

Other variable weighting

There are other cases in which variables (species) might need prior weighting, e.g. when a species is known to be often misidentified, its contribution (and those of the species it is mistaken for) can be reduced by multiplying the entries in the two species through by some downweighting constant. This is achieved by placing weights for each species in an Indicator (see Section 2) and taking **Pre-treatment>Weight variables**, supplying the indicator name. In this context, most weights would be 1, with a value less than 1 used for downweighting less-reliably identified species (the default weight could be 100, or any number, since similarities such as Bray-Curtis are invariant to a scale change). A further context in which this routine might be useful is to convert counts to approximate biomass, using a known average weight of an individual of each species. Also dispersion weighting is seen just to be another case of variable weighting, with weights as the reciprocal of the Divisor column. You might like to demonstrate this for the Fal copepod counts example above, by selecting or highlighting the Divisor column from Data2 then take **Pre-treatment>Transform(individual)** > (Expression: $1/V$), highlighting the new column and copying (Ctrl-C) to the clipboard; opening Fal copepod counts, **Edit>Indicators>Add**>(Add indicator named:DWt), highlighting that blank new column and pasting (Ctrl-V); and finally **Pre-treatment>Weight Variables**>(Indicator:DWt). The resulting matrix should be identical to Data1. Save the workspace as Fal ws for later use.

The image shows a sequence of software windows and dialog boxes illustrating the process of variable weighting:

- Data2**: A table with columns 'Samples' and 'Divisor'. The 'Divisor' column contains values for various species.
- TRANSFORM**: A dialog box where the expression $1/V$ is entered, and the 'Divisor' column is selected from the 'Data4' window.
- Fal copepod counts**: A table with columns 'R1', 'R2', 'R3', 'R4' and rows for species like Brianola sp., Pseudobradya, etc.
- Indicators**: A dialog box where a new indicator named 'DWt' is added to the 'Fal copepod counts' table.
- Weight Variables**: A dialog box where the 'DWt' indicator is selected for weighting.
- Data5**: The final result, showing the 'Fal copepod counts' table with weighted values in the 'R1' through 'R4' columns.

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