Introduction to SPSS

Math 260

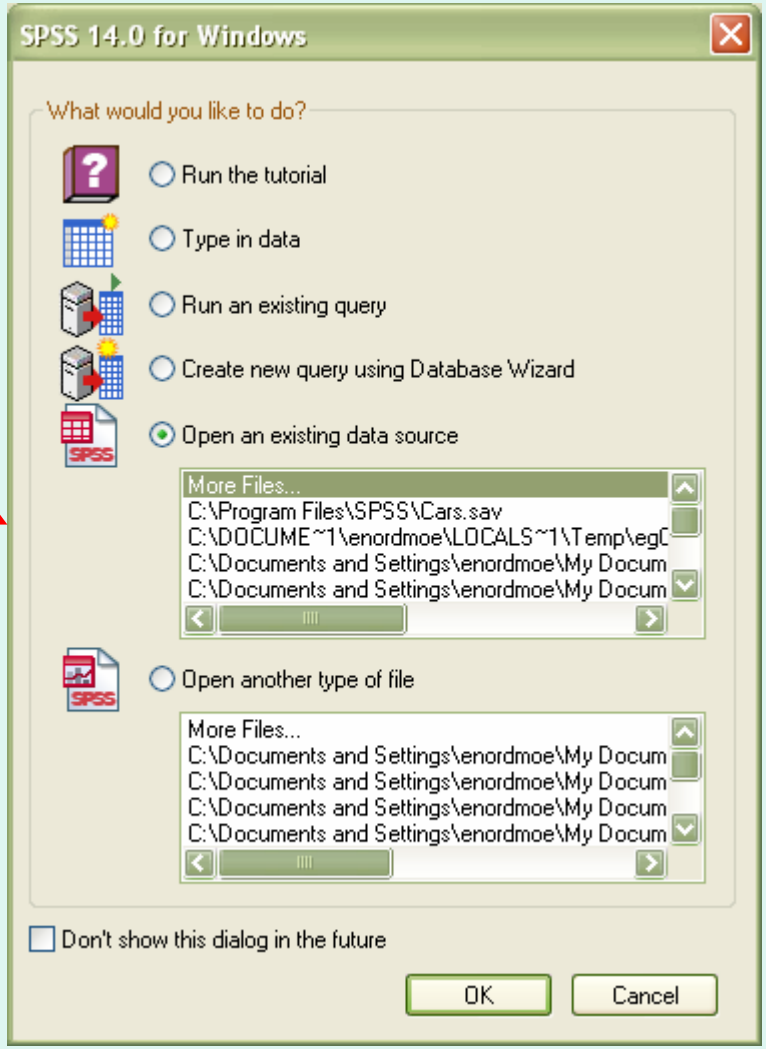
Agenda

1. Starting SPSS
2. Getting data into SPSS
3. Getting to know SPSS
4. Creating a histogram

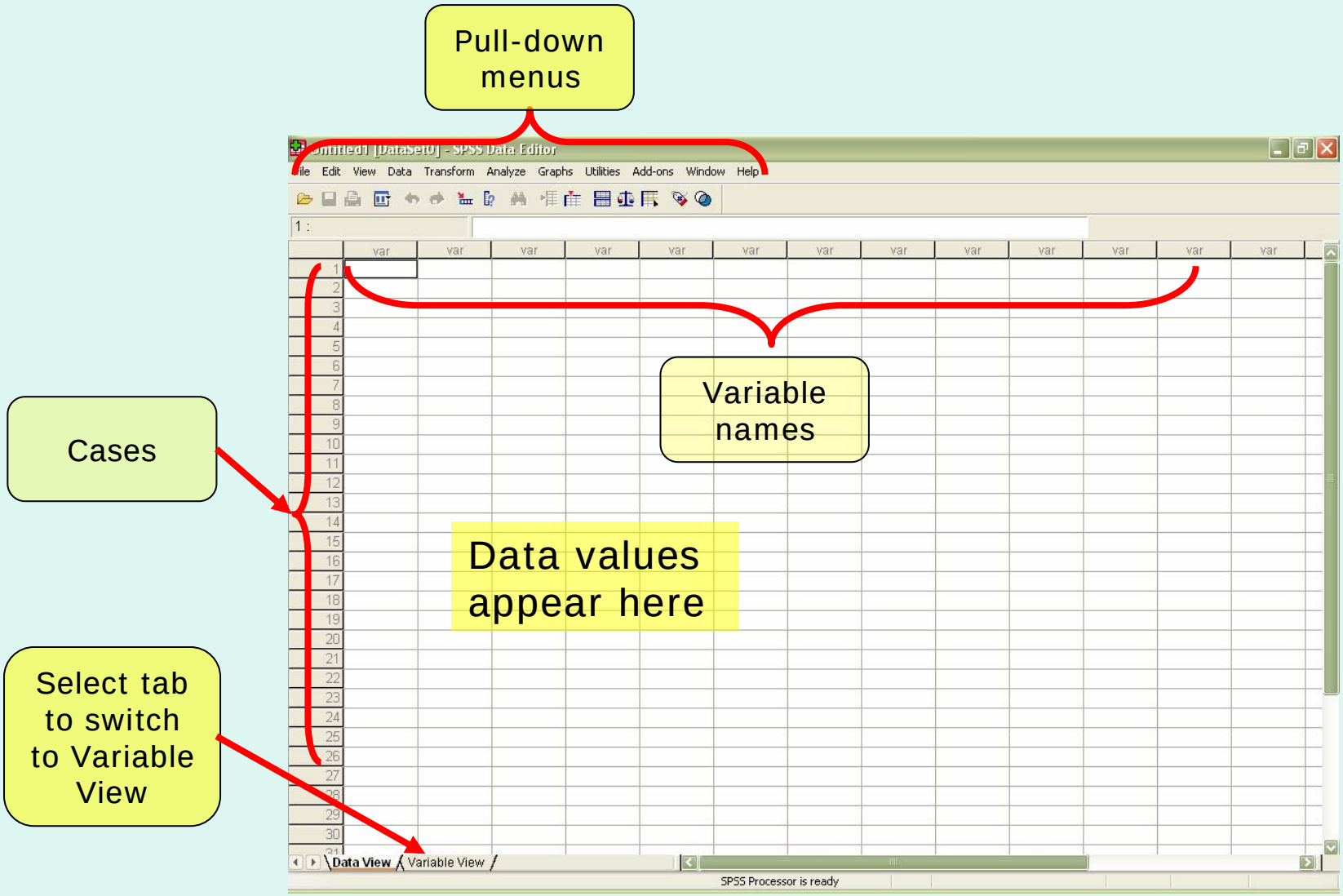
1. Starting SPSS

1. Select SPSS 14.0 for Windows from the Start Menu

2. Select the ESC key to bypass the opening dialog box at right.



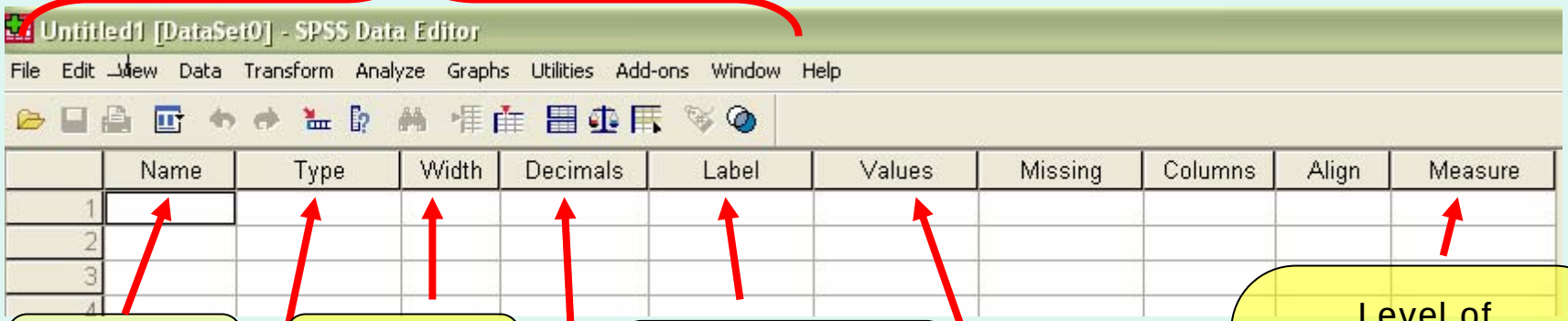
Opening Screen: The Data View



The Variable View

Variable view contains information about how each variable is defined, coded and displayed.

Same pull-down menus



Variable names

How data should be stored: numeric, date, text string?

Num of digits displayed

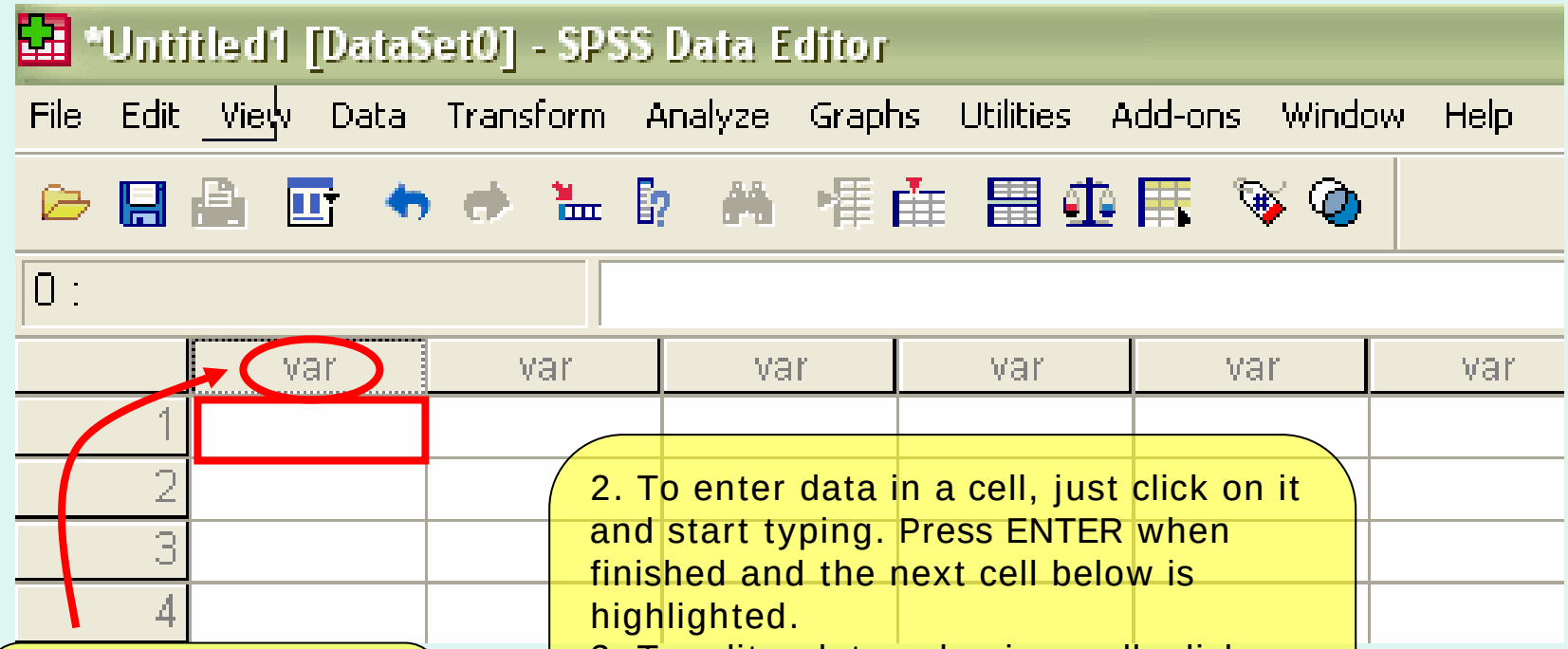
Num of decimal places displayed

Descriptive label that displays in output

For example 1=First Year, 2=Sophomore, etc.

Level of measurement: scale (quant), ordinal (ordered categorical, e.g., not employed, part-time, full-time), nominal (categorical)

Working with the Data View



1. To change a variable name, double-click and type.

2. To enter data in a cell, just click on it and start typing. Press ENTER when finished and the next cell below is highlighted.
3. To edit a data value in a cell, click on it and either press DELETE and re-type the correct value or double-click and edit the value in place.

2. Getting data into SPSS

Entering Data Manually: An Example

See Example 1.1 of Moore's text for details about this data.

	SERIALNO	PWGTP	AGEP	JWNP	SCHL	SEX
1	283	187	66	.	6	1
2	283	158	66	.	9	2
3	323	176	54	10	12	2
4	346	339	37	10	11	1
5	346	91	27	10	10	2
6	370	234	53	10	13	1

Individual in household 346 weighs 91 pounds, is 27 years of age, travels 10 minutes to work, has completed some college, and is female.

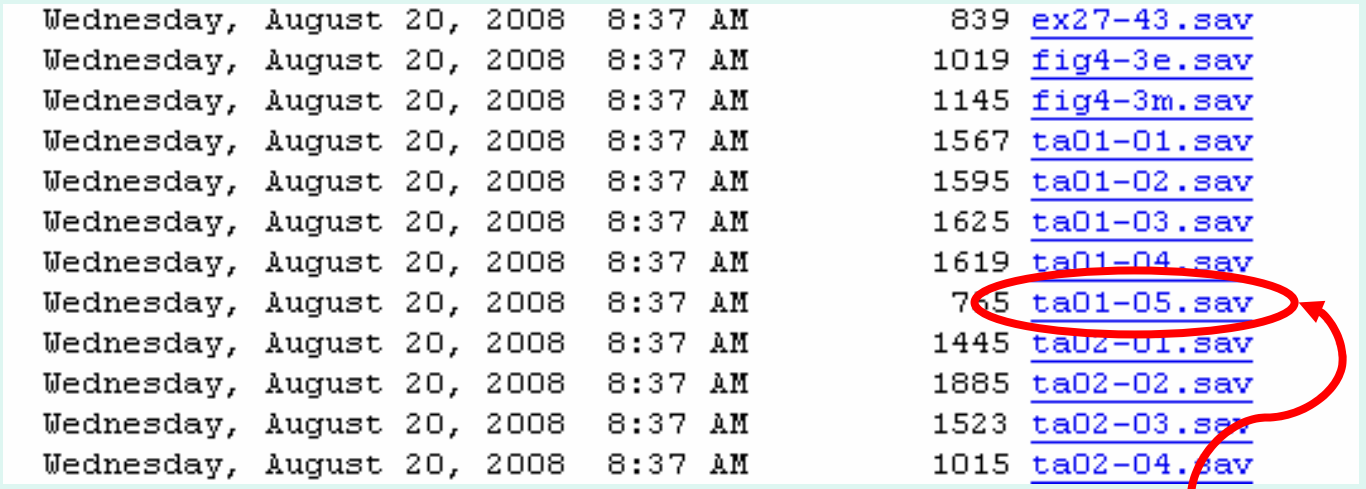
Period indicates missing data.

Other Common Methods for Getting Data into SPSS

- Method 1: Click on the data set name (XXX.sav) from my website.
  - Details are on the following pages.
- Method 2: Load an Excel spreadsheet file
  - Variable names should be in the first row
  - Use File…Open..Data in SPSS and locate the file (set filetype to .xls).
  - See me if you need more details.

Method 1:
Starting SPSS with Data
for a Problem from the Text (Table 1.5)

- Go to http://kzoo.edu/enordmoe/math260/spss/
- Click on the correct file name:



Wednesday,	August 20, 2008	8:37 AM	839	ex27-43.sav
Wednesday,	August 20, 2008	8:37 AM	1019	fig4-3e.sav
Wednesday,	August 20, 2008	8:37 AM	1145	fig4-3m.sav
Wednesday,	August 20, 2008	8:37 AM	1567	ta01-01.sav
Wednesday,	August 20, 2008	8:37 AM	1595	ta01-02.sav
Wednesday,	August 20, 2008	8:37 AM	1625	ta01-03.sav
Wednesday,	August 20, 2008	8:37 AM	1619	ta01-04.sav
Wednesday,	August 20, 2008	8:37 AM	765	ta01-05.sav
Wednesday,	August 20, 2008	8:37 AM	1445	ta02-01.sav
Wednesday,	August 20, 2008	8:37 AM	1885	ta02-02.sav
Wednesday,	August 20, 2008	8:37 AM	1523	ta02-03.sav
Wednesday,	August 20, 2008	8:37 AM	1015	ta02-04.sav

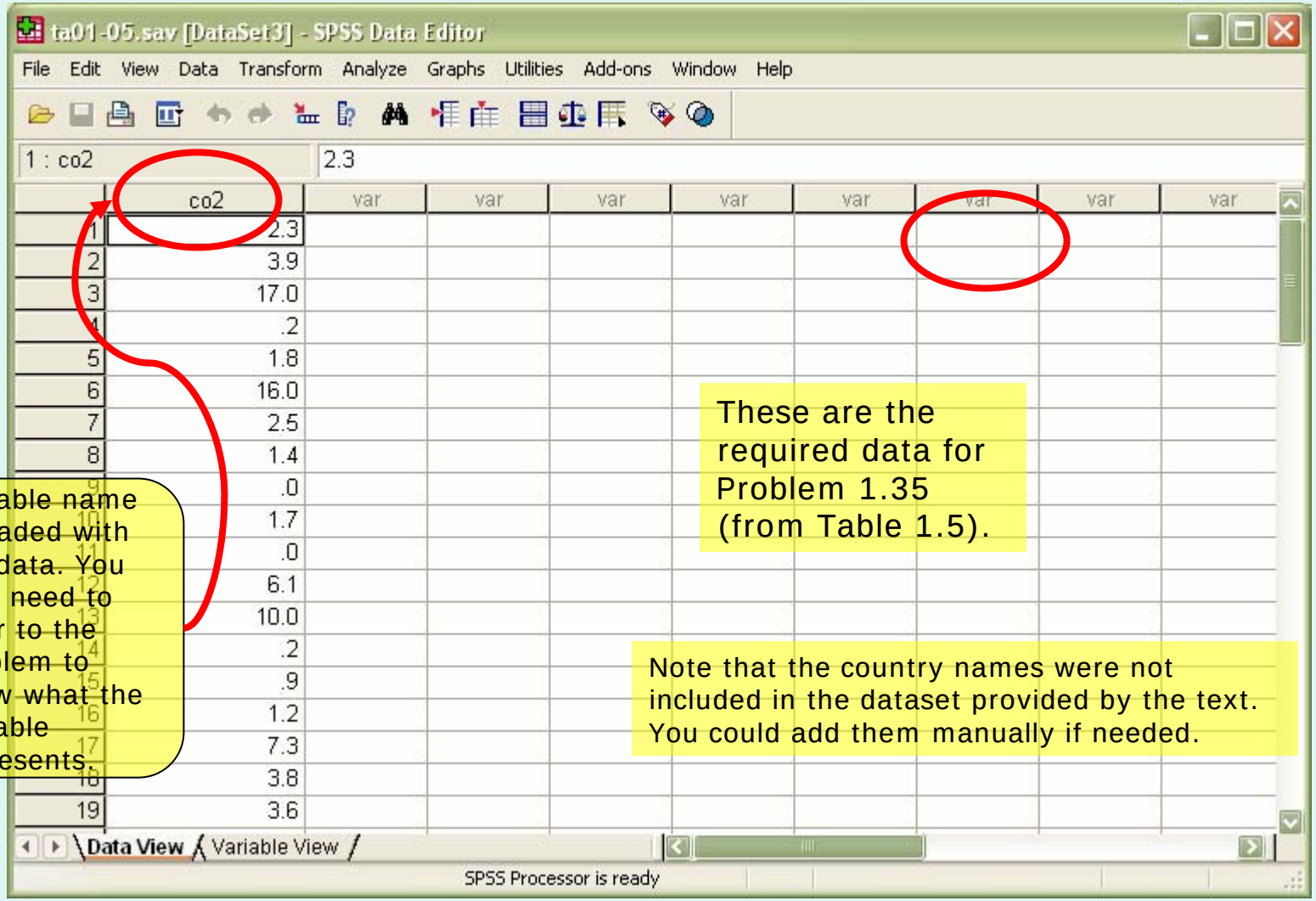
Click here to open SPSS with the data from Table 1.5 (you must be on a computer with SPSS

Another option is to right-click on the file name and the save the file to be opened later.

Method 1:
SPSS Data Set
Name Formats

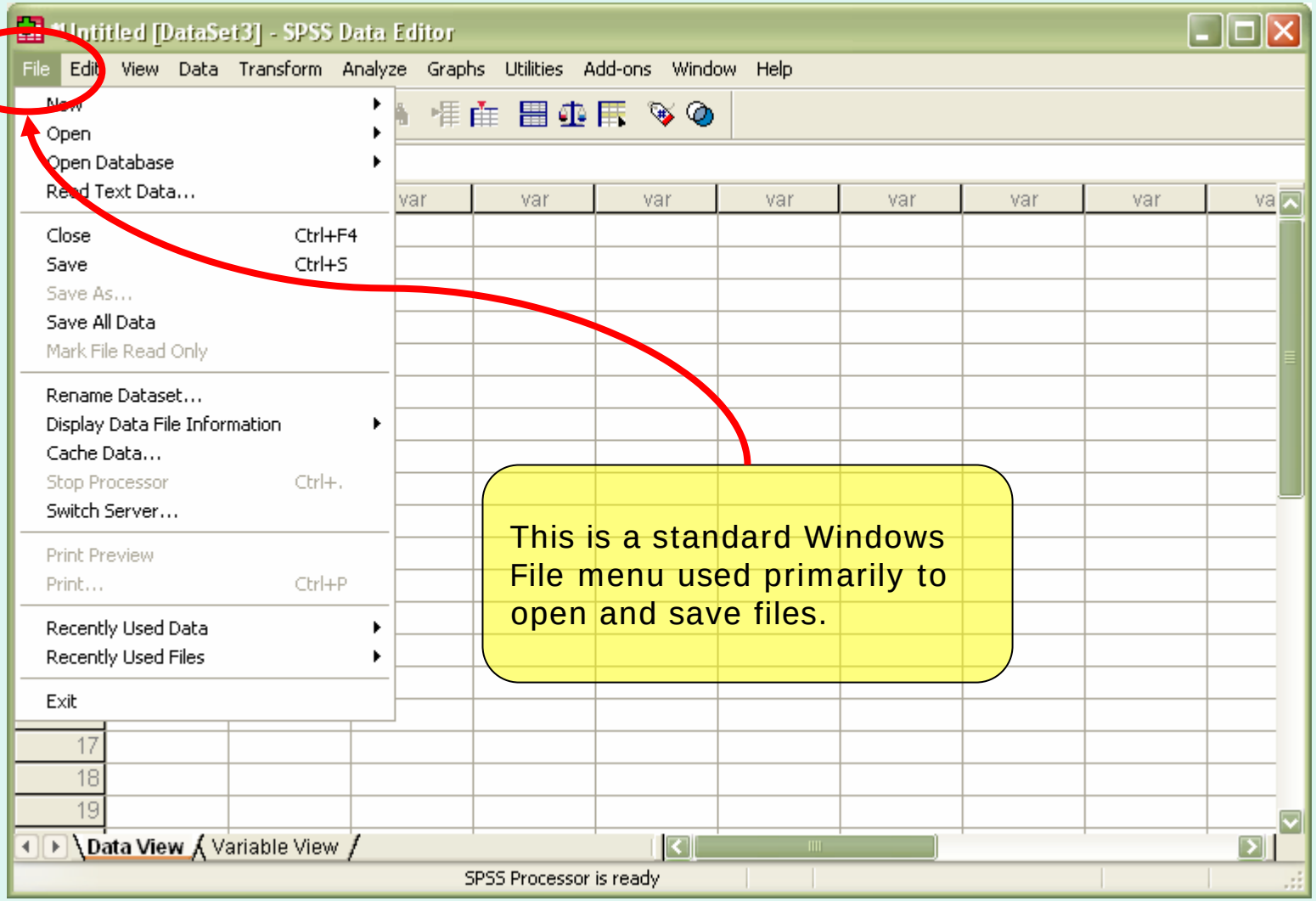
- To access the class SPSS data sets, remember these naming conventions:
  - eg01-02 ➔ Example 1.2
  - ex01-11➔ Exercise 1.11
  - fig4-3e ➔ Figure 4.3 (Eastern schools)
  - ta01-01 ➔ Table 1.1

Method 1 (cont'd)
SPSS opens with the data from Problem 1.35 pre-loaded



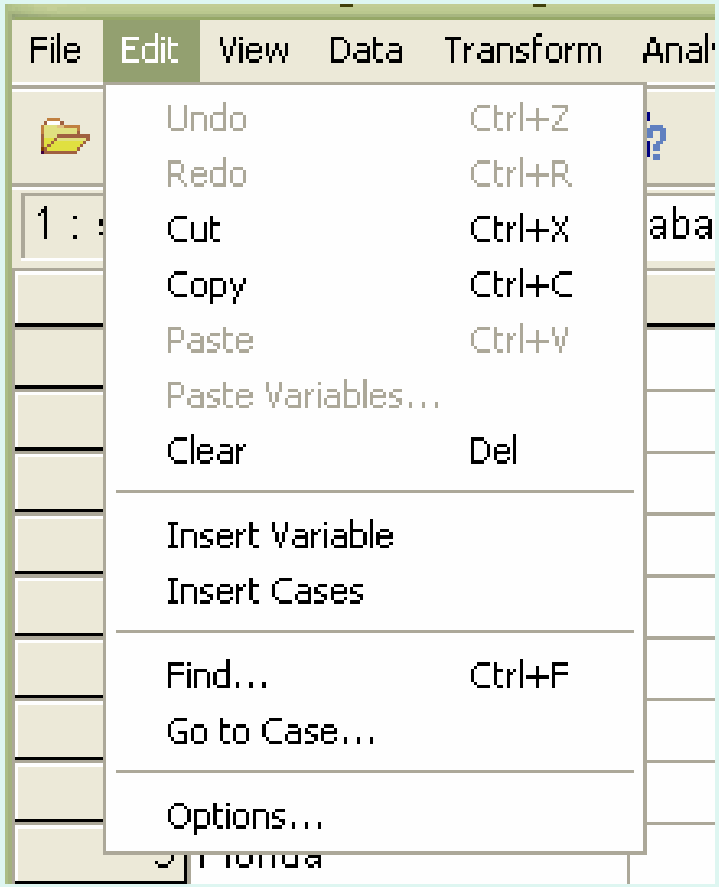
3. Getting to know SPSS

The File Menu



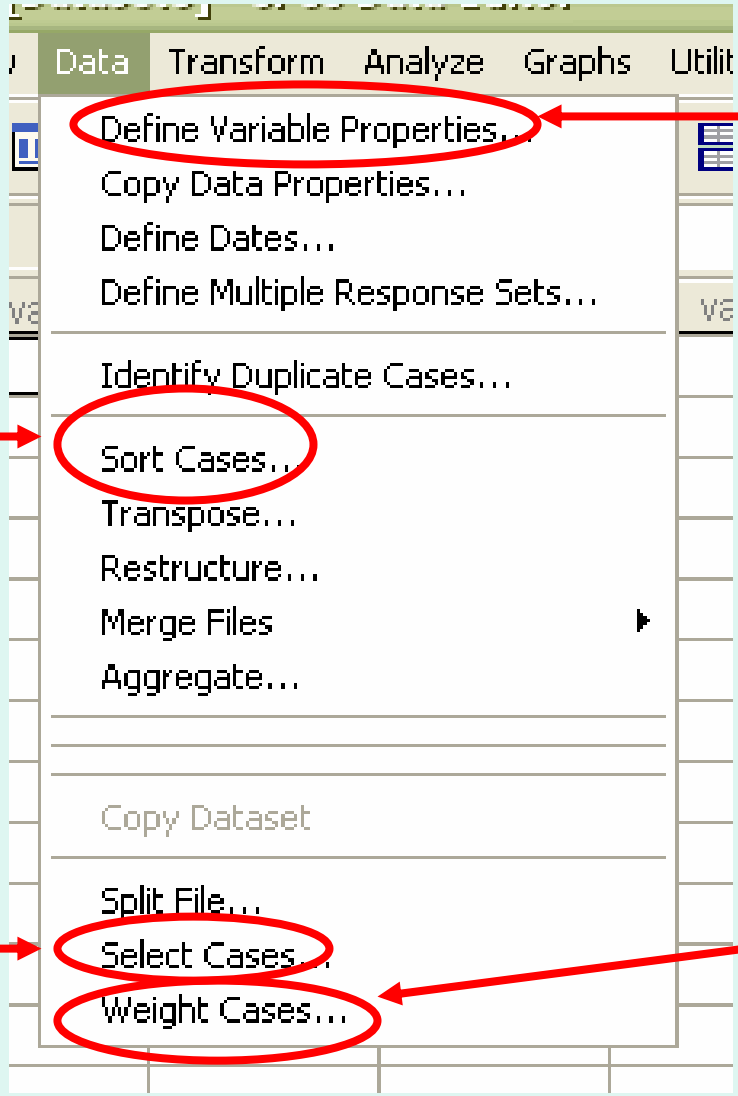
The Edit Menu

Use this menu for manual editing of the data set similar to a typical spreadsheet (but you cannot use spreadsheet formulas in the SPSS Data View.



The Data Menu

This menu contains a couple important procedures for preparing data for further analysis but we won't use it very often.



This can be done from the Variable View page.

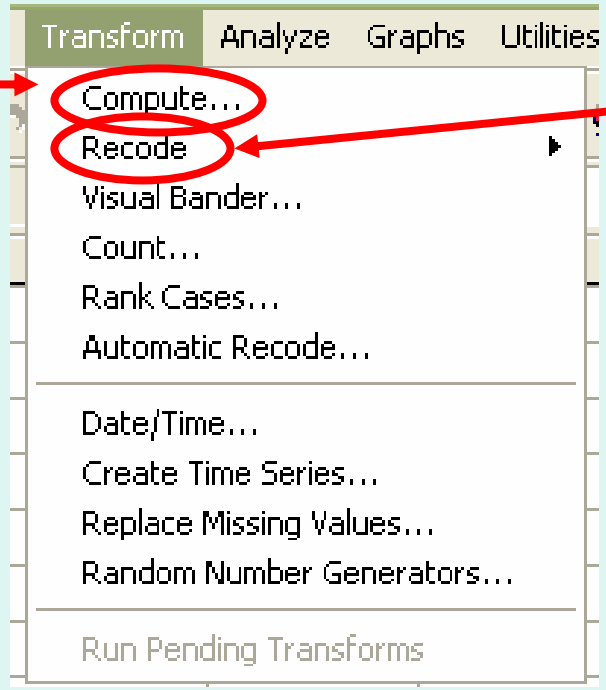
Use this or Right-click on a variable name in the Data View to sort by a variable.

Select cases that meet a certain criterion (e.g., females) or select a random sample.

May be used towards the end of the course.

The Transform Menu

Use to compute new variables from existing variables (e.g., log(income) from income).

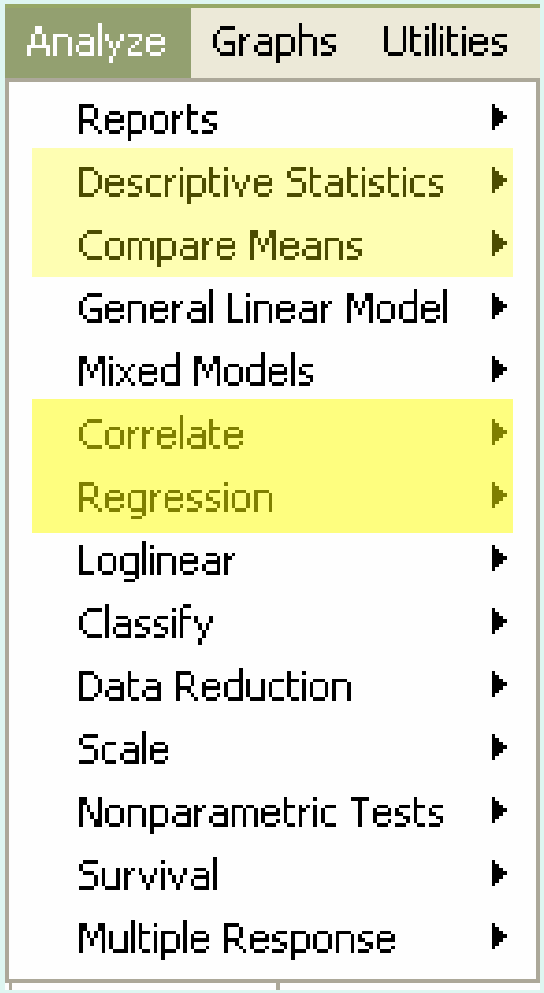


Change or combine categories (e.g., create binary married/unmarried variable from a general marital status variable with several categories).

We will seldom use of the other commands from this menu.

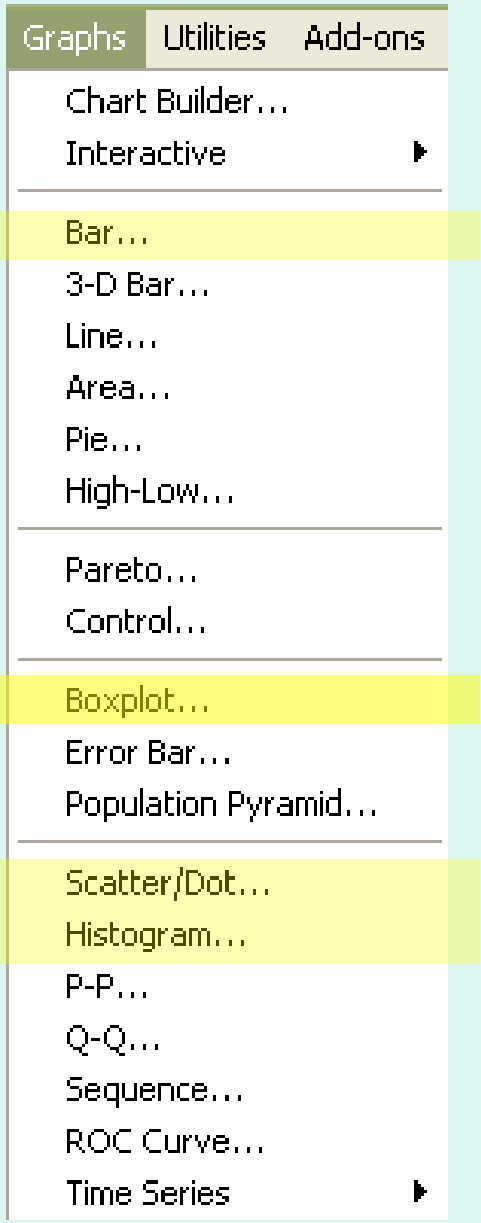
The Analyze Menu

This menu contains the statistical procedures we will learn (and many more!). The ones we'll use most are highlighted. These are described in detail in other help sheets.



The Graphs Menu

This menu contains the graphical procedures we will learn (and many more!). Again, the ones we'll use most are highlighted. These are described in detail in other help sheets.

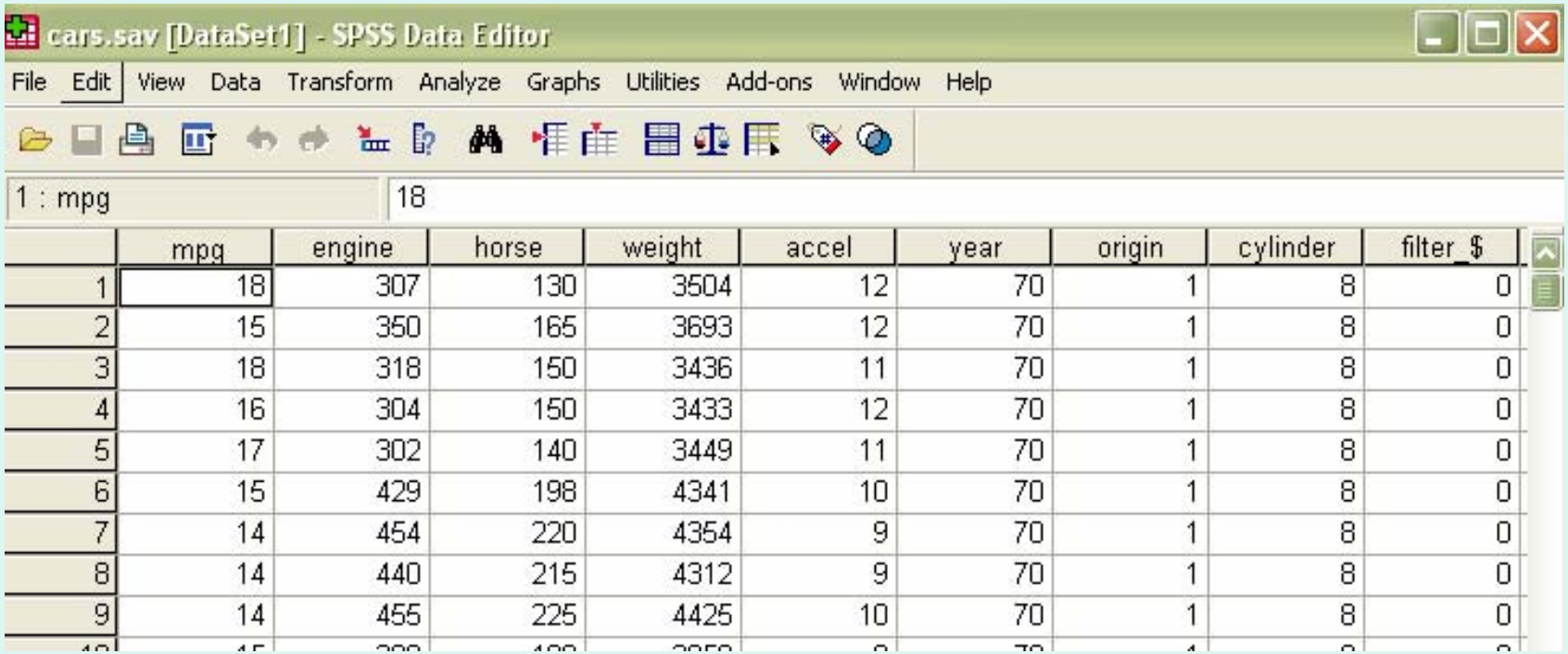


Other notes

- We will probably not use the Utilities and Add-ons menus.
- The Window menu is similar to that in other Windows software.
- Use F1 for general help or use the context-specific help buttons in the dialog boxes.
  - Until you get familiar with the program, you may have difficulty making sense of the SPSS help. You may ask me instead.

4. Creating a Histogram

Find and Open the Cars.sav data set from my SPSS data directory



	mpg	engine	horse	weight	accel	year	origin	cylinder	filter_$
1	18	307	130	3504	12	70	1	8	0
2	15	350	165	3693	12	70	1	8	0
3	18	318	150	3436	11	70	1	8	0
4	16	304	150	3433	12	70	1	8	0
5	17	302	140	3449	11	70	1	8	0
6	15	429	198	4341	10	70	1	8	0
7	14	454	220	4354	9	70	1	8	0
8	14	440	215	4312	9	70	1	8	0
9	14	455	225	4425	10	70	1	8	0

Click on the variable view to get more information about the variables from the labels.

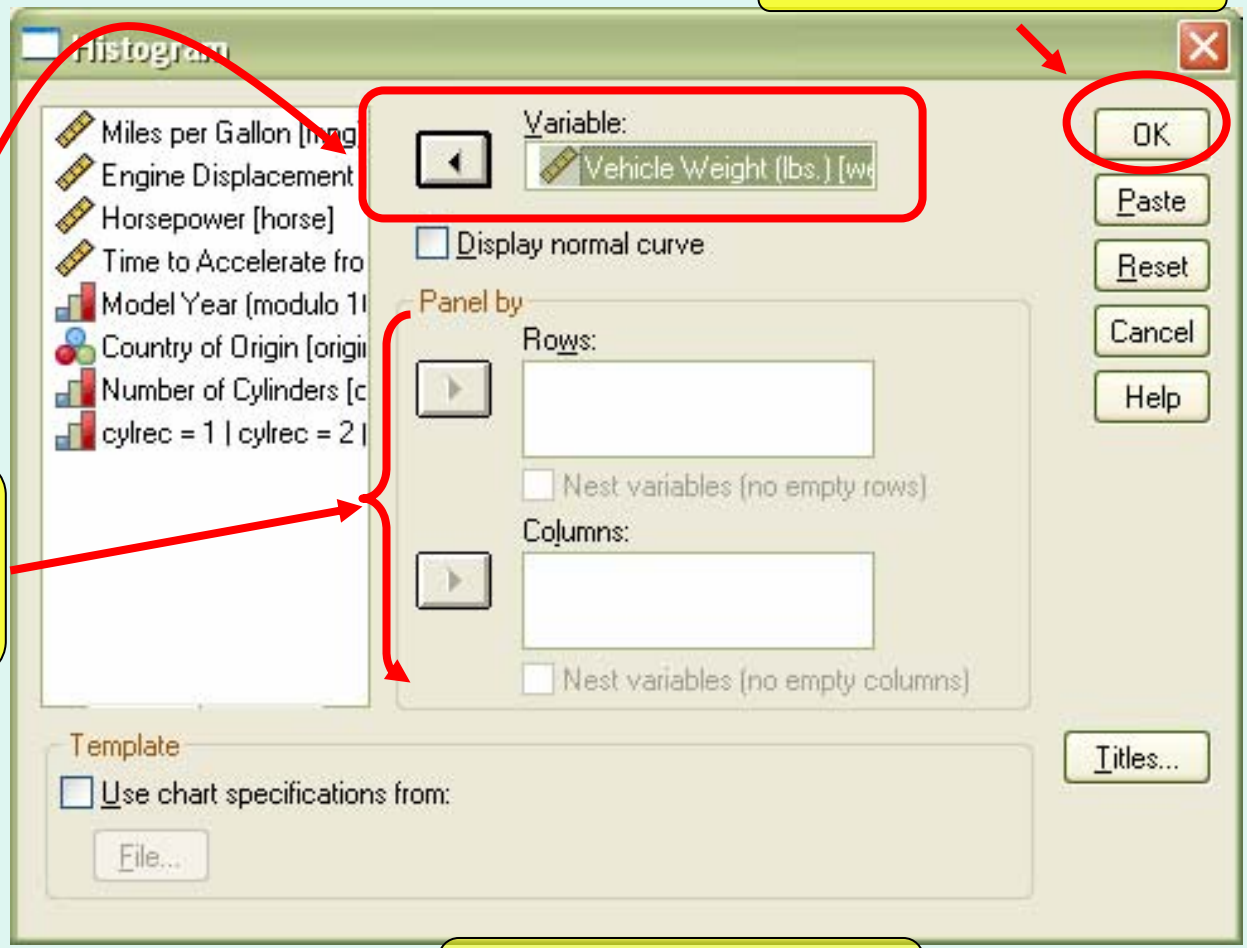
Histogram of `weight` variable

1. Select Histogram from the Graphs menu

Histogram dialog box

2. Click OK to plot.

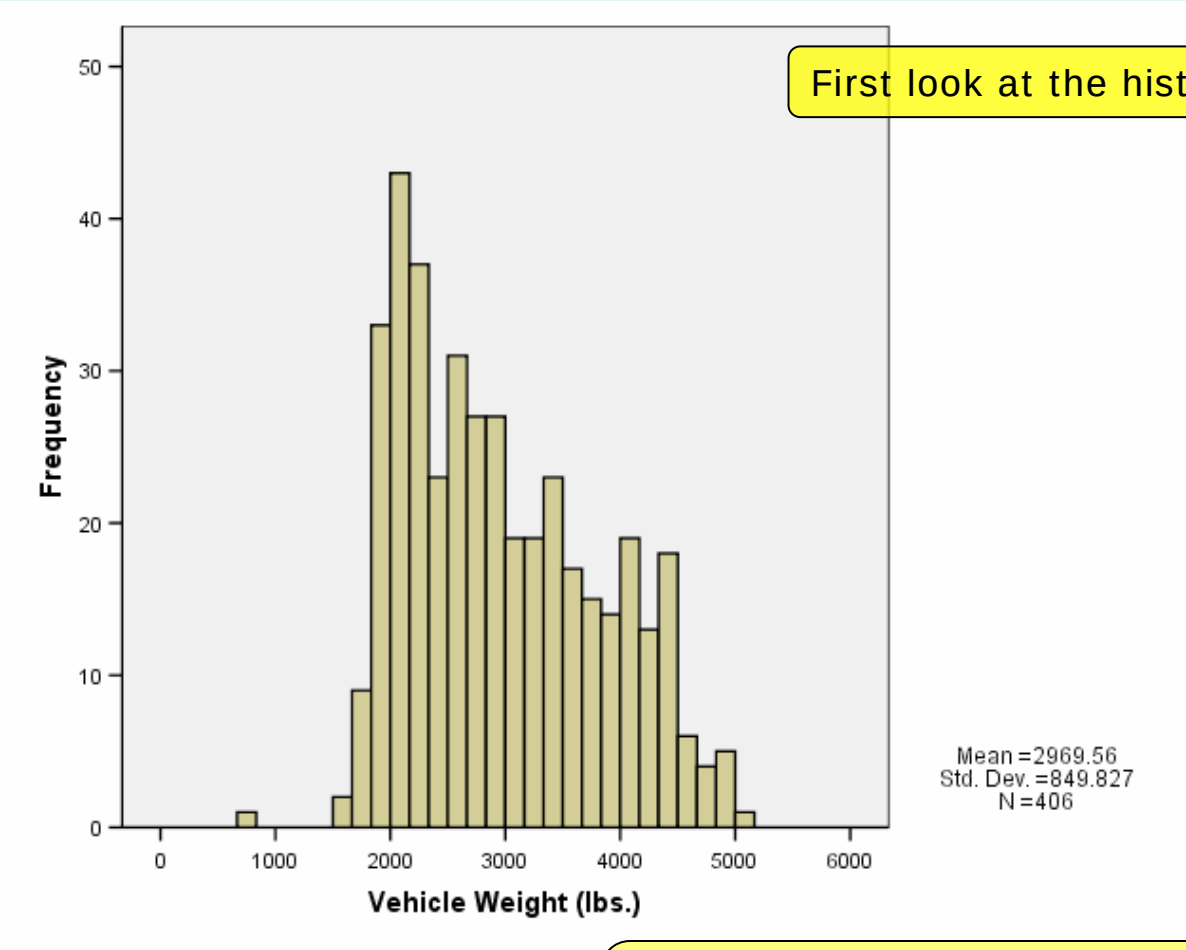
1. Highlight “Vehicle Weight” and use the arrow button to move it to the Variable box.



Use these to get one histogram for each group defined by another variable (e.g. Country)

3. Output viewer opens…

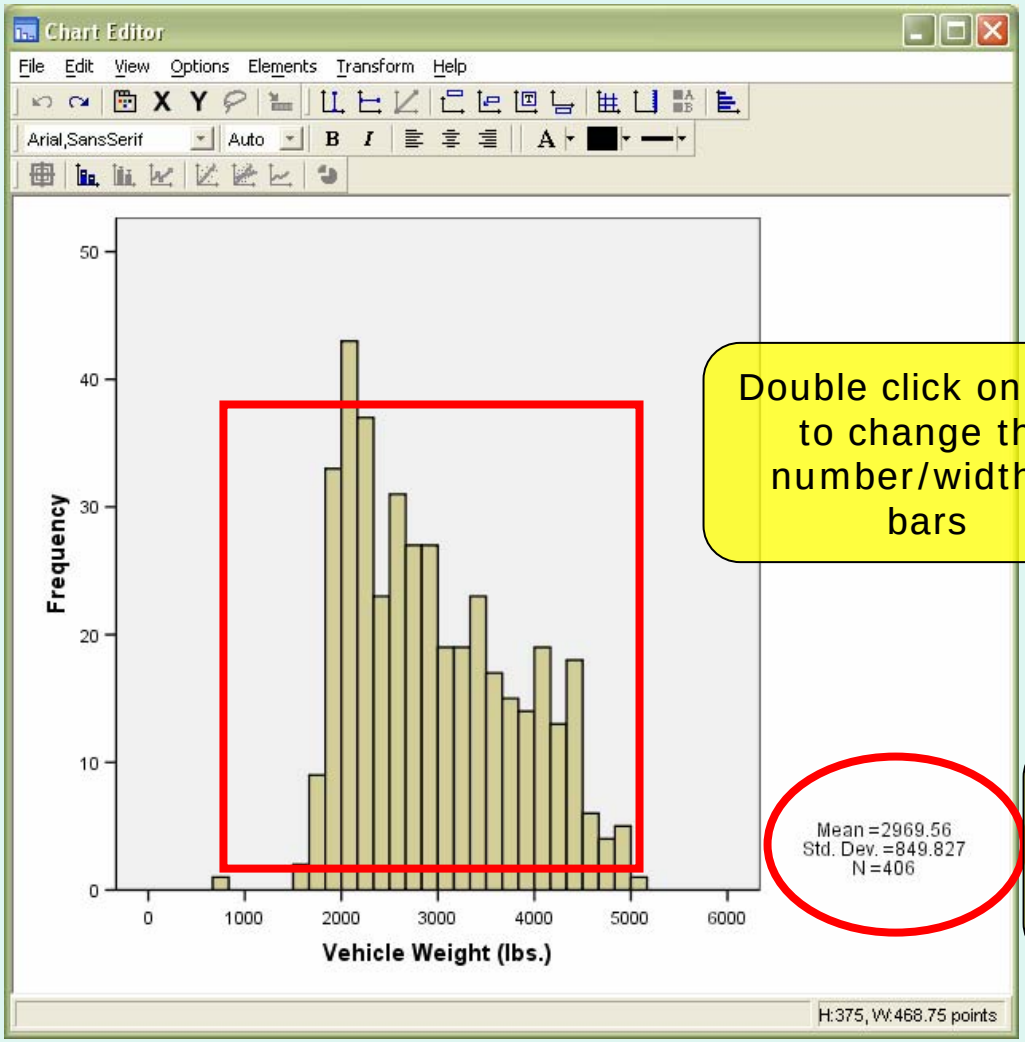
Output viewer: Histogram



First look at the histogram.

Let's see how to modify it to have fewer bars and remove the legend at right. First double-click on the plot.

Modifying a Histogram in the Chart Editor



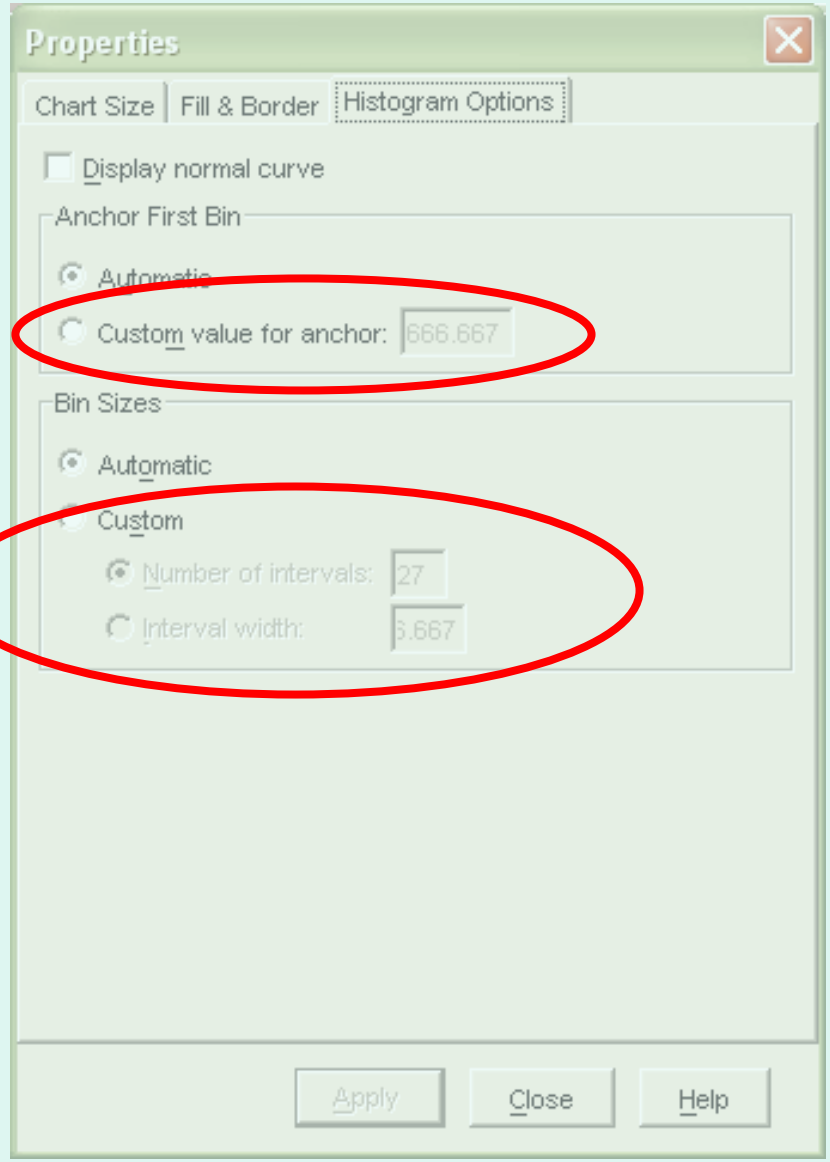
Double click on bars to change the number/width of bars

Click and press Del key to remove the legend.

Changing the Histogram Bar Width

Set “Custom value” if you want to be sure the first bar starts at a specific value on the x-axis

Use Custom “Bin Sizes” to set the number of intervals or the Interval Width.

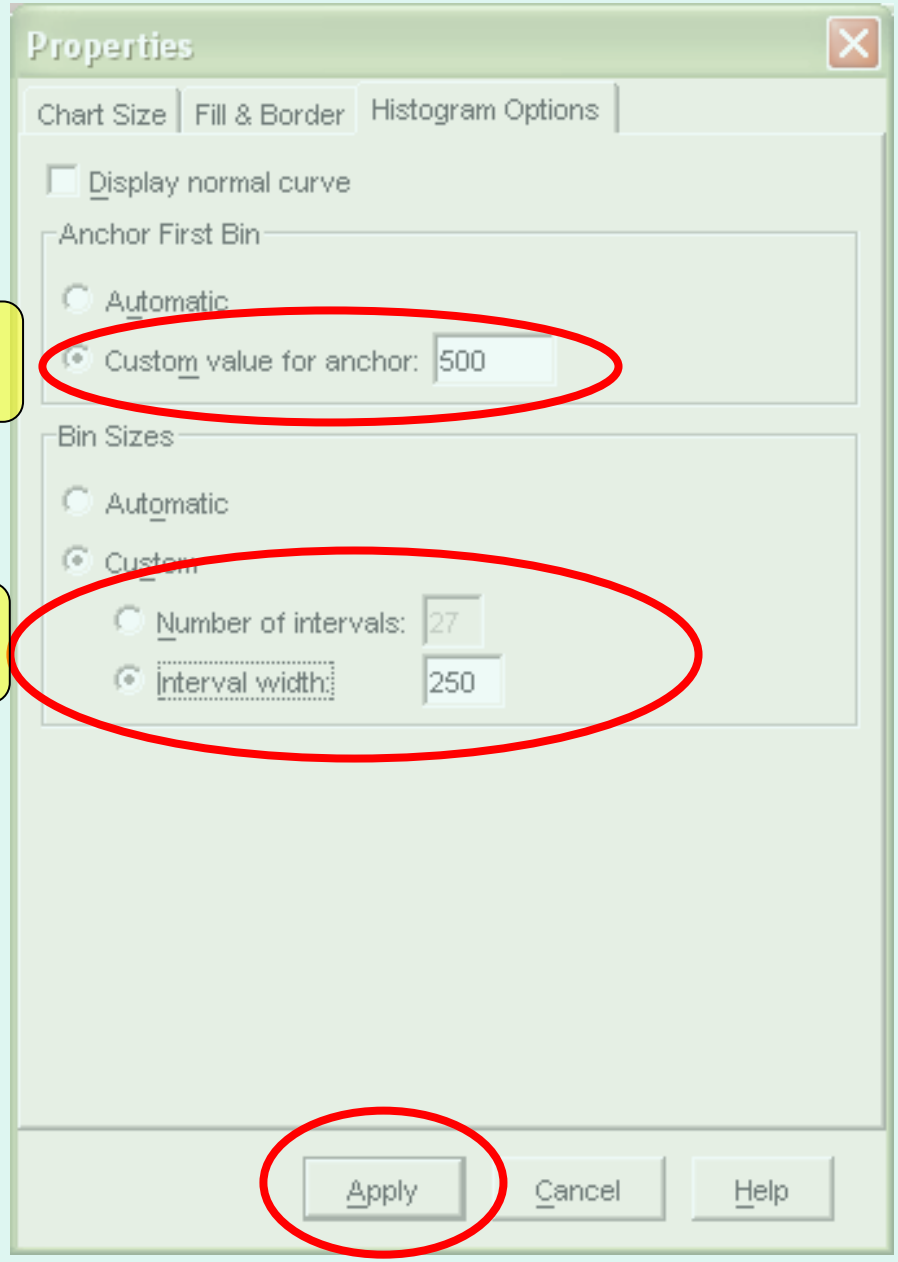


We’ll set the interval width to be 250 lbs and anchor the first bin at 500. In practice, trial and error with judgment is needed.

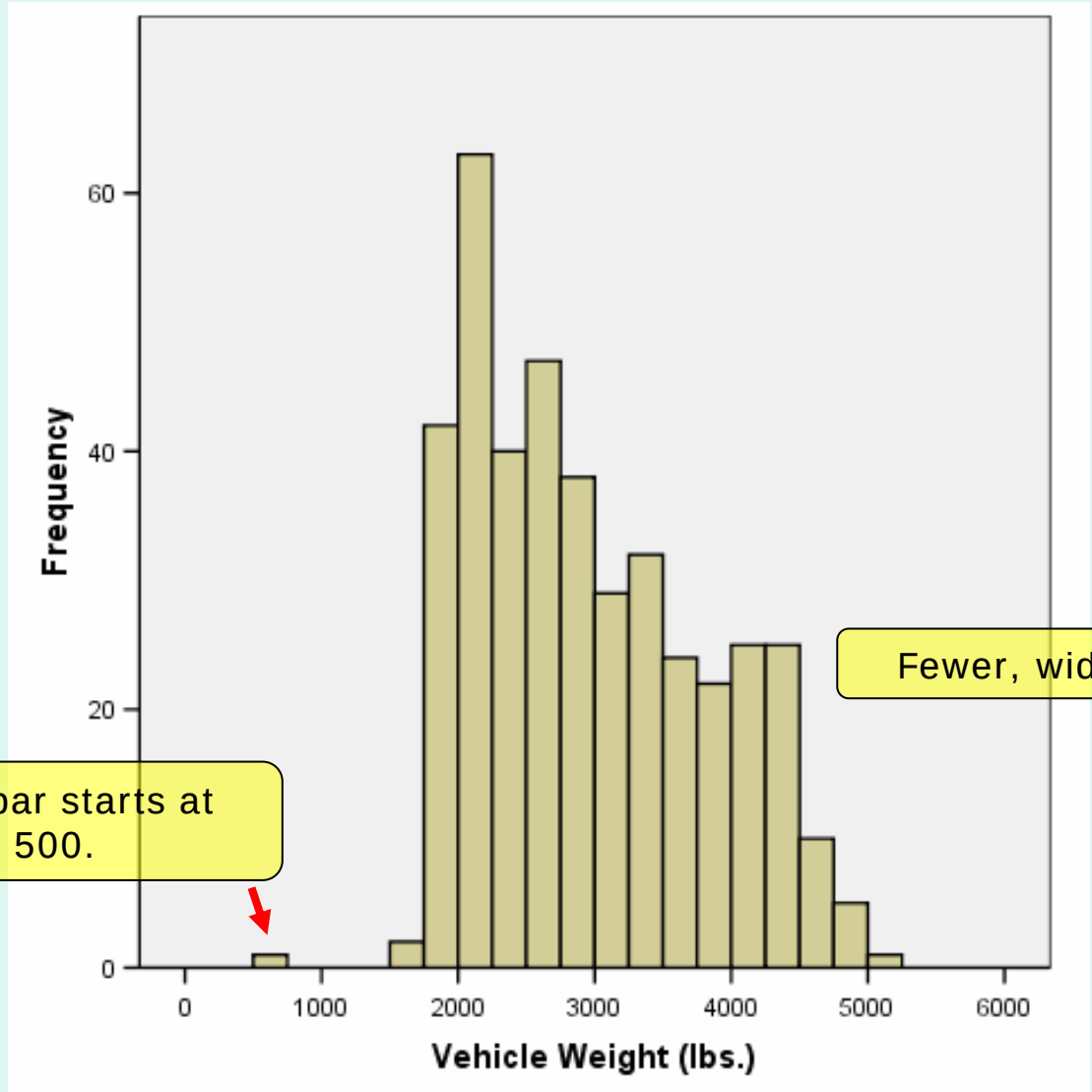
Example: Changing the Histogram Bar Width

First bar interval starts at 500.

Each bar spans 250 lbs.



Example: After Modifying the Histogram



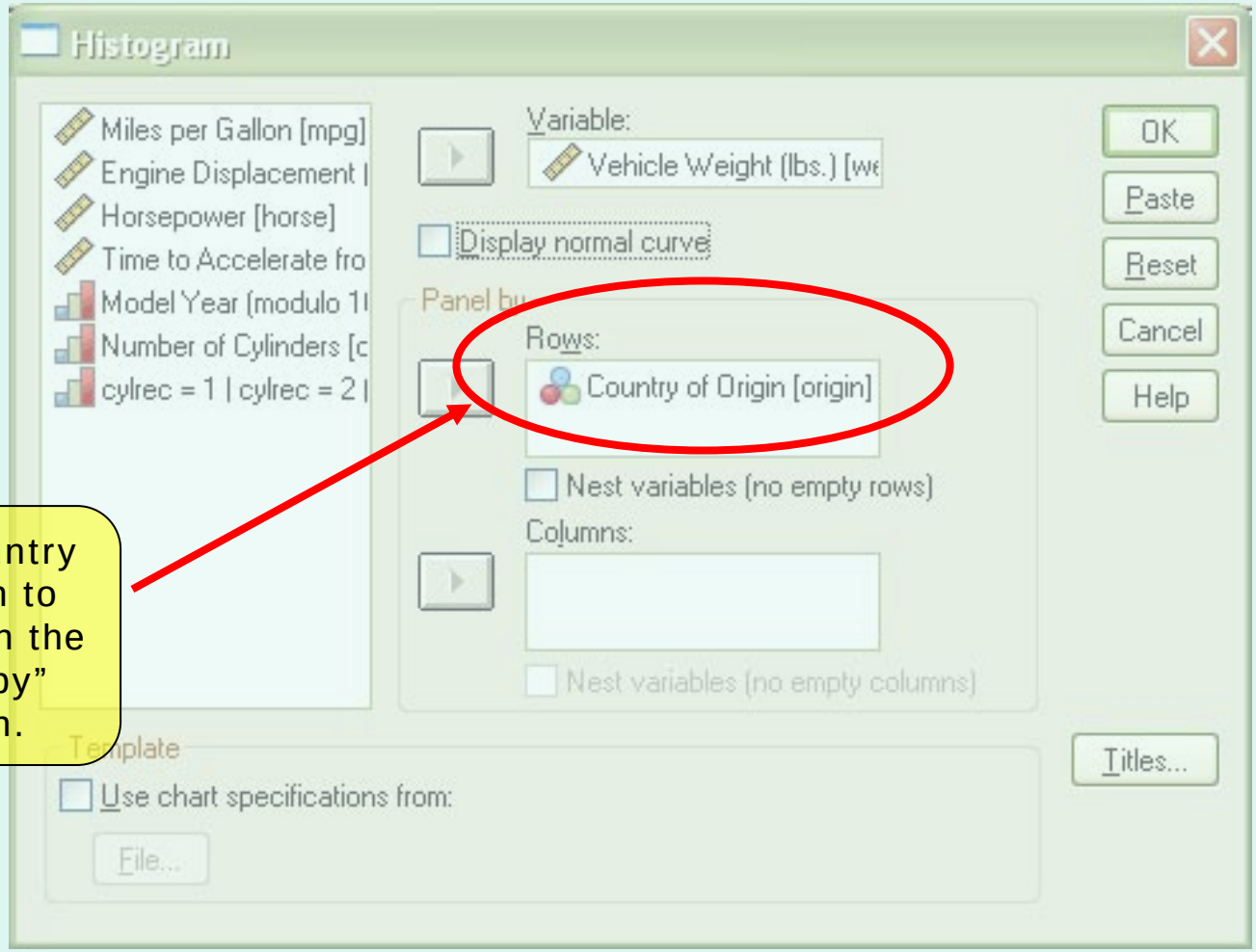
Modifying the Histogram

- Many other options exist for modifying plots in the Chart Editor, too much to cover here.
- Browse the menus or try double-clicking various elements of the plot (scales, labels, etc.).
- Ask if you have questions.
- Note: To get percent rather than frequency on the y-axis in SPSS v14, you need to use Graphs…Interactive…Histogram.

Paneled Histogram

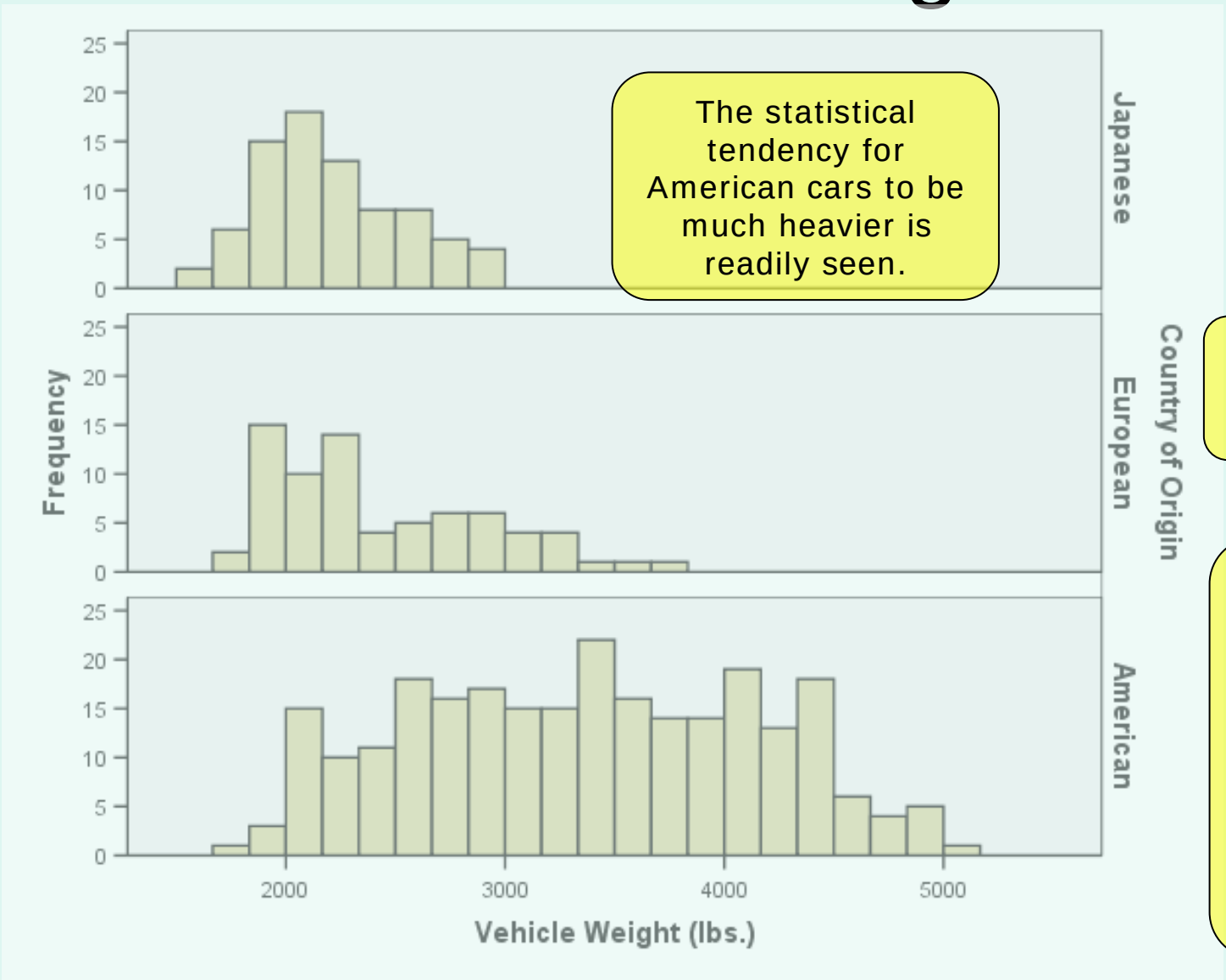
- To obtain a separate histogram for two or more groups defined by a categorical variable, carry out the procedure on the next page.
- Obtain a histogram of car weight for each country of origin.

Paneled Histogram



Move country of Origin to "Rows:" in the "Panel by" section.

Paneled Histogram



The statistical tendency for American cars to be much heavier is readily seen.

One panel for each country.

Note: Any cars missing the value for Country are omitted (including the car with weight under 1000 we saw before).