Contingency table (χ^2 = Chi-Square), Scatterplot, Boxplots, Logistic Regression
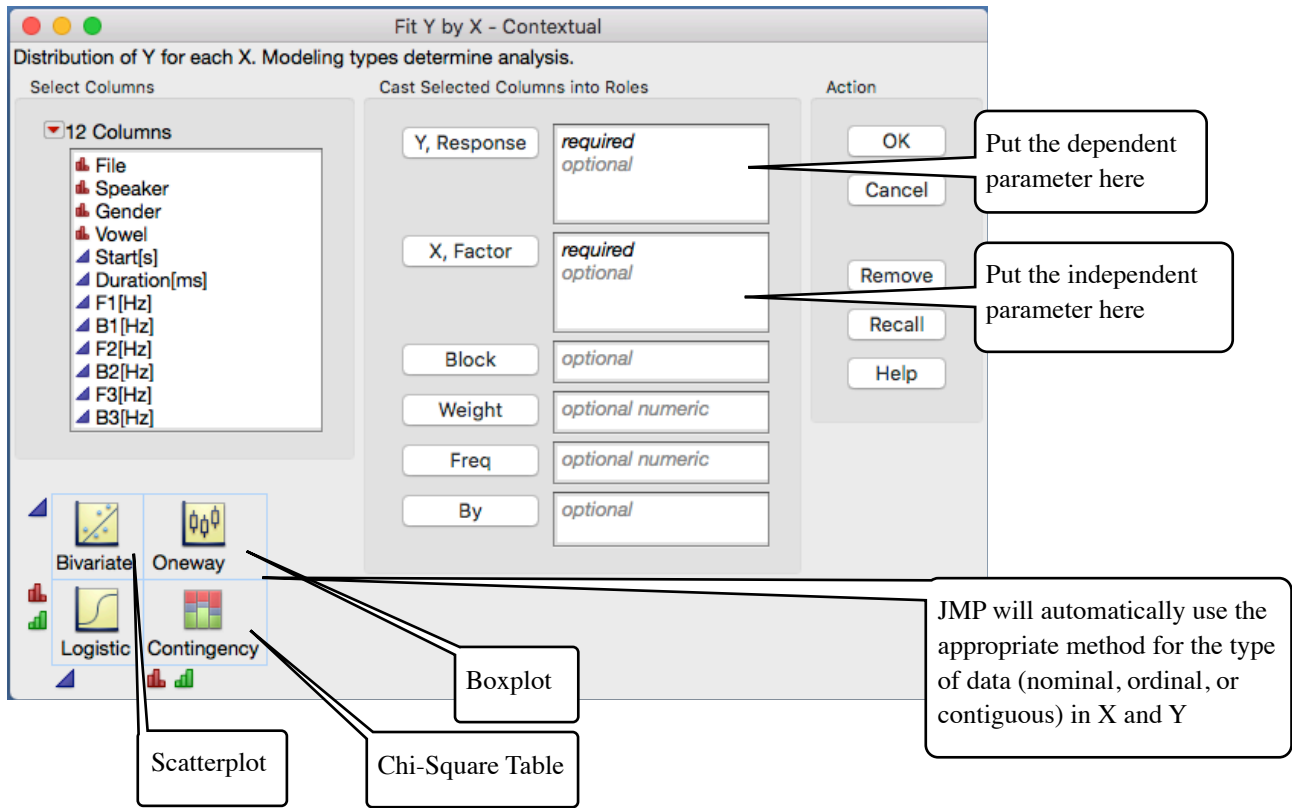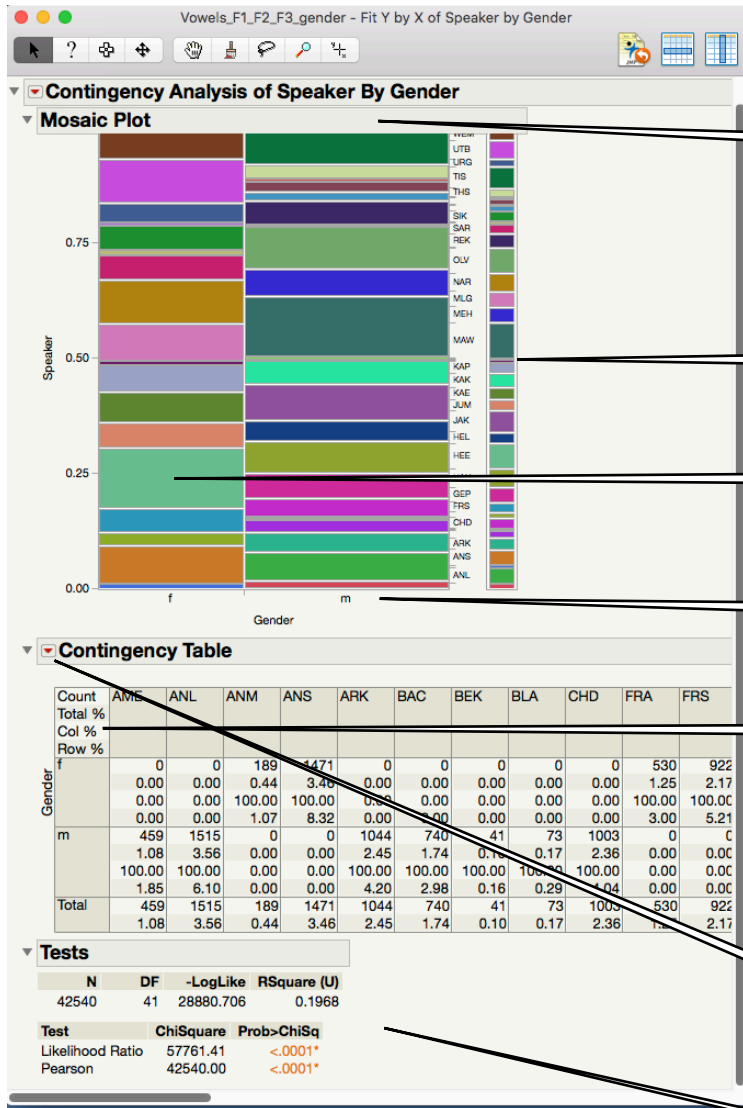
Allthese methods try describe the dependencies between two parameter, and in JMP they are gathered under the *Analyze → Fit Y by X* entry:

Note that the output looks usually different, depending of what is chosen as 'X' (independent, 'given' variable) and as 'Y' (dependent variable: how does 'X' influence/determine (in a statistical way) 'Y'?).

Contingency table (χ^2 = Chi-Square)

The 'Mosaic Plot' assigns for every instance of variable a color and a field whose size reflects the number of cases of the variable.

This 'Mosaic Plot' has 'm' and 'f' together, i.e. it shows the relative size of an instance in relation to the whole data set.

This 'f' instance has many cases, so the field is larger.

There are more 'm' than 'f' Genders, so the 'm' fields are wider.

These are the *counts*, who often an instance of a variable appears in the data set, its relative percentage to the *total* of all data, % relative within a *column* and % relative within a *row*.

Here you can select what data should be displayed in a the table and which tests should be performed.

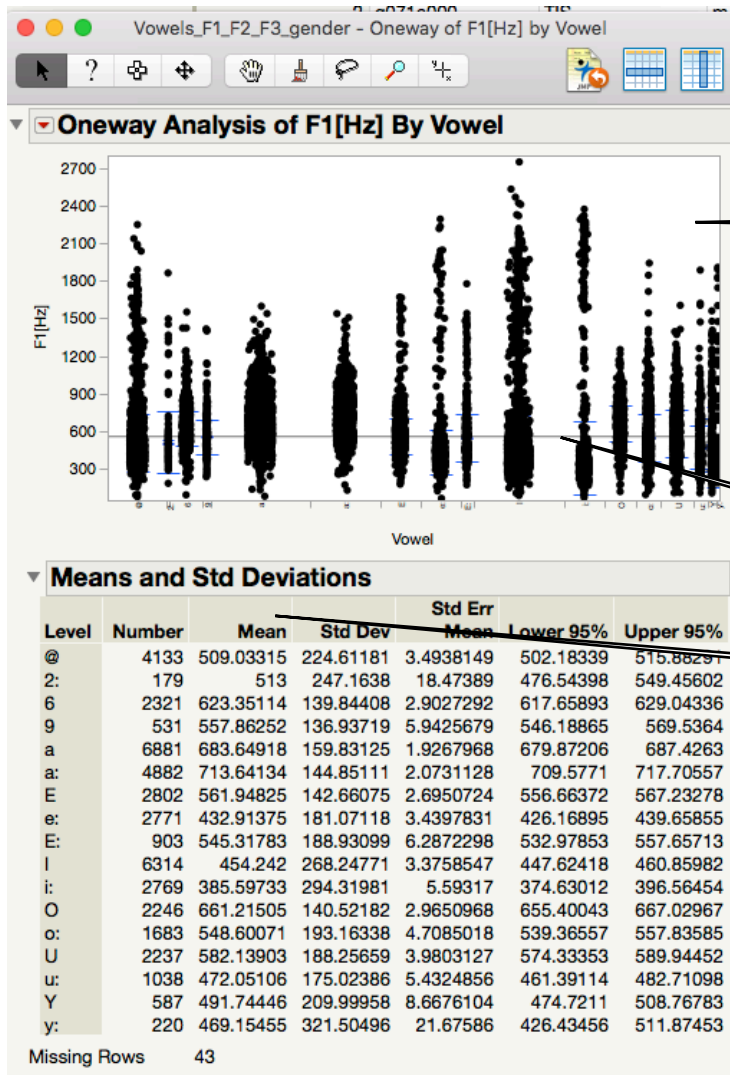χ^2 statistics for the data.

Scatterplot
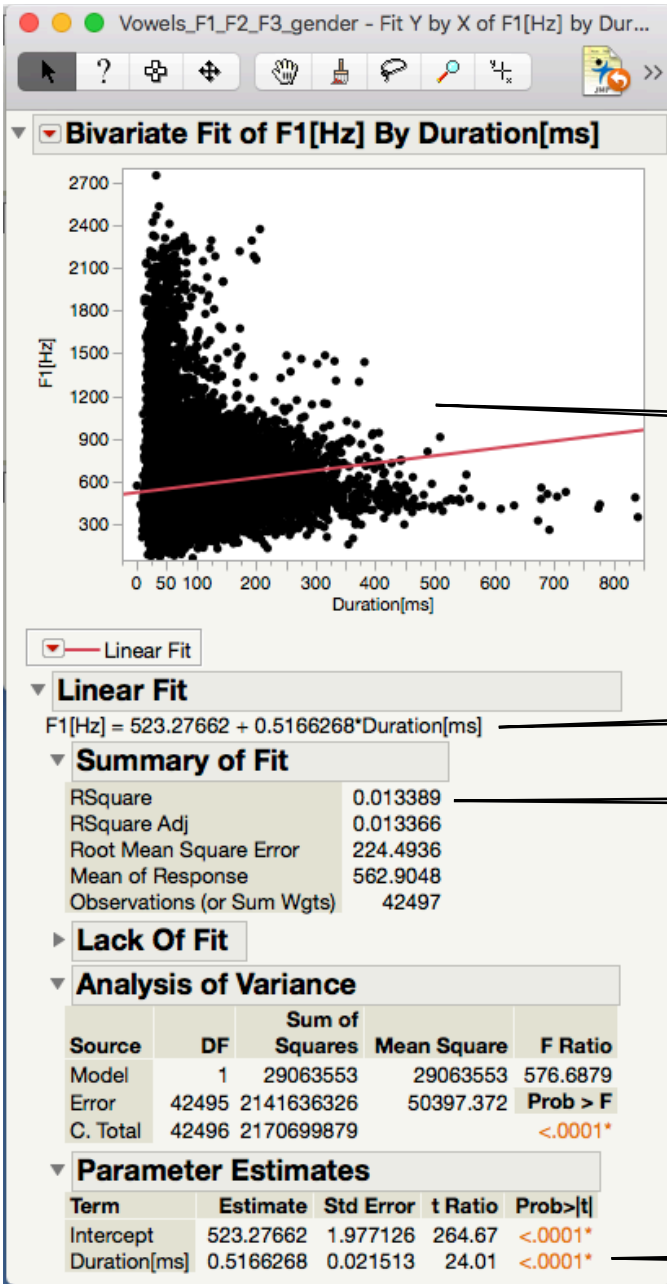
Scatterplot with a regression line (selected from the red triangle 'Fit Line' option: How does F1[Hz} depend on Duration[ms]?)

Linear equation of the regression line.

The fit of the regression line is only 1.33%…

…but there is a highly significant correlation between Duration and F1.

Boxplot

Oneway Analysis of F1[Hz] By Vowel
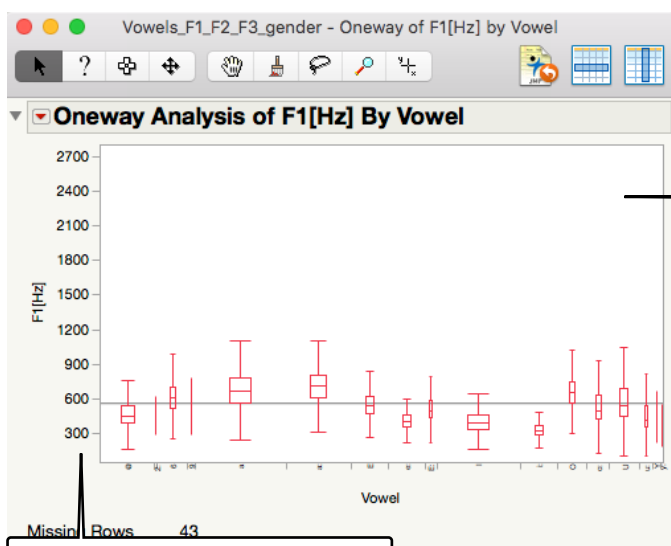
This is not a boxplot, but the distribution of the datapoints for each variable on the x-axis; the width of the x-axis is proportional to the amount of data and the option *Display Option → Points Jittered* was selected from the red *Option* triangle.

This line is the *Grand Mean* of all data.

Means and Std Deviations

Level	Number	Mean	Std Dev	Std Err Mean	Lower 95%	Upper 95%
@	4133	509.03315	224.61181	3.4938149	502.18339	515.88291
2:	179	513	247.1638	18.47389	476.54398	549.45602
6	2321	623.35114	139.84408	2.9027292	617.65893	629.04336
9	531	557.86252	136.93719	5.9425679	546.18865	569.5364
a	6881	683.64918	159.83125	1.9267968	679.87206	687.4263
a:	4882	713.64134	144.85111	2.0731128	709.5771	717.70557
E	2802	561.94825	142.66075	2.6950724	556.66372	567.23278
e:	2771	432.91375	181.07118	3.4397831	426.16895	439.65855
E:	903	545.31783	188.93099	6.2872298	532.97853	557.65713
I	6314	454.242	268.24771	3.3758547	447.62418	460.85982
i:	2769	385.59733	294.31981	5.59317	374.63012	396.56454
O	2246	661.21505	140.52182	2.9650968	655.40043	667.02967
o:	1683	548.60071	193.16338	4.7085018	539.36557	557.83585
U	2237	582.13903	188.25659	3.9803127	574.33353	589.94452
u:	1038	472.05106	175.02386	5.4324856	461.39114	482.71098
Y	587	491.74446	209.99958	8.6676104	474.7211	508.76783
y:	220	469.15455	321.50496	21.67586	426.43456	511.87453

Missing Rows   43

Means and Std Dev was selected from the red *Option* triangle.

Oneway Analysis of F1[Hz] By Vowel

Here, *Display Option → Boxplot* was selected from the red *Option* triangle and *Display Option → Points* was de-selected. Note that the scale goes up to 2700 Hz, because there are datapoints up there (which are not displayed).

Missing Rows   43

By clicking on the scale, the display range can be changed (e.g. 200 Hz to 1200 Hz).