PARTITION #1
ORTHOGONAL CONTRASTS

$\overline{Y}_{Aj}$ =   6.8   4.6   3.8   2.8   5.6   (Based on data from Handout #3)

	-/-	T1/-	-/T1	T1/T2	T1/T1	Σc_j^2	Interpretation of ψ
ψ_1	1	-1	1	0	-1	4	Effect on learning with and without drug T1
ψ_2	1	1	-1	0	-1	4	Effect on recall with and without drug T1
ψ_3	1	-1	-1	0	1	4	Effect of same versus different state for learn/recall
ψ_4	1	1	1	-4	1	20	Differential effect of T2 relative to other group

$$SS_{\psi_1} = \frac{5[6.8 - 4.6 \_ 3.8 - 5.6]^2}{4} = 0.20$$

$$SS_{\psi_2} = \frac{5[6.8 + 4.6 - 3.8 - 5.6]^2}{4} = 5.00 \qquad \text{Total SS for 4 contrasts = 48.24}$$

$$SS_{\psi_3} = \frac{5[6.8 - 4.6 - 3.8 + 5.6]^2}{4} = 20.00$$

$$SS_{\psi_4} = \frac{5[-4] (2.8) + 6.8 + 4.6 + 3.8 + 5.6]^2}{20} = 23.04$$

Partition #1 source table:

Source	df	MS	F
Mean	1	556.96	415.64*
ψ_1	1	.20	.15
ψ_2	1	5.00	3.73
ψ_3	1	20.00	14.93*
ψ_4	1	23.04	17.19*
S/A	20	1.34	

$F^*(1, 20) = 4.35$

PARTITION #2
ORTHOGONAL CONTRASTS

$\overline{Y}_{Aj}$ = 6.8   4.6   3.8   2.8   5.6

	-/-	T1/-	-/T1	T1/T2	T1/T1	Σc_j^2	Interpretation of ψ
ψ_1'	-4	1	1	1	1	20	Any general effect for drug
ψ_2'	0	1	1	-3	1	12	General T1-T2 difference
ψ_3'	0	1	1	0	-2	6	One dose vs. two doses
ψ_4'	0	-1	1	0	0	2	One dose only learn vs. recall

$$SS_{\psi_1}' = \frac{5[(-4)(6.8) + 4.6 + 3.8 + 2.8 + 5.6]^2}{20} = 27.04$$

$$SS_{\psi_2}' = \frac{5[(-3)(2.8) + 4.6 + 3.8 + 5.6]^2}{12} = 13.07 \qquad \text{Total SS for 4 contrasts} = 48.24$$

$$SS_{\psi_3}' = \frac{5[(-2)(5.6) + 4.6 + 3.8]^2}{6} = 6.53$$

$$SS_{\psi_4}' = \frac{5[3.8 - 4.6]^2}{2} = 1.60$$

Partition #2 Anova source table:

Source	df	MS	F
Mean	1	556.96	415.64*
ψ_1'	1	27.04	20.18*
ψ_2'	1	13.07	9.75*
ψ_3'	1	6.53	4.87*
ψ_4'	1	1.60	1.19
S/A	20	1.34	

$F^*(1, 20) = 4.35$