Chapter 14: Repeated-measures designs

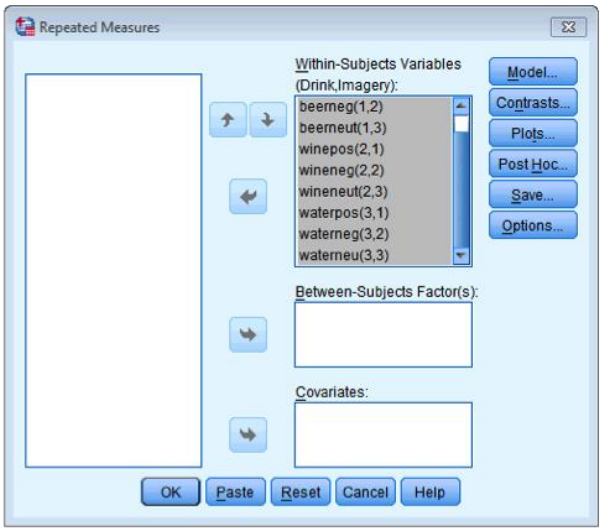
Self-test answers

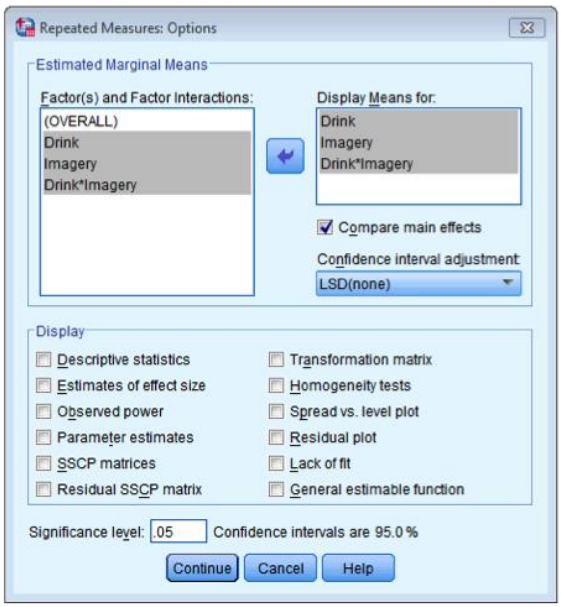
SELF-TEST What is a repeated-measures design?

Repeated-measures is a term used when the same entities participate in all conditions of an experiment.

SELF-TEST Try rerunning these *post hoc* tests but select the uncorrected values (LSD) in the *Options* dialog box (see Section 13.8.5). You should find that the difference between beer and water is now significant (p = .02).

The dialog boxes should look like this:





The output from the *post hoc* tests for drink looks like this:

Pairwise Comparisons

Measure:MEASURE_1

(I) Drink	(J) Drink	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
1	2	3.500	2.849	.234	-2.464	9.464
	3	8.317*	3.335	.022	1.336	15.297
2	1	-3.500	2.849	.234	-9.464	2.464
	3	4.817*	1.116	.000	2.480	7.153
3	1	-8.317*	3.335	.022	-15.297	-1.336
	2	-4.817*	1.116	.000	-7.153	-2.480

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

*. The mean difference is significant at the .05 level.

The difference between beer and water is now significant (p = .02).

SELF-TEST Why do you think that this contradiction has occurred?

It's because the contrasts have more power to detect differences than post *hoc* tests.