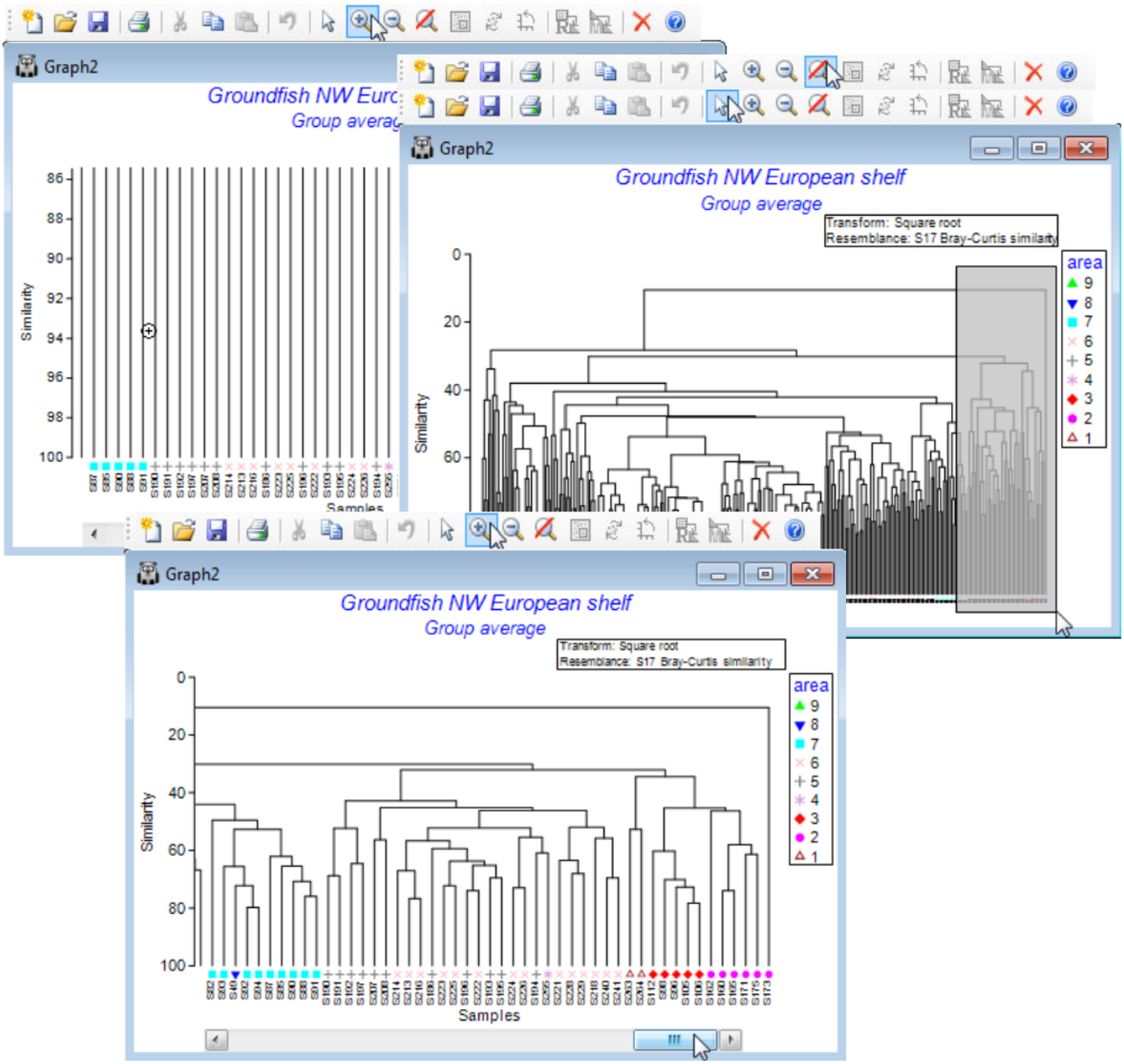
Zooming dendrograms

Zooming is invoked by **Graph>Zoom In** or **Zoom Out** from the main menu, or by clicking on the Zoom in  or out  icons on the Tool Bar. The cursor changes to ⊕ or ⊖ when over the plot, and left-clicking zooms one step in or out. To leave the plot in its current (possibly zoomed) state and return to default operation, click on the pointer icon  on the Tool Bar, or take **Graph> Pointer** (remember that the graph menu can also be obtained at any time by right-clicking when the cursor is over the plot). To restore the plot to its original, unmagnified state, click on the new cancel zoom icon  on the Tool Bar, or select **Graph>Cancel Zoom**.

Instead of zooming by incremental steps, you can go straight to the final zoomed area by drawing a box around the area to magnify: with the cursor in the usual pointer mode (click on  on the Tool Bar if necessary), draw a box by left-clicking and holding at one corner and dragging over the required rectangle, then releasing, in usual Windows fashion. A single click on the  icon on the Tool Bar (or **Graph>Zoom In**) will take you straight to the zoomed area. (The process is reversed, as above, by taking **Cancel Zoom** or its icon ). But note that, unlike the incremental zoom, which preserves the *aspect ratio* (the displayed *y:x* axis ratio) of the diagram, a rectangular zoom will change the aspect ratio so that all the information within the box is magnified into the current size of window, however long and thin (or short and fat) the drawn rectangle originally was. This is a powerful feature for zooming on dendrograms, since a long, thin rectangle allows you to view a small subset of the samples (x axis) across the whole similarity scale (y axis). Under zooming, note that the axes are always shown, even when the zoomed area is well away from them, and scroll bars are displayed on the axes. By dragging these scroll bars back and forth (or up and down) the whole tree can be viewed, piecemeal, at the current aspect ratio and magnification.

Reverse the condensing of the middle section to reinstate the full tree (rotating and collapsing are *toggles*, switched on and off by repeated clicking on the same line) and now try to zoom in on the fine detail. Repeated use of the ⊕ cursor from the  Tool Bar icon is not effective. By the time the symbols are visible, the similarity scale is too narrow to see the clustering structure. What is needed is a change in aspect ratio: cancel the zoom, change to the pointer  , draw a tall narrow box over part of the dendrogram, and **Zoom In** again (). A viewable dendrogram now results, which can be scrolled across, using the horizontal scroll bar. Save the Groundfish ws workspace and close it.



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