Diagnostic tools for MDS plots

In addition to the ability in a previous PRIMER version to **Graph>Special>Overlays**>(✓Overlay clusters) from a dendrogram onto a related MDS ordination, in order to judge agreement between these differing low-d displays of high-d data, PRIMER 7 now provides a wide range of diagnostic tools to monitor convergence of the ordination and the adequacy of the low-d representation. The iterative search process can be viewed in real time with (✓Configuration plot)>(✓Animate) and, as with most such animations (including rotating 3-d MDS plots with **Graph>Spin**), recording this, with standard video controls in an *.mp4 file, is now possible. The behaviour of stress over a range of dimensions is seen in a (✓Scree plot) and Shepard plots for all specified dimensions viewed in conjunction, in a *multi-plot* (see the previous section) along with the configurations. Points which the ordination is unable to place well are identifiable from the Shepard diagram by clicking on outliers in this scatter plot. An alternative now available to drawing cluster contours for specified similarity thresholds is a juxtaposition of a 2-d ordination with the full dendrogram in the third dimension, taking **Special**>(**Main**>Plot type•2D>✓3D project) & (**Overlays**>✓Overlay clusters). Also in 2- or 3-d, (**Overlays**>✓Join pairs) simply joins pairs of sample points in the ordination plot which have similarities greater than a specified value, and (✓Overlay minimum spanning tree) will connect ordination points according to the minimum length (branching) path connecting them all, through the dissimilarities in the resemblance matrix (not distances in the low-d ordination). Both methods therefore may allow identification of points in the ordination which do not reflect well the underlying dissimilarities. Another new PRIMER 7 feature here is the ability quickly to match different ordinations of the same set of sample labels (e.g. with different stresses, metric *vs* non-metric etc.), by optimal rotation, reflection and scaling of two configurations by Procrustes analysis, taking **Graph>Align Graph** and supplying the configuration plot which it is attempted to match.

Revision #4
Created 25 June 2024 21:51:31 by Arden
Updated 22 January 2025 02:07:45 by Abby Miller