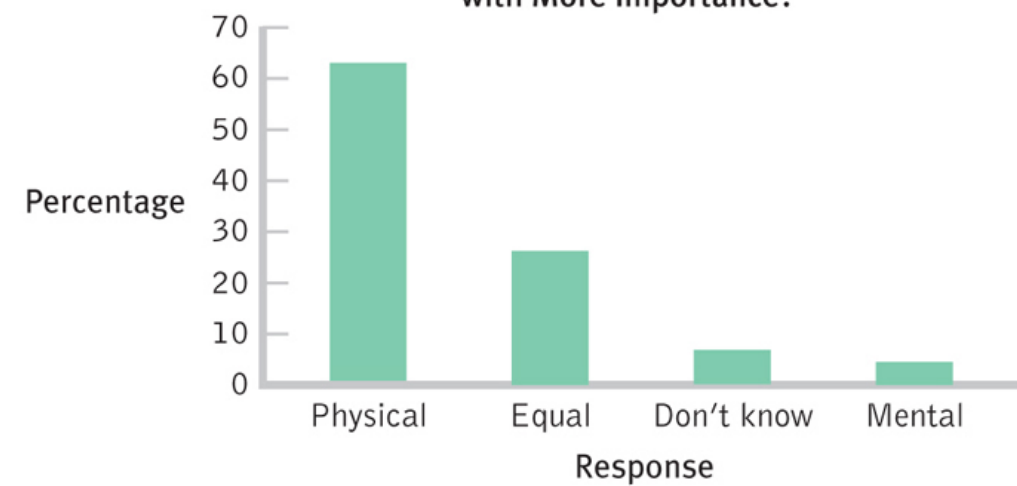
# Pie Chart

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Is Physical Health or Mental Health Treated with More Importance?



Is Physical Health or Mental Health Treated with More Importance?



# How do you select the best graph?

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- One interval variable: histogram or frequency polygon
- One interval independent and dependent variable: scatterplot or line graph
- One nominal variable and one interval dependent variable: bar graph
- Two+ nominal independent and one interval dependent variable: bar graph

# Guidelines

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- Labels
- Titles
- Measurement Units
- Values of axes
- Any unnecessary information? (chartjunk)

# Techniques for misleading graphs

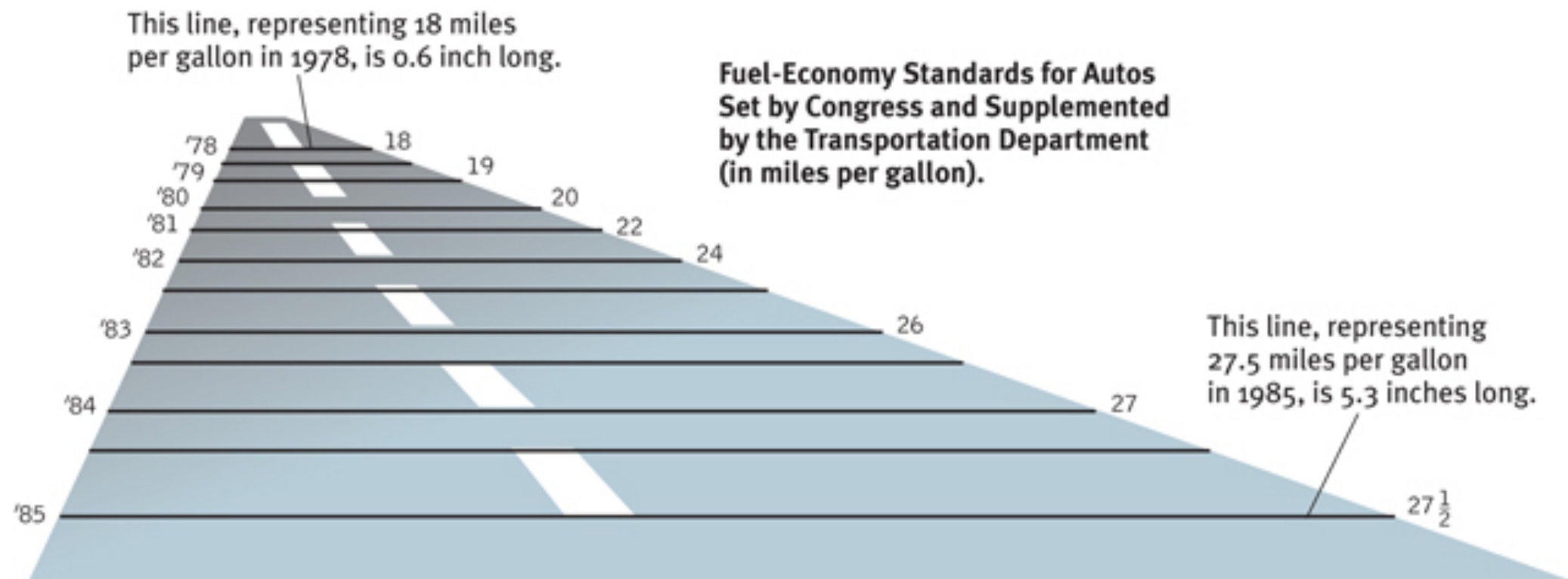
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- False face validity lie – method seems to represent what it says, but does not
- Biased scale lie – scaling to skew the results
- Sneaky sample lie – when participants are preselected to provide the desired data
- Extrapolation lie – assumes knowledge outside the study

# Techniques for misleading graphs

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- Inaccurate values lie-using scaling to distort portions of the data
- Outright lie-making up data



# Which of the two graphs is misleading?

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