

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 screenshots illustrate the following steps:

- Transform Dialog:** Shows the 'Transform' window with 'Selected data' set to 'Data4' and the 'Expression' set to $1/V$. The 'Pick' section shows 'Cell' selected. The 'Variables' list includes 'Divisor'.
- Data2 Table:** A table titled 'Fal estuary copepods Abundance' with columns 'Samples' and 'Divisor'. The 'Divisor' column contains values for various species.
- Indicators Dialog:** Shows the 'Indicators' window with 'Add...' button. The 'Label' column is 'DWt' and the 'Value' column is 1.
- Weight Variables Dialog:** Shows the 'Weight Variables' window with 'Indicator' set to 'DWt'.
- Data5 Table:** A table titled 'Fal estuary copepods Abundance' with columns 'Samples' and 'R1', 'R2', 'R3', 'R4'. The 'R1' column contains values for various species.

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