Souvenirs

Rosemary, 1987; exercises

In Genstat, if you have specified F and G then you can use the dot operator to get F.G. However, there is no way of getting F∨G, so if you need F∨G you will have to specify it explicitly.

Second Orthogonality Criterion (OC2) If OC1 holds within each level of F∨G separately, then F and G are orthogonal.

Example (vii) In Example (v) LEVEL and TYPE are orthogonal.

Third Orthogonality Criterion (OC3) If the proportion of plots (out of the total number of plots) with level i of F and level j of G is equal to

proportion of plots with level i of F × proportion of plots with level j of G

for all levels of F and G, then F and G are orthogonal.

Example (viii) F and G are orthogonal here, where the table shows how many plots have given combinations of levels.

	F	1	2	3
G	1	2	4	2
	2	3	6	3

Fourth Orthogonality Criterion (OC4) F and G are orthogonal if and only if OC3 holds within every level of F∨G.

for all levels of F and G, then F and G are orthogonal.

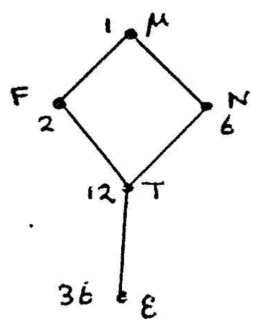
Example (viii) F and G are orthogonal here, where the table shows how many plots have given combinations of levels.

G \ F	1	2	3
1	2	4	2
2	3	6	3

Fourth Orthogonality Criterion (OC4) F and G are orthogonal if and only if OC3 holds within every level of $F \vee G$.

Theorem If a linear model is specified by factors with the property that, if F and G are any two of the factors then F and G are orthogonal and the factor $F \vee G$ is in the model, then the procedure described in I-8 for nested models (using the factor diagram to calculate adjusted figures) still applies.

Example In Problem I-8.1 (iii) the factor diagram is



Each adjusted figure for F is obtained by subtracting the (adjusted) figure for μ from the crude figure for F.
Similarly for N, just subtract the μ figure.
For T, subtract the adjusted figures for μ, F and N from the crude T figure.
For ε, subtract all the previous 4 adjusted figures, i.e. the crude T figure.

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