

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 is a collage of screenshots from a software interface, likely a data analysis package, showing the steps to perform variable weighting. The screenshots are arranged in a way that illustrates the workflow:

- Top Left:** A window titled "Data2" showing a table with columns "Samples" and "Divisor". The "Divisor" column contains values for various species: Brianola sp. (1), Pseudobradya (10.622), Pseudobradya (4.4365), Halectinosoma (7.3333), Tachidius disci (13.67), Microarthridion (11.46), Harpacticus fle (1), Stenhelia palus (6.3882), Stenhelia elizab (5.9618), Amphiascoides (4.661), and Robertsonia ce (19.853).
- Top Center:** A "TRANSFORM" dialog box. The "Expression:" field contains "1/V". The "Pick" section shows "Cell" selected. The "Type" section shows "Cell" selected. The "Rename variables" checkbox is unchecked. The "OK" button is highlighted.
- Top Right:** A window titled "Fal copepod counts" showing a table with columns "Samples" and "Abundance". The "Abundance" column contains values for various species: Brianola sp. (0), Pseudobradya (18), Pseudobradya (0), Halectinosoma (0), Tachidius disci (12), Microarthridion (2), and Labels (Factors...).
- Bottom Left:** A window titled "Data5" showing a table with columns "Samples" and "Abundance". The "Abundance" column contains values for various species: Brianola sp. (0), Pseudobradya (1.6947), Pseudobradya (1.2239), Halectinosoma (0.47074), Tachidius disci (1.1298), Microarthridion (0), Harpacticus fle (0), Stenhelia palus (0), Stenhelia elizab (0), Amphiascoides (0), and Robertsonia ce (0).
- Bottom Center:** A "Weight Variables" dialog box. The "Indicator:" dropdown menu shows "DWT" selected. The "OK" button is highlighted.
- Bottom Right:** An "Indicators" dialog box. The "Add..." button is highlighted. The "Label" column contains "DWT" and the "Value" column contains "1".

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