

# FIGURES AND TABLES

## General Cautions

As you go through the instructions for creating a figure in APA format, remember to *save your work often*. There is nothing so frustrating as to have to start all over again part way through the process.

**If you click off the chart**, you will have to click on the chart to have the correct toolbar show.

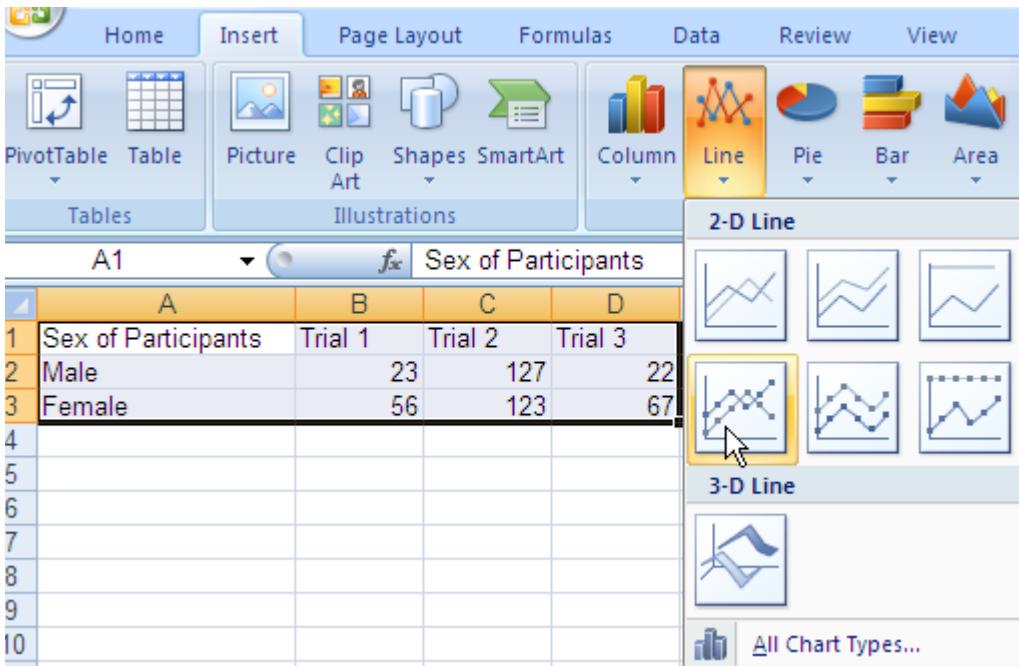
## Line Graphs

Assume that you have done a study on the effectiveness of a new typing system. One independent variable is gender and the other is other is trial blocks. The dependent variable is the number of correctly typed words. You need to make a figure, in APA format, of the interaction. The first step is to enter the condition means on an Excel spreadsheet.

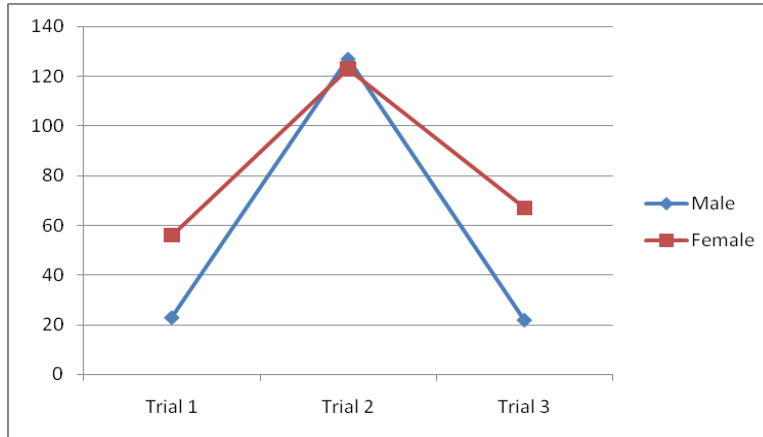
A	B	C	D
Sex of Participants	Trial 1	Trial 2	Trial 3
Male	23	127	22
Female	56	123	67

Highlight the information you want on the figure.

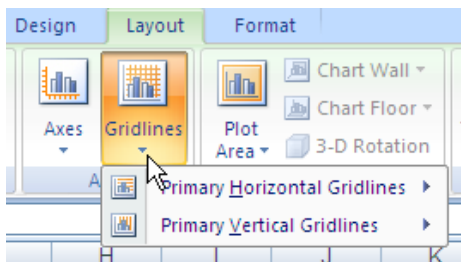
Click on the Insert tab and then on the type of chart you want (line because your variable is continuous). On the pull down menu, select the type of line chart you want. Chose a 2- D style line with markers.



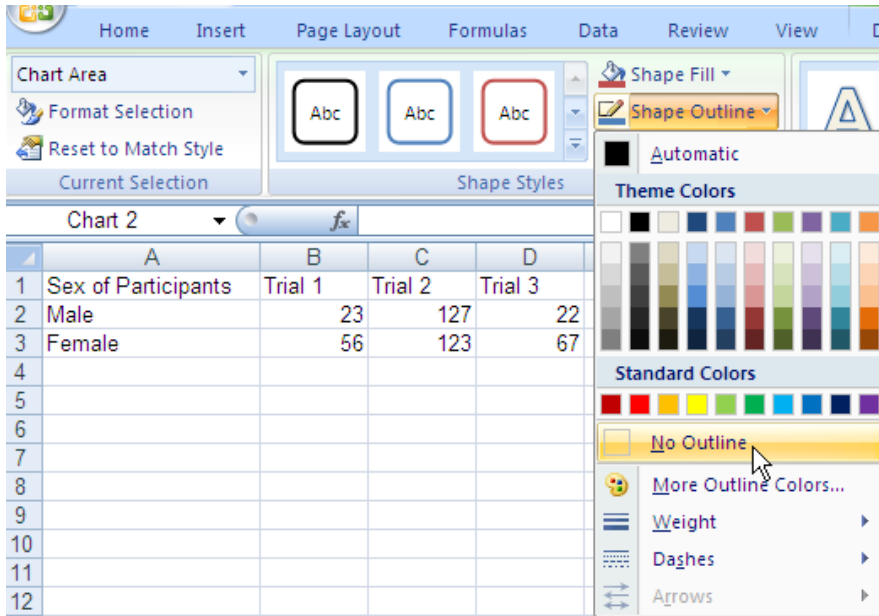
At this point your figure should look like this.



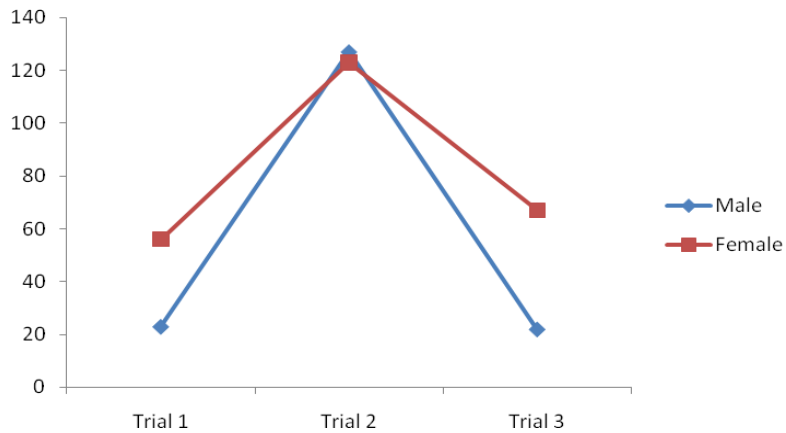
First we'll remove the gridlines. Click on Layout, Gridlines, Primary Horizontal Gridlines, and None.



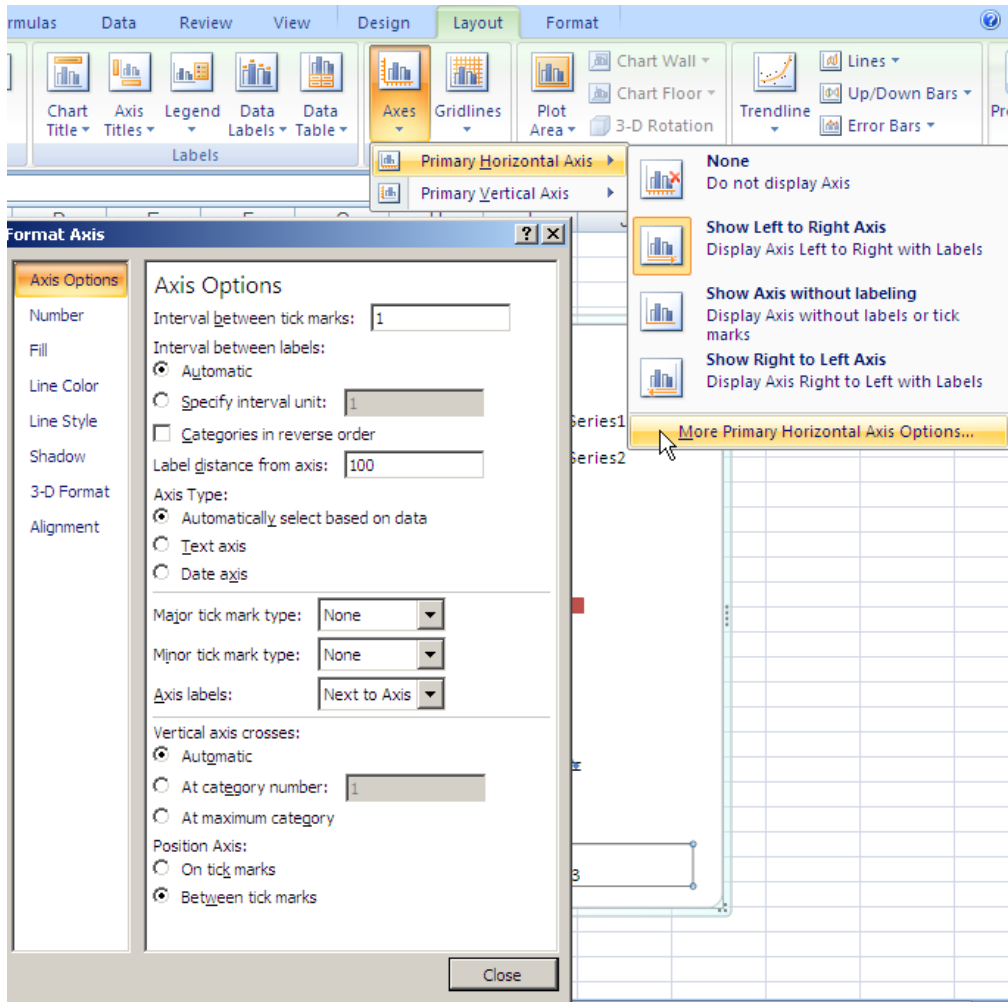
The next step is to remove the border around the figure. To do that, click on Format. Under Shape Styles, click on Shape Outline and then No Outline.



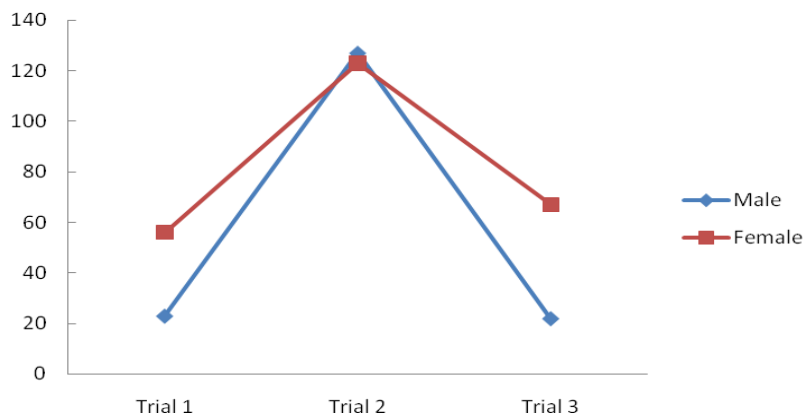
Now your figure should look like this.



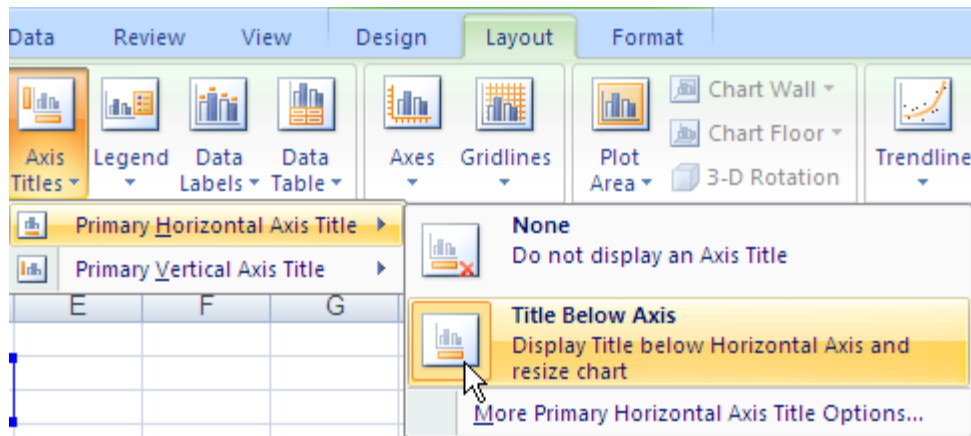
Now we'll remove the ticks on the X axis. Under Layout, click on Axes, Primary Horizontal Axis, and More Primary Horizontal Axis Options. That will bring up a new box labeled format axis. Under axis options, there is a box for major tick marks. Indicate None and click on close.



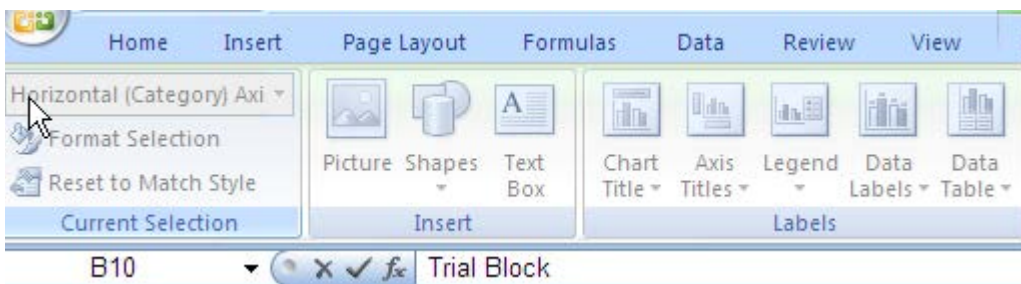
On the Y axis you want the tick marks but they should be inside marks, rather than outside marks. Under Layout, click on Axes, Primary Vertical Axis, and More Primary Vertical Axis Options. That will bring up a new box labeled format axis. Under axis options, there is box for major tick marks. Indicate Inside and click on close. Now your figure should look like this.



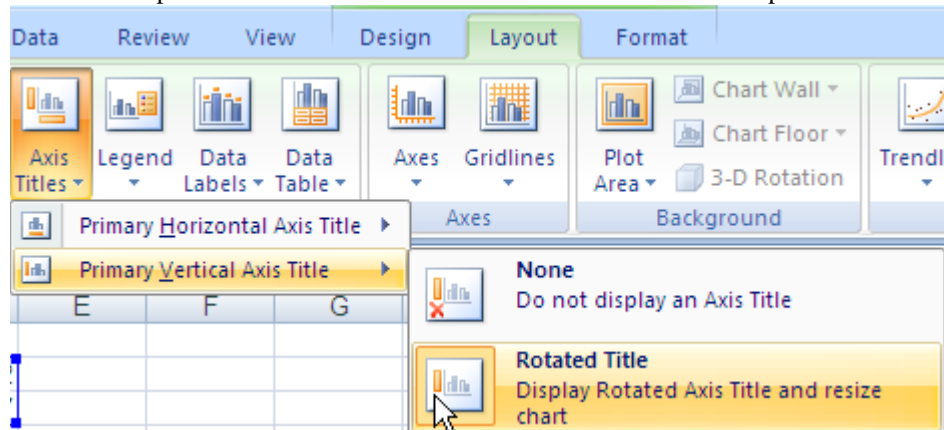
Now we want to add labels to the X and Y axes. Go to Layout and click on Axis Titles. For the X axis, click on Primary Horizontal Axis and then Title Below Axis.



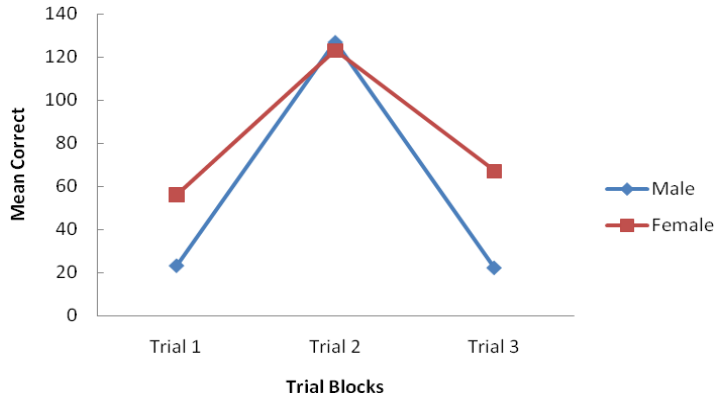
A box will open up below the X axis. Type the label Trial Blocks in the Formula Bar and hit enter.



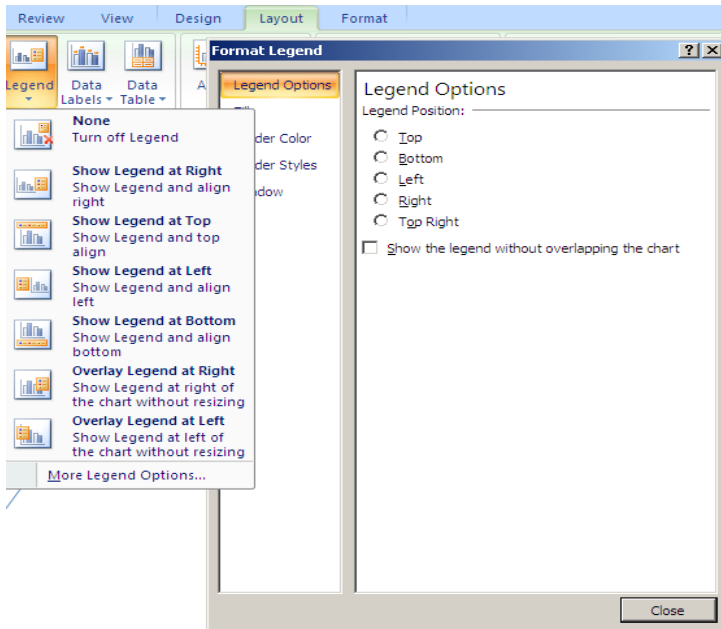
It is the same procedure for the vertical axis. Select the Rotated Title option.



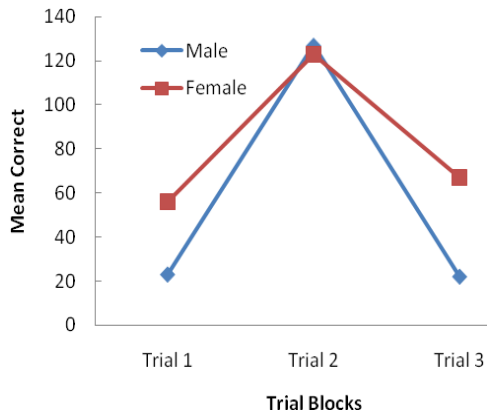
Here the label should be Mean Correct. When you are finished, the figure should look like the figure below.



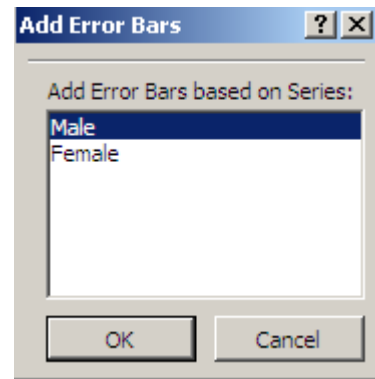
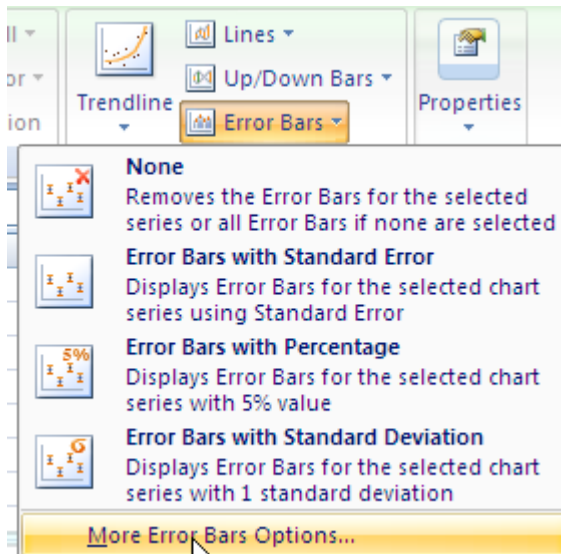
In APA format, the legend is within the figure rather than on the side as shown. To move the legend, go to Layout, Legend, and More Legend Options. A new menu will come up. Under Legend Options, uncheck the box “Show the Legend without Overlapping the box”. Then you can drag the legend where you want.



Your figure should now look like the following.

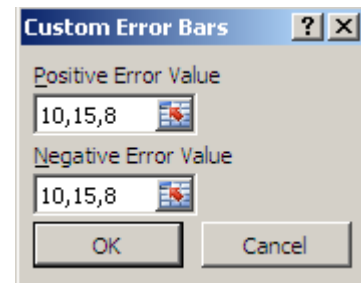
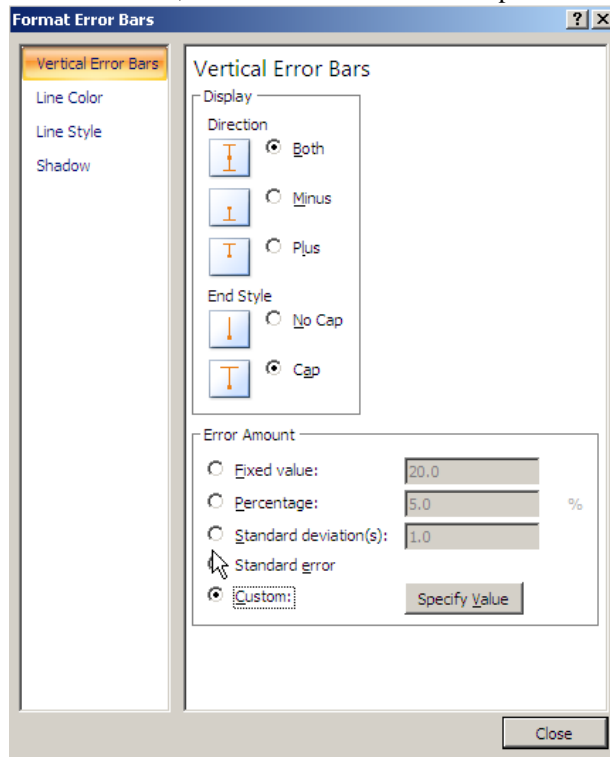


Next you need to add error bars. First, go to Layout and in the Analysis section, there is Error Bars. On the pull down menu, select More Error Bars Options.

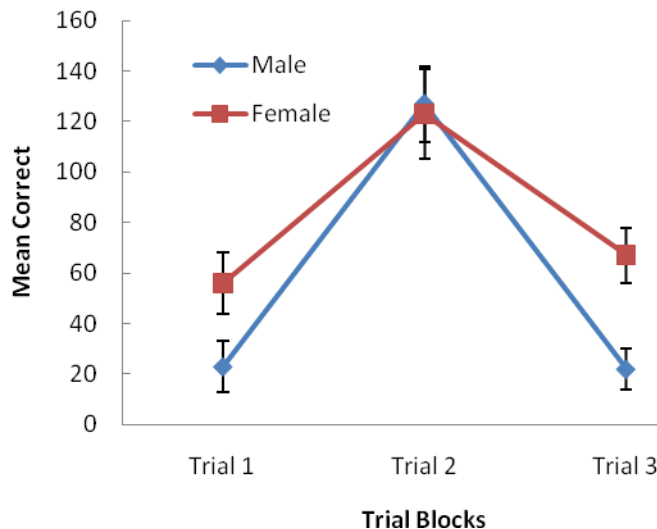


A new box will open with one series (in this example, it is male) highlighted. Click on OK.

A new box will open with Vertical Error Bars Highlighted. Since we want the error bars to show above and below the mean, click on Both and on End Cap. Then click on Custom.



When you click on Specify Value, a new box opens that allows you to enter the standard deviations for the points in that series. The SD (for males) for Trial Block 1 was 10, for 2 it was 15, and for 3 it was 8. Enter those numbers in series separated by commas. Remember, that the SDs have to be entered twice: once for above the mean and once for below. Click OK and the error bars will appear. Now you need to do the same for the second series (female). Here assume that the SDs were 12, 18, and 11. You have to first click on the figure and then go to error bars to bring up the window where you can highlight Female. From there, the procedure is the same. Finally, you need to type a title for your figure, using correct APA format, under the figure. Now your figure should look like this.



*Figure 1.* Mean correct responses as a function of gender and trial block. Error bars represent standard deviations.

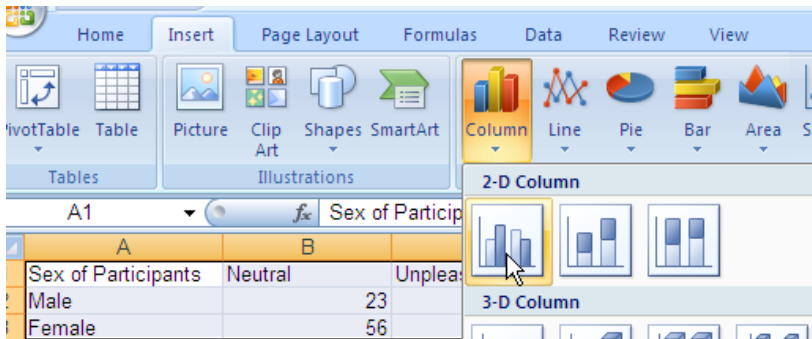


## Bar Charts

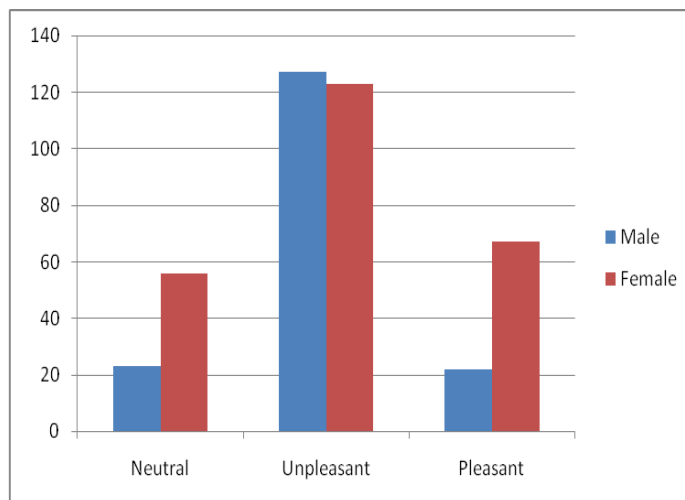
When your variables are categorical, you need to produce a bar chart rather than a line graph. Using the example above, with some slight changes, let us assume that the study examined the effect of gender and type of stimulus material (neutral, unpleasant, and pleasant) on reaction time. We begin by entering the means on an Excel spreadsheet with the appropriate labels.

	A	B	C	D	E
1	Sex of Participants	Neutral	Unpleasant	Pleasant	
2	Male	23	127	22	
3	Female	56	123	67	

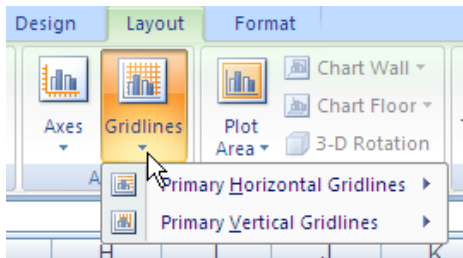
Highlight the information you need. Click on the Insert tab and then on the type of chart you want (Column since the variables are categorical). Chose a 2- D style .



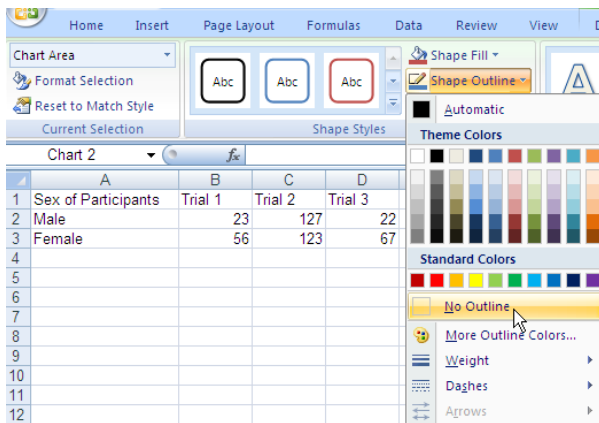
At this point your figure should look like this.



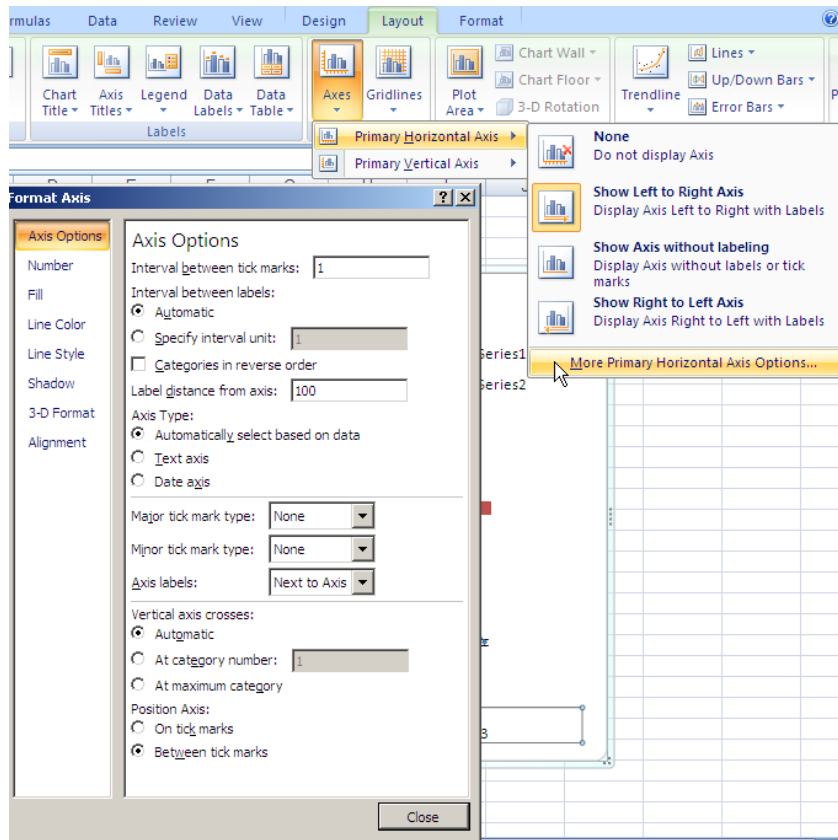
First we'll remove the gridlines. Click on Layout, Gridlines, Primary Horizontal Gridlines, and None.



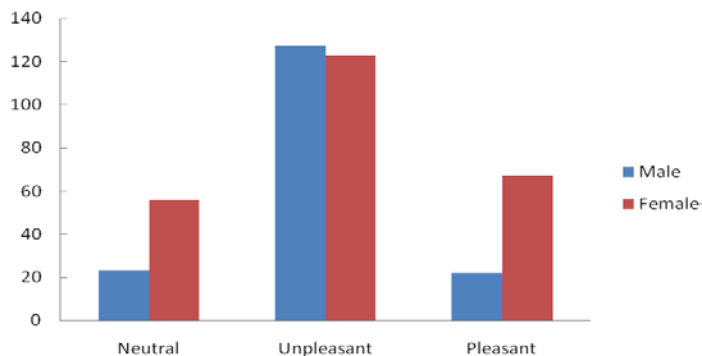
The next step is to remove the border around the figure. To do that, click on Format. Under Shape Styles, click on Shape Outline and then No Outline.



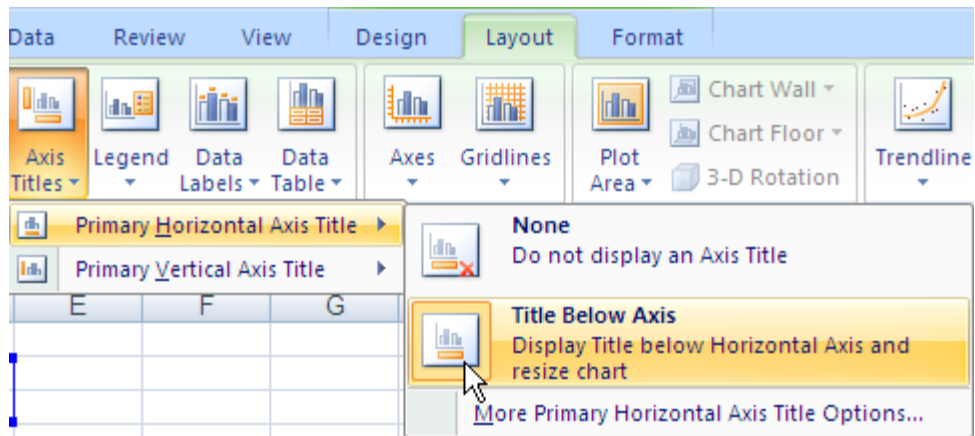
Now we'll remove the ticks on the X axis. Under Layout, click on Axes, Primary Horizontal Axis, and More Primary Horizontal Axis Options. That will bring up a new box labeled format axis. Under axis options, there is a box for major tick marks. Indicate None and click on close.



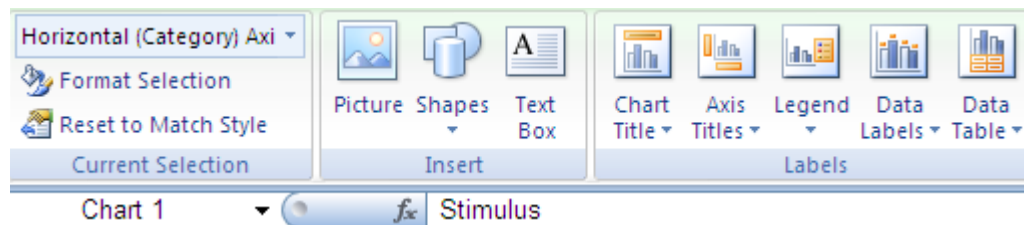
On the Y axis you want the tick marks but they should be inside marks, rather than outside marks. Under Layout, click on Axes, Primary Vertical Axis, and More Primary Vertical Axis Options. That will bring up a new box labeled format axis. Under axis options, there is box for major tick marks. Indicate Inside and click on close. Now your figure should look like this.



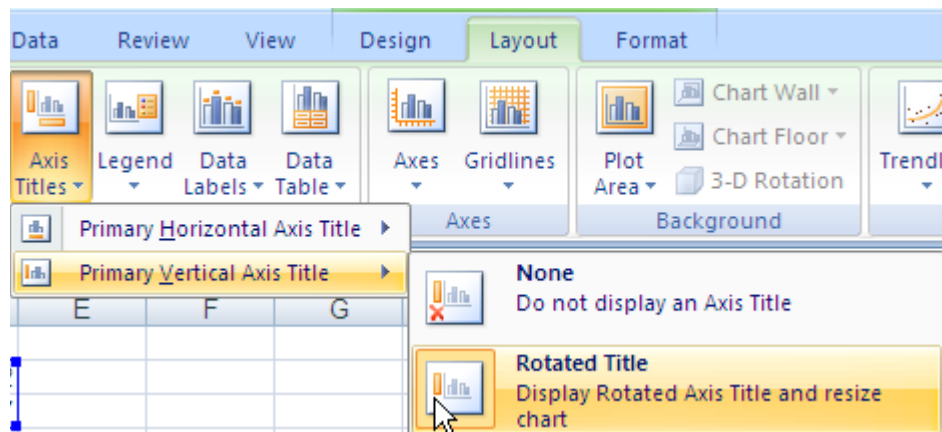
Now we want to add labels to the X and Y axes. Go to Layout and click on Axis Titles. For the X axis, click on Primary Horizontal Axis and then Title Below Axis.



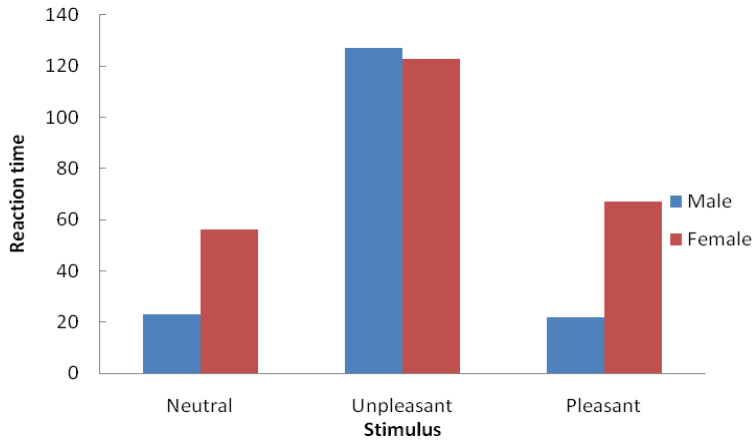
A box will open up below the X axis. Type the label, Stimulus, in the Formula Bar and hit enter.



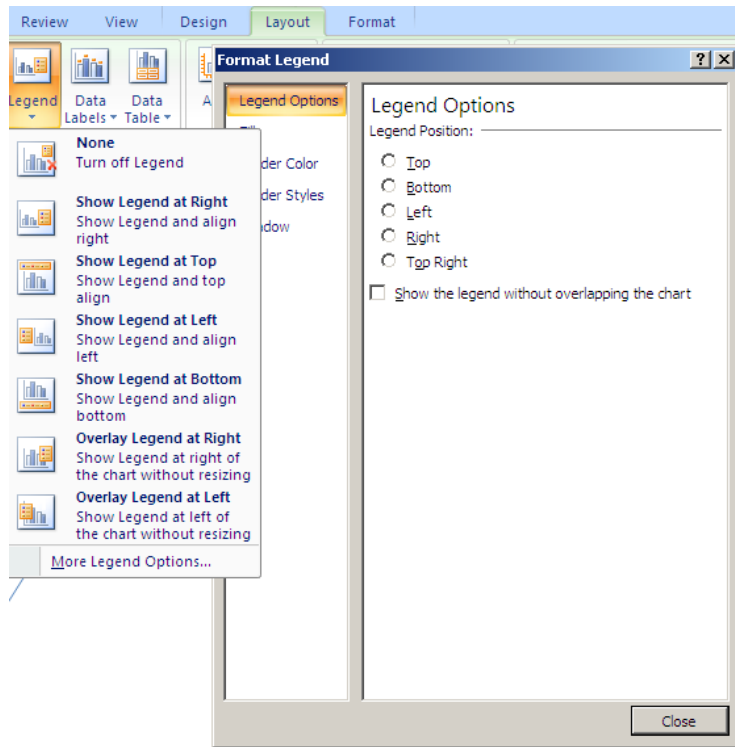
It is the same procedure for the vertical axis. Select the Rotated Title option.



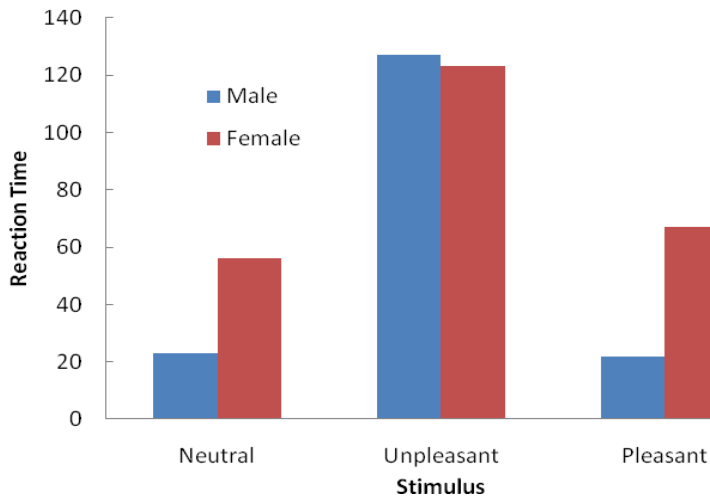
Here the label should be Reaction Time. When you are finished, the figure should look like the figure below.



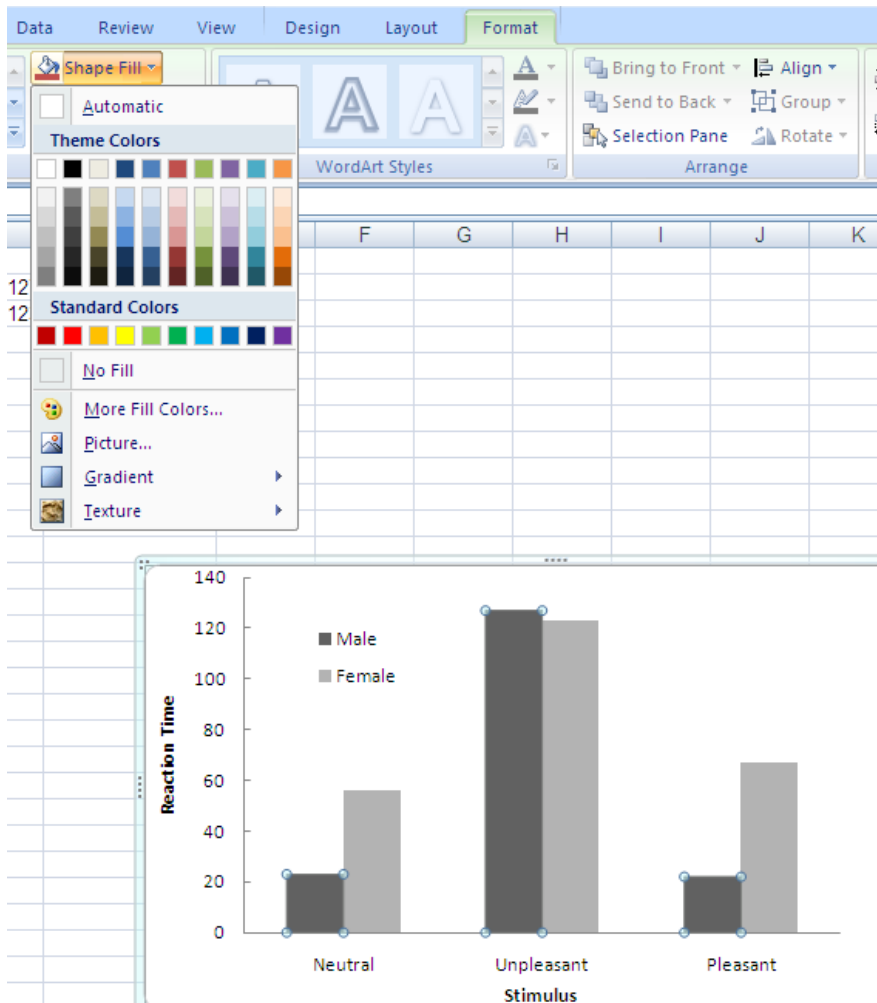
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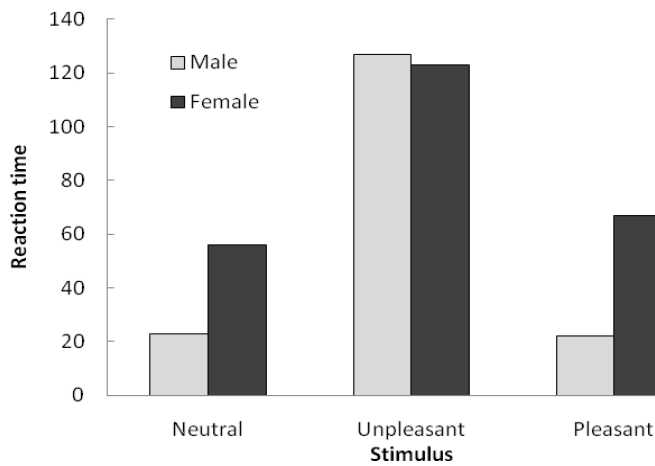
Then you can drag the legend where you want. Your figure should now look like the following.



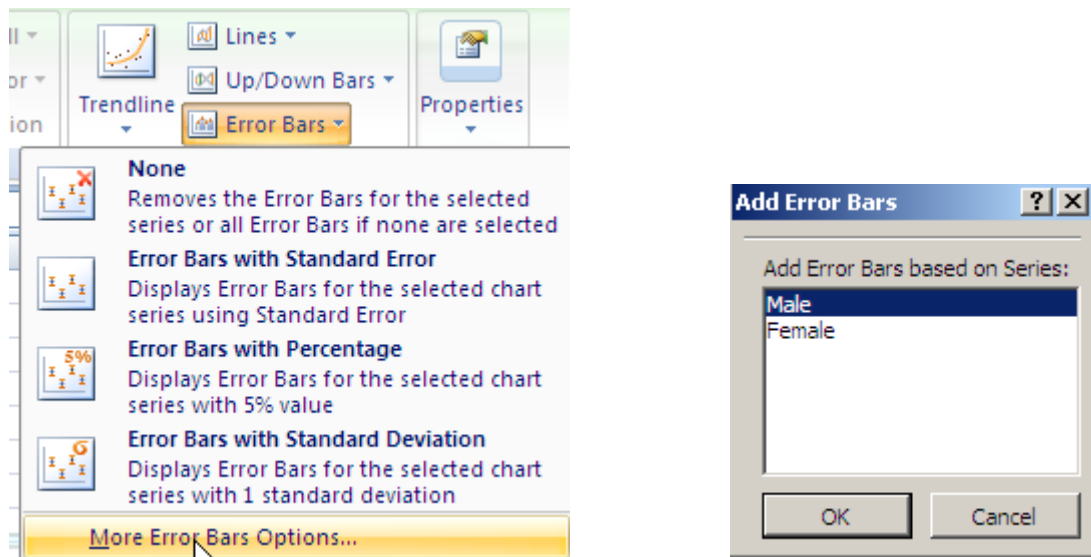
While the computer shows the bars in color, generally figures are printed in black and white. Therefore, it is usually necessary to modify the bars so that they can be easily read. To change the fill, first click on the series (male or female) that you want to change. Then go to Format and Shape Fill under category Shape Styles.



You can click on Colors, Gradient, or Textures depending on the effect you want. Make certain that what you do provides good contrast, even in black and white. It is also helpful to use the Shape Outline function to provide a border around the bar. At this point, your figure should look like this.

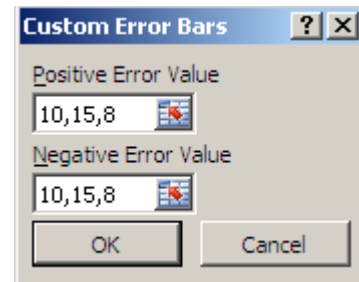
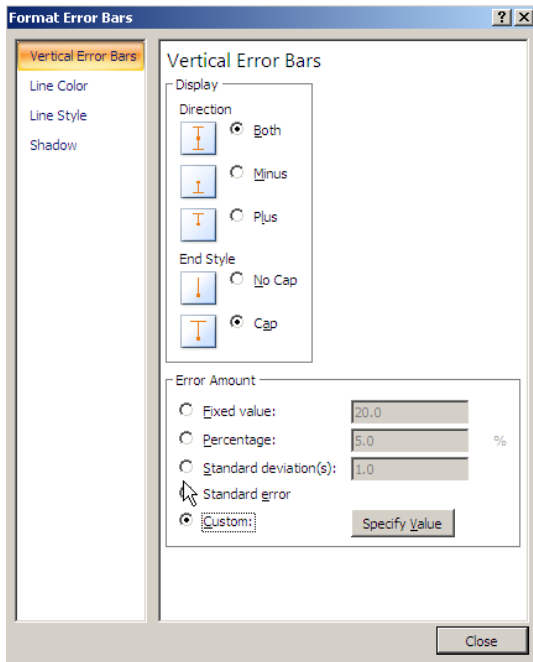


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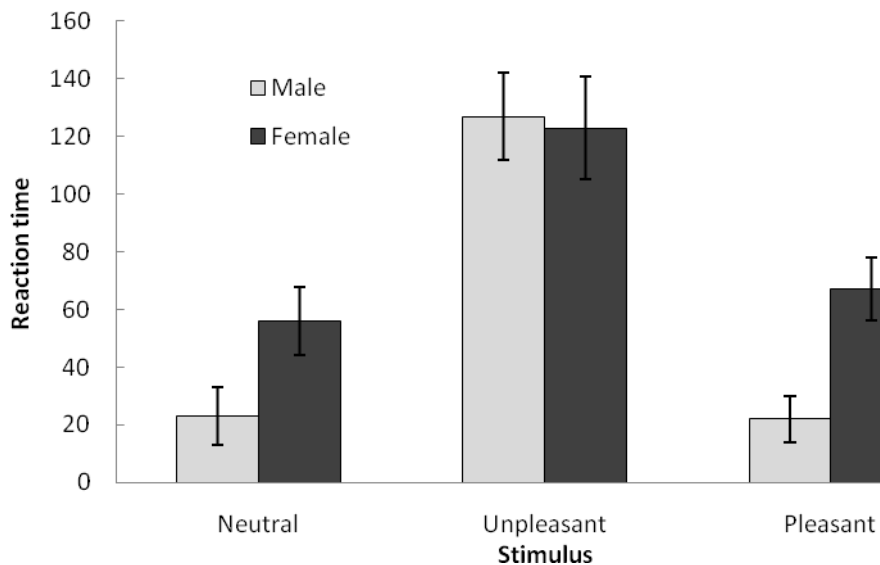


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*Figure 1.* Mean correct responses as a function of gender and trial block. Error bars represent standard deviations. Note: Lower numbers indicate slower reaction times.