Range of relatedness indices calculated

In order to obtain a diversity measure which steps outside the species abundance distribution, and which could therefore potentially strike out along a different axis to the linear richness-evenness combinations shown in the MDS of the mechanistic correlations among standard diversity indices, it would be helpful to introduce further attributes of the assemblage composition. One possibility is to combine biomass and abundance data, as in ABC curves (Section 16), but another – which we shall turn to now – is to introduce information on the relatedness of the species in each sample, as discussed at the start of this section. These indices are accessed through the final two tabs of the dialog box from **Analyse>DIVERSE**, namely **Taxdisc** and **Phylogenetic**. The nomenclature comes from the original papers on these topics (Warwick and Clarke's *taxonomic diversity* and *taxonomic distinctness* indices, and Faith's *phylogenetic diversity*), and does not imply that either set of indices is more appropriate to taxonomic or phylogenetic hierarchies. Other hierarchies (e.g. genetic, functional) could be equally appropriate and PRIMER does not now even need a hierarchy to compute the taxonomic distinctness measures – a *distance among species* matrix will suffice.

The relatedness indices are all denoted by upper case Greek symbols, with superscript$^+$ if calculated from species lists. For definitions, and extensive discussion, see Chapter 17 of the CiMC manual.

Taxonomic distinctness
Quantitative:
Taxonomic diversity: Δ
Taxonomic distinctness: $\Delta^\ast$
Presence/absence:
Average taxonomic distinctness (AvTD): Δ^+
Total taxonomic distinctness (TTD): $S\Delta^+$
Variation in taxonomic distinctness (VarTD): Λ^+

Phylogenetic diversity
Presence/absence:
Average phylogenetic diversity (AvPD): Φ^+
(Total) phylogenetic diversity: $S \Phi^+$ (Faith's 'PD')

Revision #9
Created 3 November 2024 20:38:25 by Arden
Updated 26 February 2025 00:56:04 by Abby Miller