TechNote 15.1

Using SPSS in an *SxAxB* Design with *S* and *B* Random

SPSS can calculate F_1' if each score is entered as a separate case (as in a between-subjects design). Figure TN15.1 illustrates the input using the file *FontUni* which is a restructuring of the *Font_S* file . Using the SPSS menus,

1. Select *Analyze*, then *General Linear Model*, then *Univariate.*
2. In the dialogue box that appears, drag *item* and *subject* to the box labeled *Random Factor(s)*; drag *font* to the box labeled *Fixed Factor(s)*; and drag *RT* to the *Dependent Variable* box.
3. Select any additional analyses (e.g.., profile plot, contrasts) or options (e.g., cell means), then select *OK.*

Table TN15.1 shows a portion of the output. Note that the F for *font* and the error degrees of freedom are the same as we calculated in Table 15.13.

Note: SPSS deletes any case that has missing scores. If there are very few such cases, the results may not be markedly affected. However, in many experiments, it is not unusual to have several cases with missing cases. In such situations, it is better to use all the available data to calculate *minF'* (see Section 15.6.5 and *TechNote 15.2*).

Figure TN15.1 Sample Input to SPSS's Univariate Analysis Program

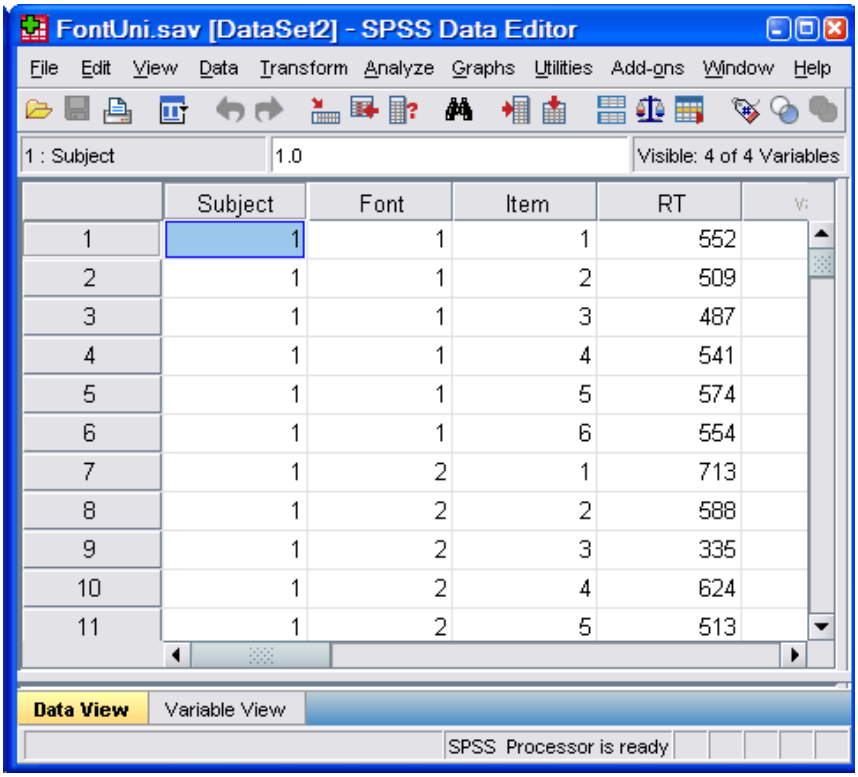

Table TN15.1 ANOVA Table from SPSS *Univariate* Module

Tests of Between-Subjects Effects

Dependent Variable: RT

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	Hypothesis	4.140E7	1	4.140E7	515.811	.000
	Error	463863.911	5.779	80262.332[a]		
Font	Hypothesis	34846.260	1	34846.260	11.448	.132
	Error	4034.687	1.326	3043.832[b]		
Subject	Hypothesis	602282.156	7	86040.308	4.330	.003
	Error	483836.399	24.351	19869.458[c]		
Item	Hypothesis	74839.052	5	14967.810	.781	.574
	Error	433765.506	22.630	19167.334[d]		
Font * Subject	Hypothesis	32355.990	7	4622.284	.841	.562
	Error	192451.448	35	5498.613[e]		
Font * Item	Hypothesis	19600.802	5	3920.160	.713	.618
	Error	192451.448	35	5498.613[e]		
Subject * Item	Hypothesis	726102.531	35	20745.787	3.773	.000
	Error	192451.448	35	5498.613[e]		
Font * Subject * Item	Hypothesis	192451.448	35	5498.613	.	.
	Error	.000	0	.[f]		

a. MS(Subject) + MS(Item) - MS(Subject * Item)

b. MS(Font * Subject) + MS(Font * Item) - MS(Font * Subject * Item)

c. MS(Font * Subject) + MS(Subject * Item) - MS(Font * Subject * Item)

d. MS(Font * Item) + MS(Subject * Item) - MS(Font * Subject * Item)

e. MS(Font * Subject * Item)

f. MS(Error)