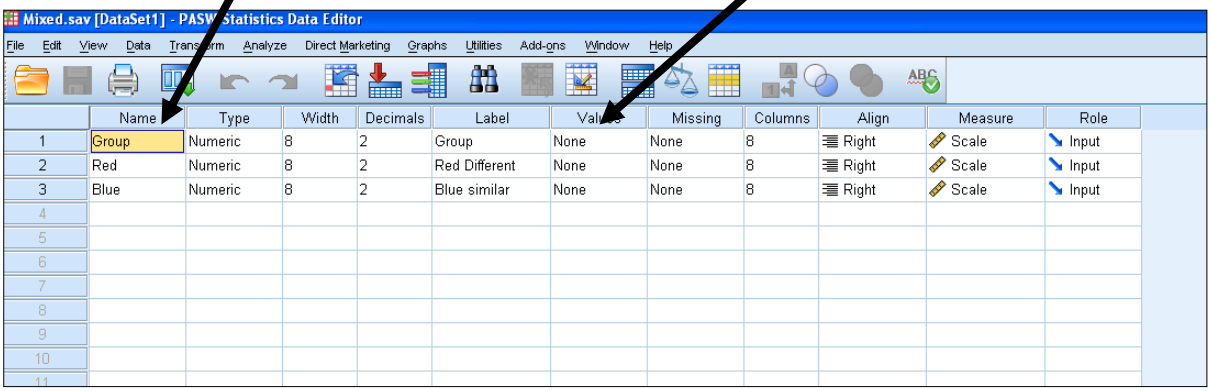
Mixed Design ANOVA

A. Arranging your data

Click on the 'Variable View' window

Give your variables names here. No spaces allowed

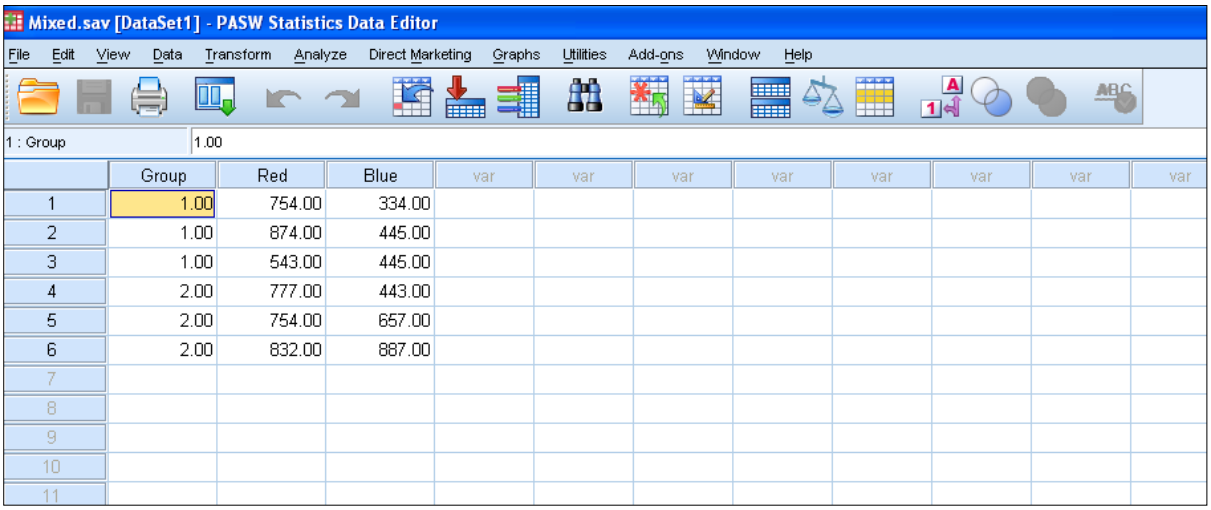
Give your variables values here. For example Gender is 1 male, 2 female.



	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
1	Group	Numeric	8	2	Group	None	None	8	Right	Scale	Input
2	Red	Numeric	8	2	Red Different	None	None	8	Right	Scale	Input
3	Blue	Numeric	8	2	Blue similar	None	None	8	Right	Scale	Input
4											
5											
6											
7											
8											
9											
10											
11											

Click on the 'Data View' window

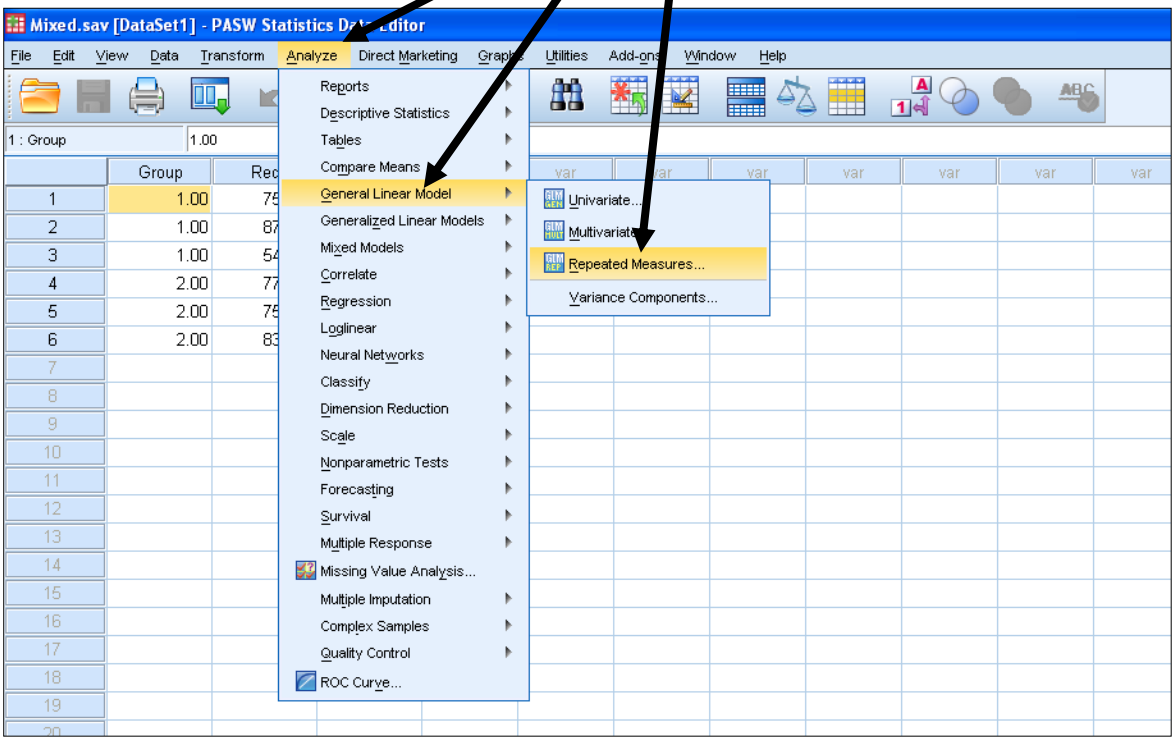
As this is a mixed design, you need to define the between subjects factors. Below it is *1 and 2* for group and then enter the data for the within subjects factor, which is *red and blue*.



	Group	Red	Blue	var	var	var	var	var	var	var	var
1	1.00	754.00	334.00								
2	1.00	874.00	445.00								
3	1.00	543.00	445.00								
4	2.00	777.00	443.00								
5	2.00	754.00	657.00								
6	2.00	832.00	887.00								
7											
8											
9											
10											
11											

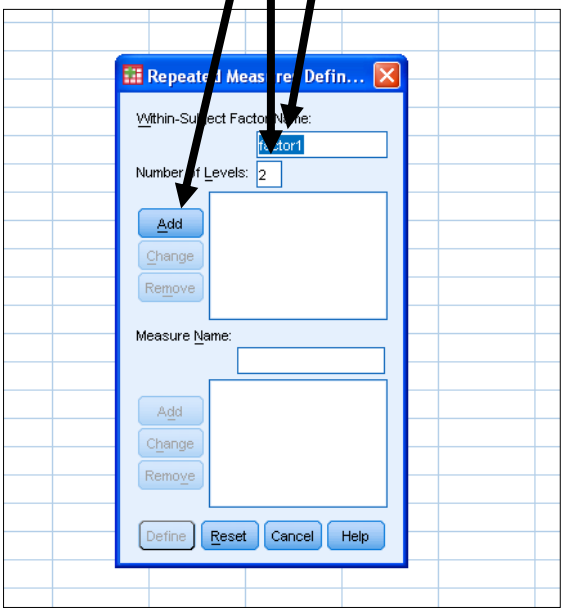
B. Running the ANOVA

Go to **'Analyse'** across the top. **'General Linear Model'** and **'Repeated Measures'**

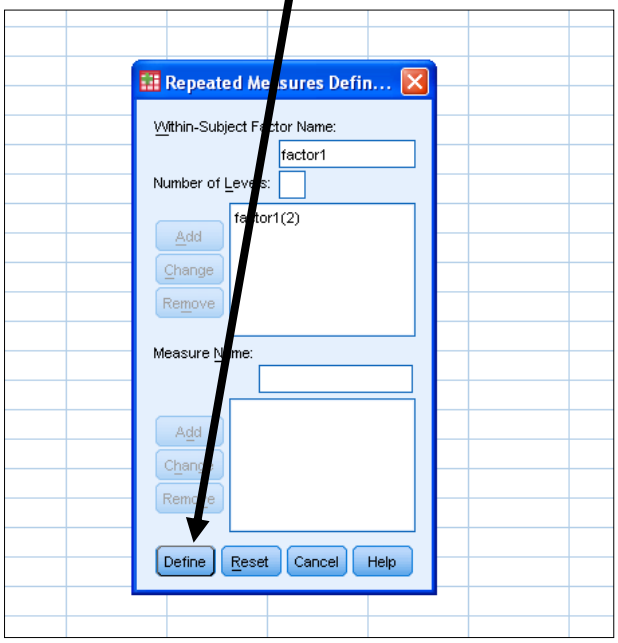


You will then see a box appear which looks like the one below

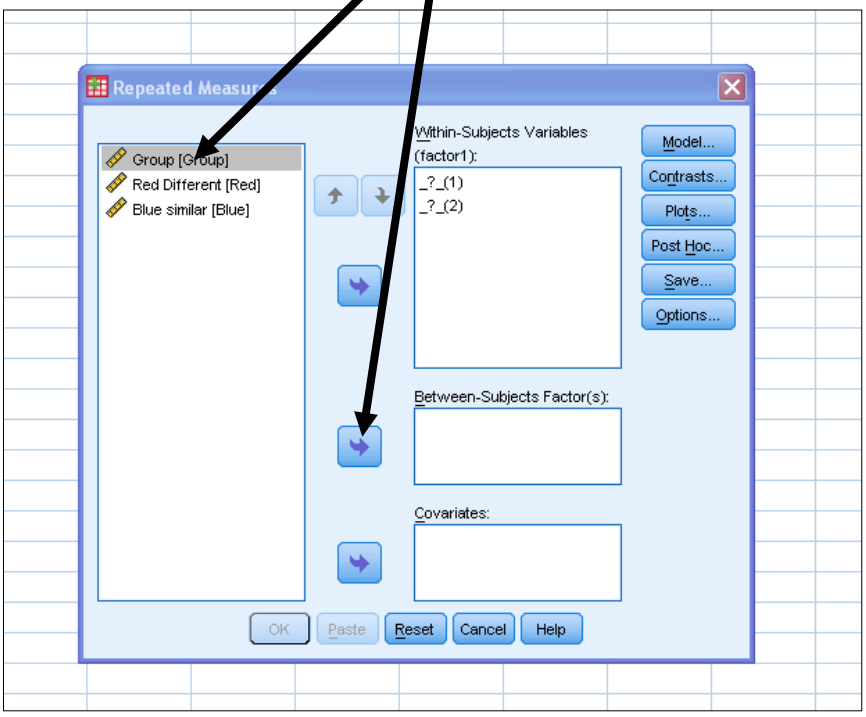
Double click where it says factor 1 and give the variable a name. In this case it is 'Colour' with '2' levels. Then click 'Add'



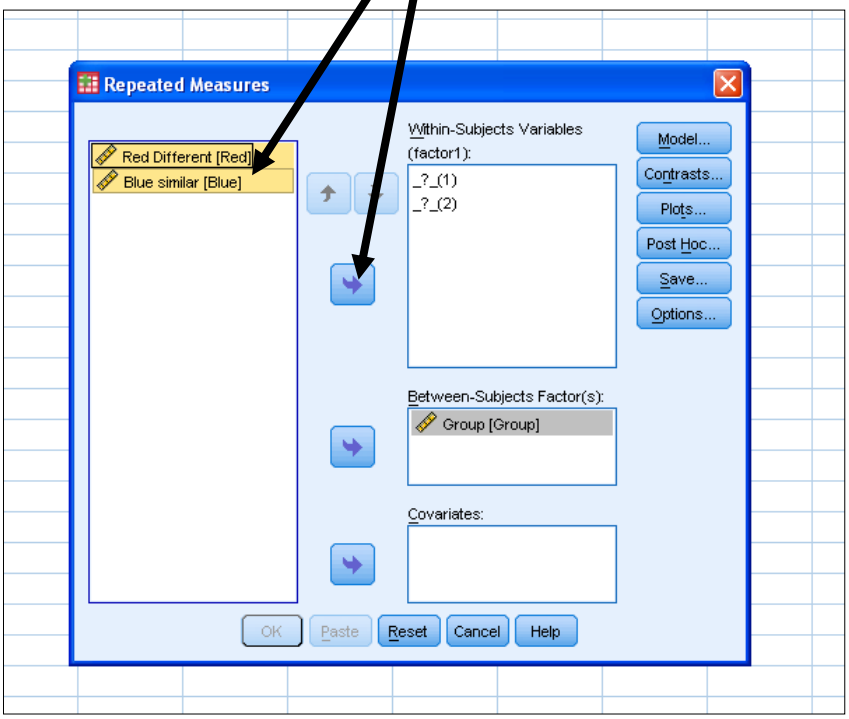
Click 'Define' to get to the next screen



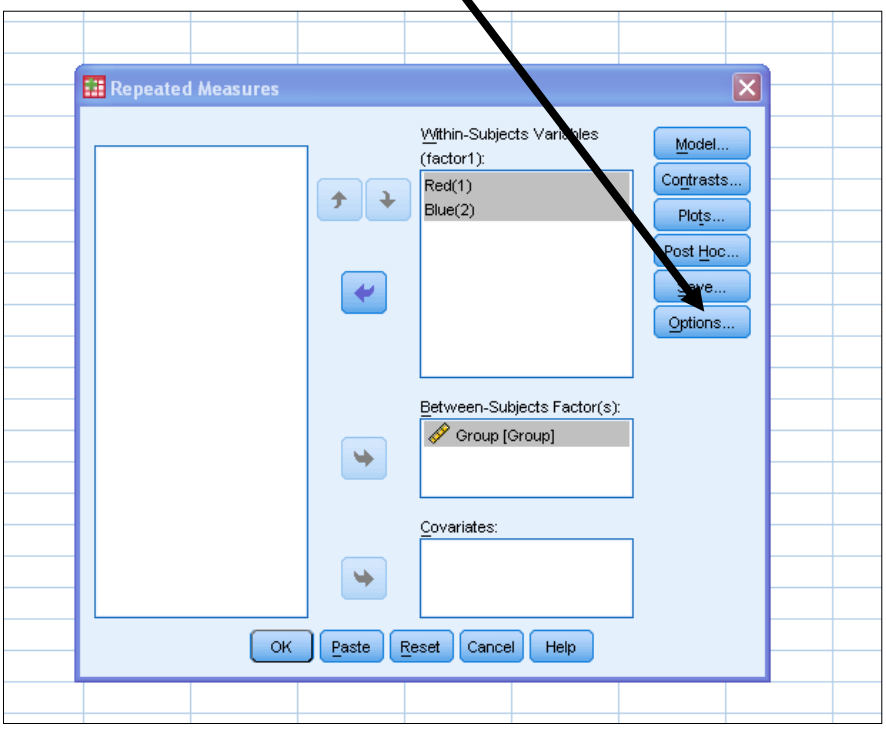
Highlight *Group* and move to the Between Subjects Factor box using the arrow



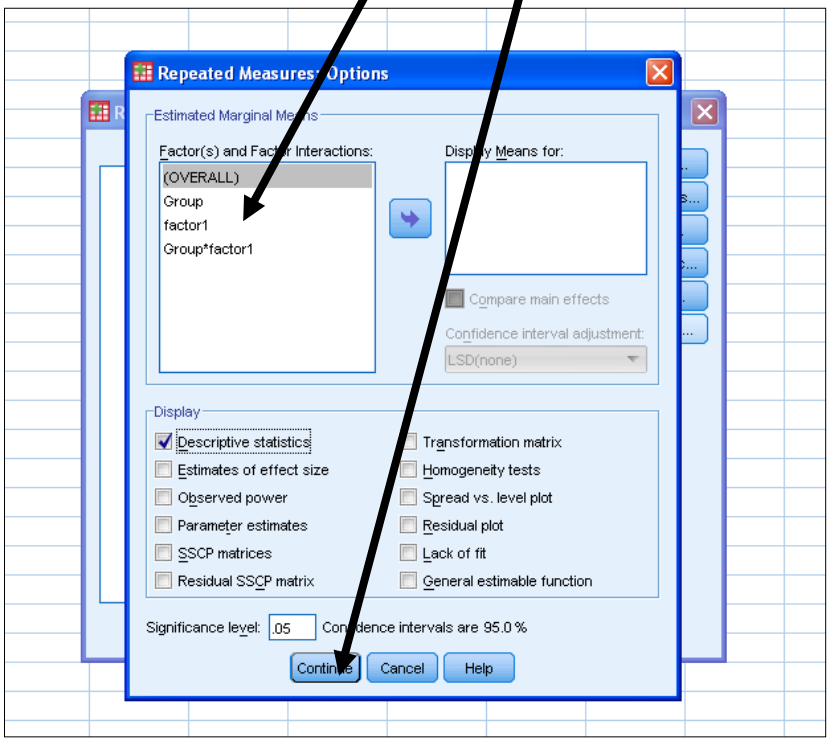
Highlight the within subjects factors, in this case *red and blue* and move to the within subjects variables box using the arrow



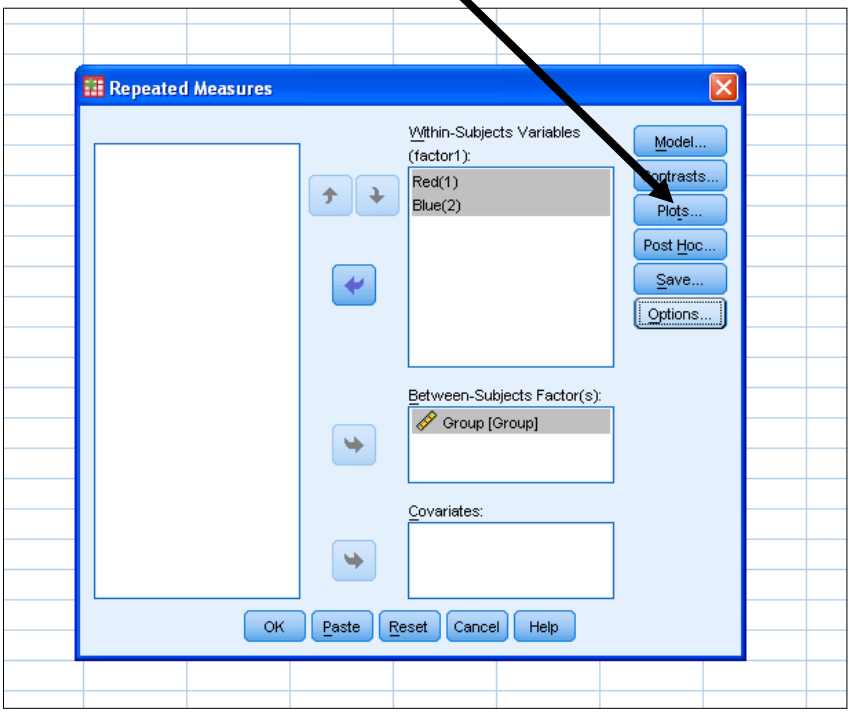
You will then see this screen. Click on 'Options'



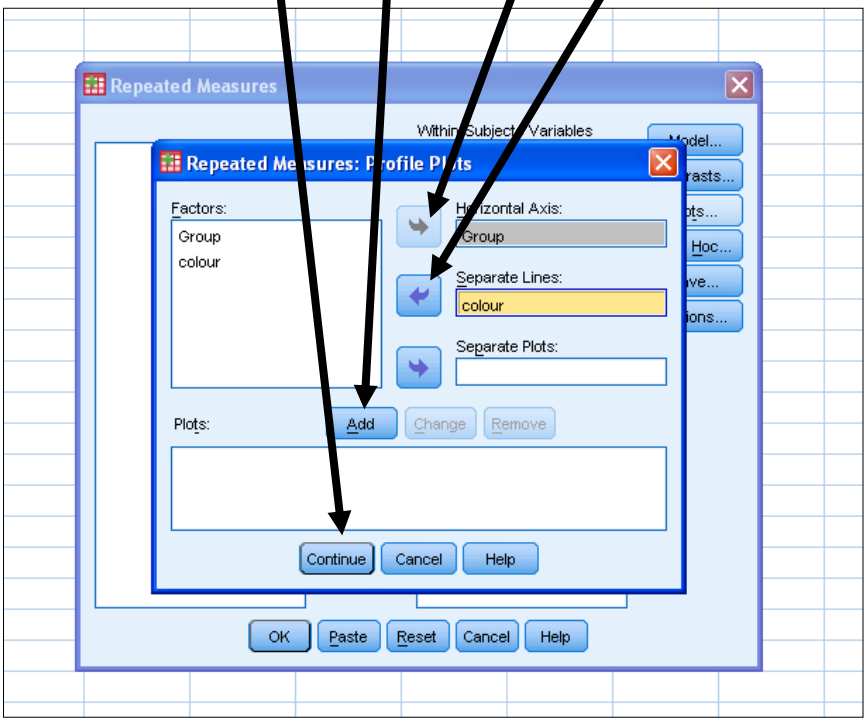
Highlight the variables for which you want the means displayed and move them across with the arrow button. Click 'Continue'



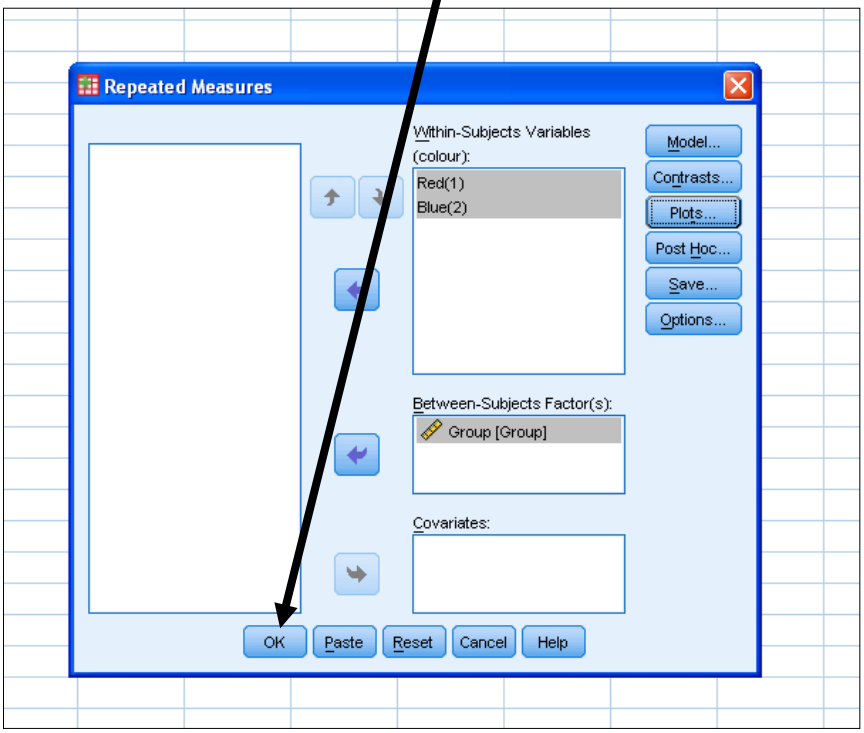
Click the 'Plots' box



Move *Group to the* Horizontal Axis box and *Gender* to the Separate Lines box. Click Add and 'Continue'



Back to this screen and click on 'OK'



The Output

On this part of the output, look at the table of means, labelled Descriptive Statistics

Descriptive Statistics

	Group	Mean	Std. Deviation	N
Red Different	High	723.6667	167.57188	3
	Low	787.6667	40.07909	3
	Total	755.6667	114.47037	6
Blue similar	High	408.0000	64.08588	3
	Low	662.3333	222.04804	3
	Total	535.1667	201.91723	6

The next table shows you the within subjects effects (colour) and an interaction (colour*group).

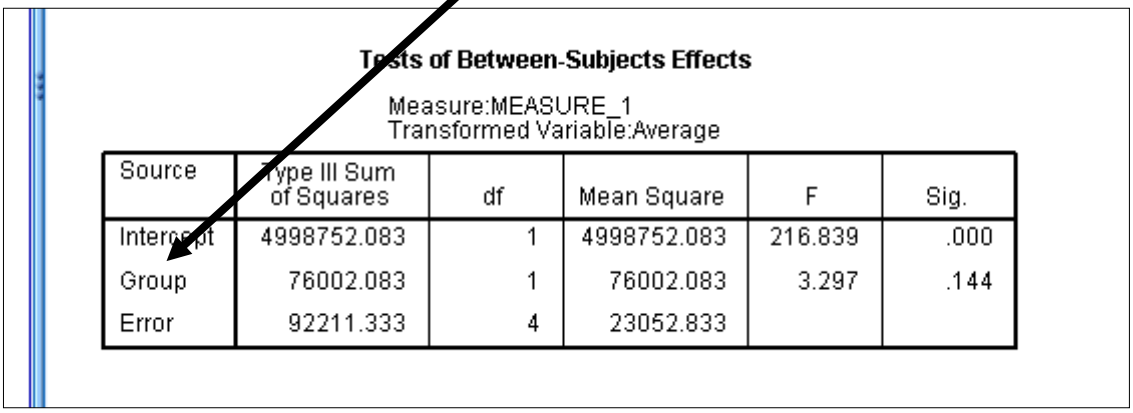
Look for the main effect, which is colour, and the interaction effect (colour*group)

Tests of Within-Subjects Effects

Measure:MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
colour	Sphericity Assumed	145860.750	1	145860.750	7.886	.048
	Greenhouse-Geisser	145860.750	1.000	145860.750	7.886	.048
	Huynh-Feldt	145860.750	1.000	145860.750	7.886	.048
	Lower-bound	145860.750	1.000	145860.750	7.886	.048
colour * Group	Sphericity Assumed	27170.083	1	27170.083	1.469	.292
	Greenhouse-Geisser	27170.083	1.000	27170.083	1.469	.292
	Huynh-Feldt	27170.083	1.000	27170.083	1.469	.292
	Lower-bound	27170.083	1.000	27170.083	1.469	.292
Error(colour)	Sphericity Assumed	73986.667	4	18496.667		
	Greenhouse-Geisser	73986.667	4.000	18496.667		
	Huynh-Feldt	73986.667	4.000	18496.667		
	Lower-bound	73986.667	4.000	18496.667		

Look for the main effect, which is group.

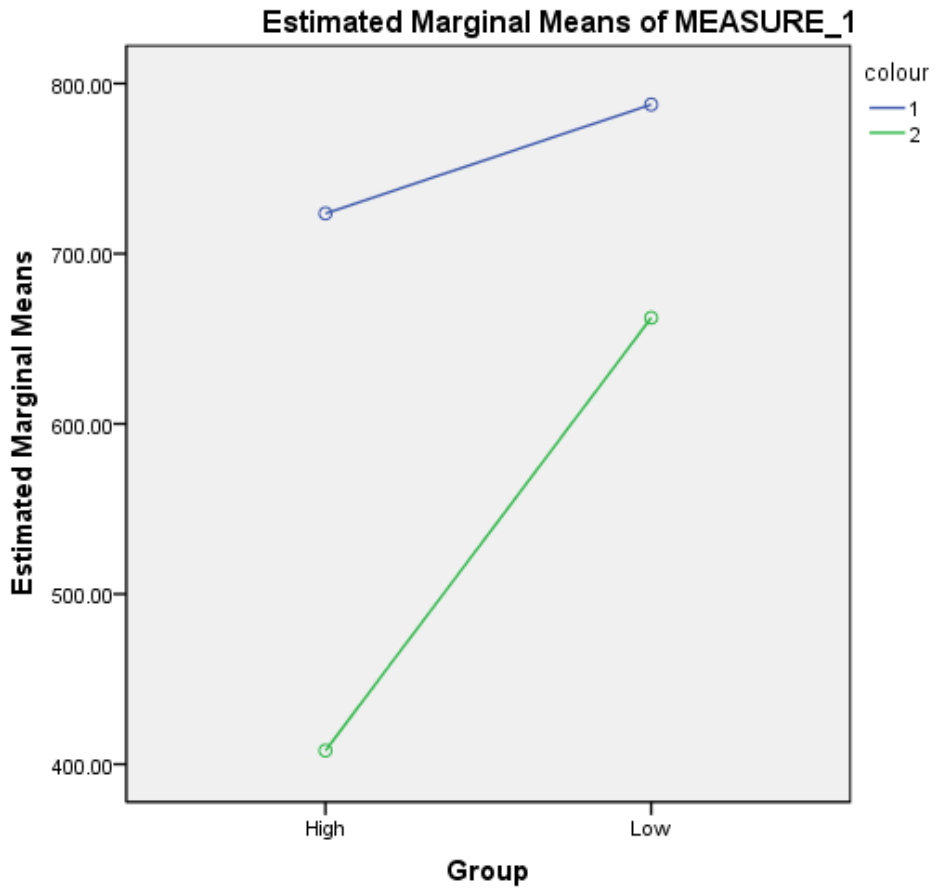


Tests of Between-Subjects Effects

Measure:MEASURE_1
Transformed Variable:Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	4998752.083	1	4998752.083	216.839	.000
Group	76002.083	1	76002.083	3.297	.144
Error	92211.333	4	23052.833		

Profile Plots



At the bottom of the output you should find a plot, which gives a graphical indication of the results