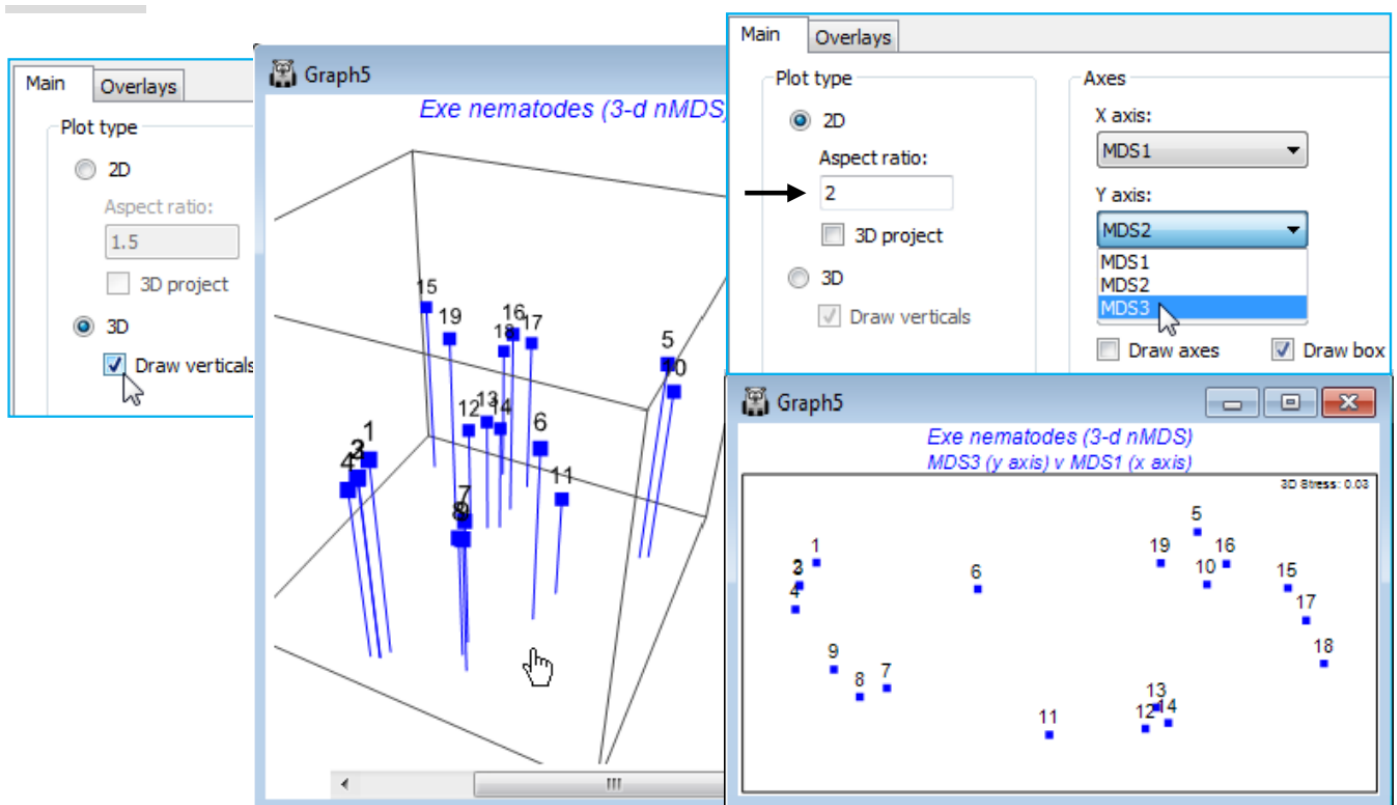


# Drawing verticals for 3-d plots

Whilst it is relatively easy to visualise a 3-d plot by rotation of the axes – and PRIMER 7 is now able to output digital video of such rotations (as \*.mp4, see below) – it is much harder to produce a convincing 3-d plot for static reproduction in 2-d, e.g. for a printed publication. PRIMER 7 tries to aid this in two ways: by giving any text on the plot a pseudo-perspective, e.g. with site or axes labels shrinking with distance into the plot, and providing an option on the **Graph>Special>Main** tab to (Plot type•3D)>(✓Draw verticals), which drops vertical lines onto the base plane of the box. For a limited number of samples this might help to fix the relative depths into the plot of the points. Alternatively, 3-d MDS axes could be viewed in 2-d, a pair of axes at a time. This uses, e.g. for the 3-d MDS plot of the Exe data (Graph5), **Graph>Special>Main>(Plot type•2D)** & (Axes>X axis: MDS1 & Y axis: MDS2) then (X axis: MDS1 & Y axis: MDS3) and possibly (X axis: MDS2 & Y axis: MDS3). It might be sensible to duplicate the first of these plots, with **Tools>Duplicate>(•On existing branch)** so that two (or all three) of these plots can be viewed together in the workspace. The same idea could be used to generate two or more of the four possible 3-d plots obtainable from the axes of a 4-d MDS (or PCA/PCO), e.g. (X axis: MDS2 & Y axis: MDS3 & Z axis: MDS4), etc.



The plot shown above right (of MDS3 against MDS1) also uses the capacity, noted earlier, to alter the box shape for 2-d plots, by setting (Aspect ratio: 2) rather than the default of 1.5. In fact, rather little is to be gained by a 3-d MDS solution in this case since the 2-d stress of 0.05 is already low, the 3-d solution takes it down only slightly (to 0.03), and the 2-d approximation which the MDS solution represents is unlikely to mislead at all. Save and close the Exe ws workspace.

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