Index of Association

The remaining of the three choices in the initial list, Measure•Index of Association, is essentially Whittaker's index of association, which when calculated on samples (the default is always Analyse between•Samples) is simply just Bray-Curtis similarity on a sample-standardised matrix. [You might like to check this with the following sequences on the original Ekofisk macrofauna counts :
(i) **Pre-treatment>Standardise**>(Standardise•Samples)&(By•Total) then **Analyse>Resemblance** >(Measure•Bray-Curtis similarity)&(Analyse between•Samples), compared with
(ii) **Analyse>Resemblance**>(Measure•Index of Association)&(Analyse between•Samples).]

The Index of Association is not therefore in this main list for its use on sample similarities but because it is the primary means of computing similarities among species, in their behaviour over the full set of samples. Importantly therefore, (Measure•Index of Association) almost always needs to be used with (Analyse between•Species), and the measure is then defined, over (0,100), as:

$$ IA = 100 \left[1 - \frac{1}{2} \sum_j \left| \frac{y_{1j} }{ \sum_{j} y_{1j}} - \frac{y_{2j}}{ \sum_{j} y_{2j}} \right| \right] $$

with 0 implying full 'negative' and 100 full 'positive' association of the two species (1 & 2 in the above equation). For its application as part of the new *coherent curves* method in PRIMER 7 see Section 10. Note that in PRIMER 6, the Whittaker coefficient was present only in its dissimilarity form (the D_9 of L&L) which is really a coefficient of dis-association since it takes larger values for samples with more differing communities. The previous nomenclature was therefore confusing and the index of association is now available in PRIMER 7 only as a similarity. Note also that all the definitions in the remainder of this section (up to the Analysing between variables box heading) are given in terms of resemblances among samples, the primary use for resemblance matrices.

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