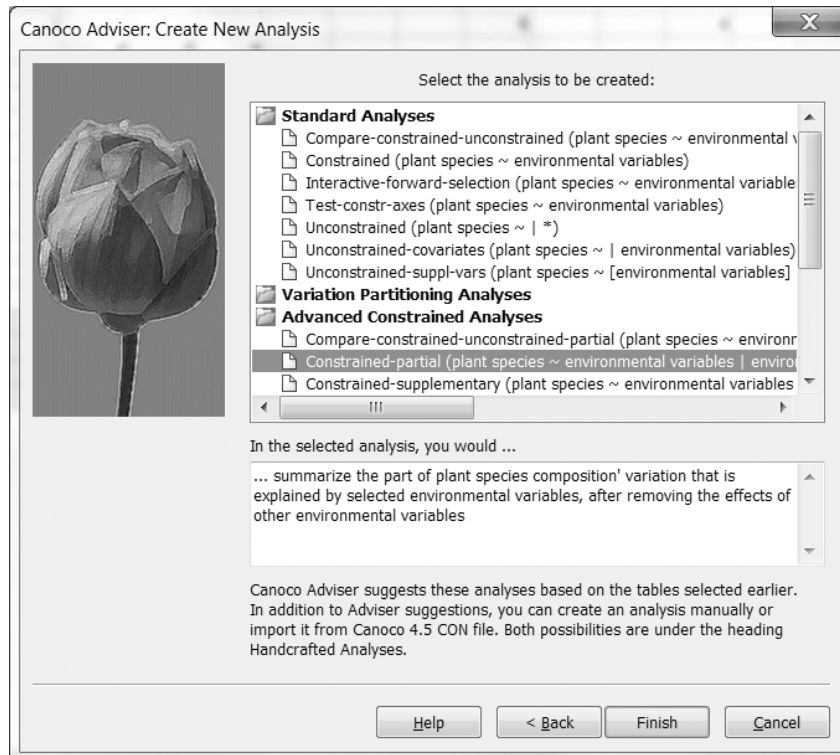


CCA). In partial tests, it is essential to use a pseudo- $F$  ratio statistic (as Canoco does) to ensure a good level-accuracy for the test (i.e. to ensure that the reported  $P$ -value is accurate). In the example analysis, the new sum of canonical eigenvalues is 0.47 (click the *Details* button below the table in *Summary* page to see this directly), the resulting  $F$  ratio is 2.0 and  $P < 0.01$ . In conclusion, there remain systematic differences in vegetation among management types after accounting for the effects of the soil characteristics *Al hor* and *Moisture*.

When creating a partial analysis with the Canoco Adviser (e.g. by clicking the *New* button below the list of analyses), you must select the *Constrained-partial* analysis template that appears after you open the *Advanced Constrained Analyses* folder in the third page of the wizard as illustrated below. In this analysis template, the variables chosen from the same data-table (*Table 2*) as explanatory variables or as covariates are mutually exclusive and their selection proceeds at the very end of the Analysis Setup Wizard sequence.



Management effect is perhaps determined mainly by the amount of manure that is applied. If we also account for the effect of *Manure* (see the *Management 3* analysis), the remaining differences among the management types are no longer statistically significant. Phrased differently, the variables *Al hor*, *Moisture* and *Manure* are in this data-set sufficient to explain the differences in vegetation composition among the management types.

Table 6.1 (top half) gives an example: management type and soil each explain 29% and 25% of the total inertia when taken alone, but together they explain only 48% (inertia is the measure of variance or variation in CA and CCA and is related to the chi-square statistic; see equation (5.37)). Shared variation can be calculated directly by taking the soil variables as covariates (as shown in the lower half of Table 6.1; the 0.1 difference is due to rounding errors). Table 6.2 also shows an alternative way to obtain the shared variation, using the results from the two partial analyses in the lower half of Table 6.1.