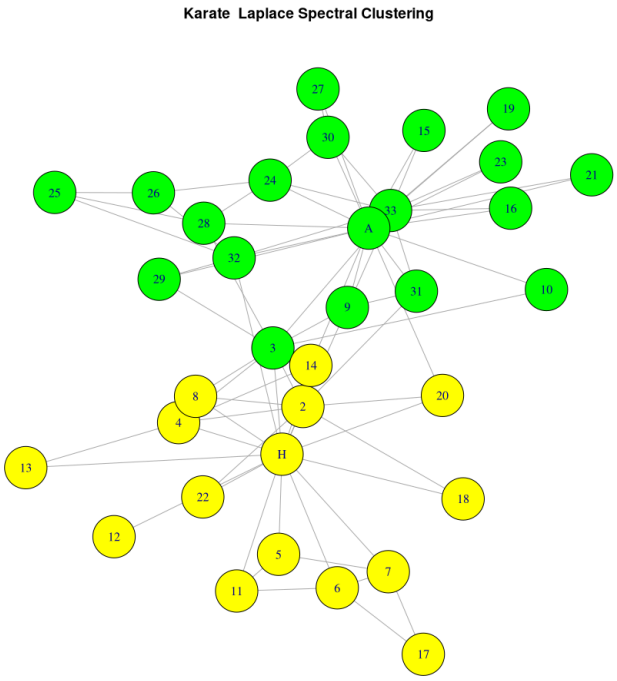
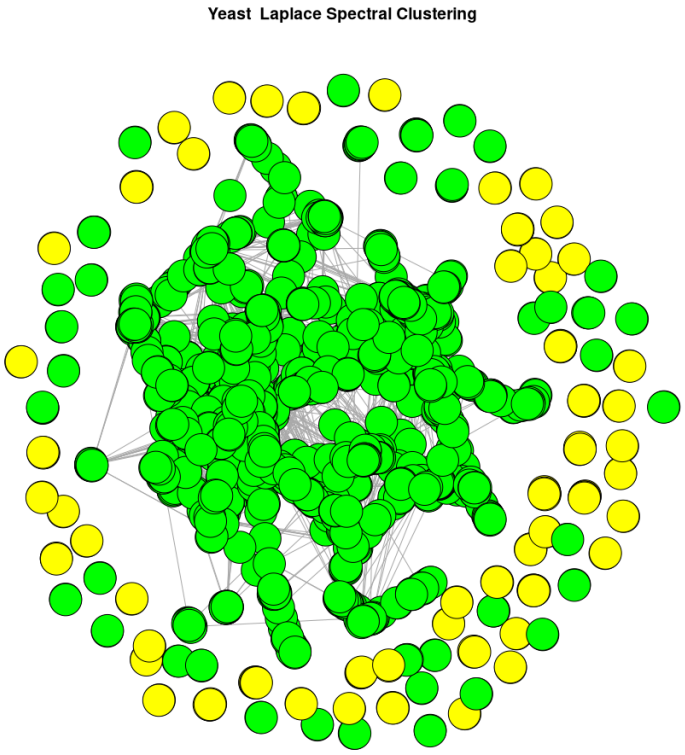
Laplace Spectral Clustering

Karate:

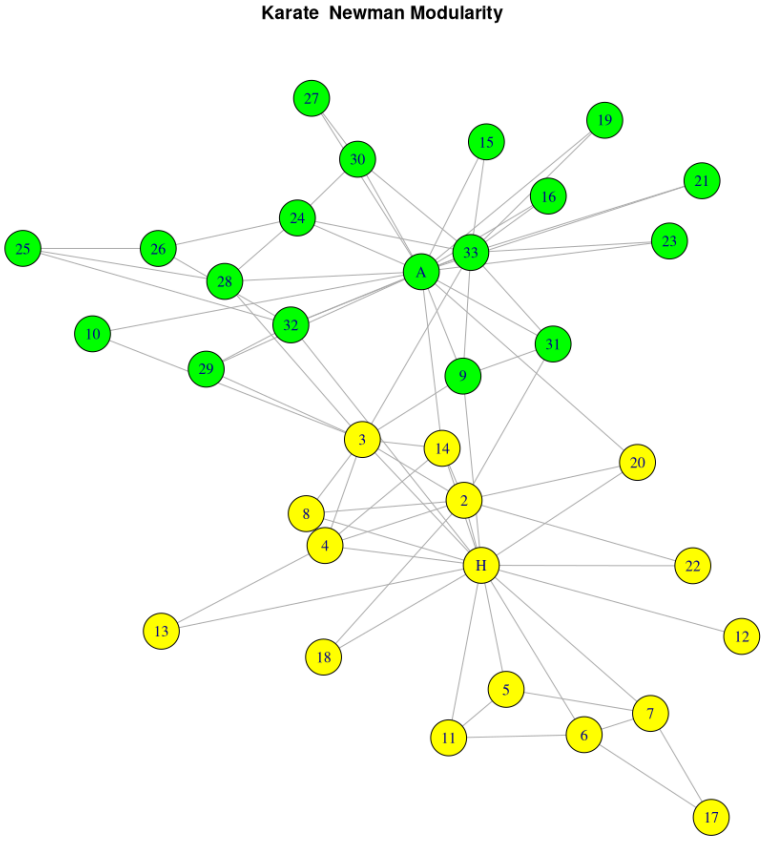


Yeast:



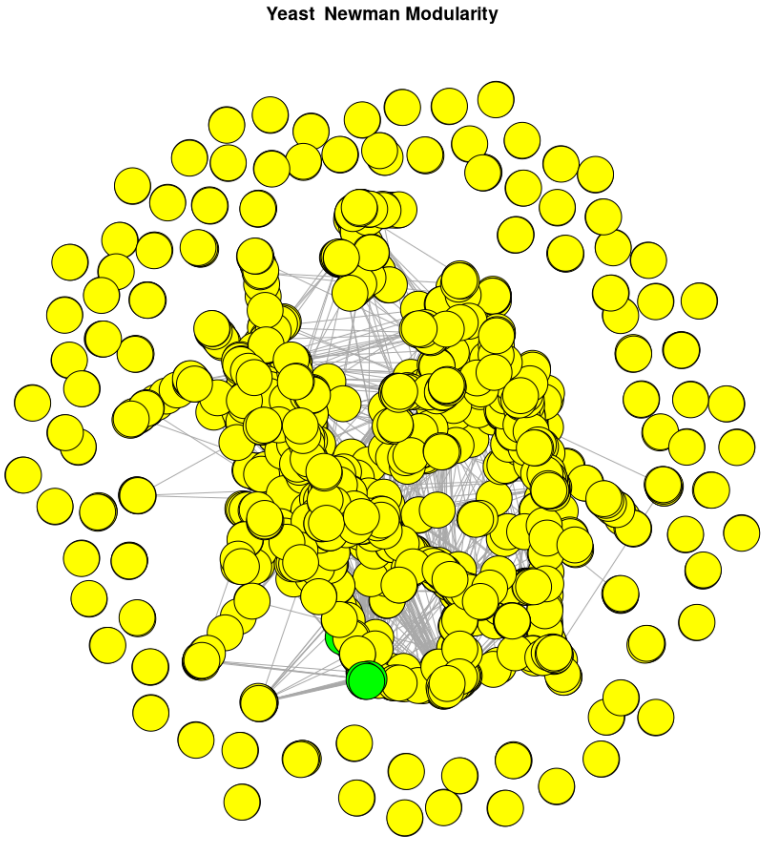
Newman Modularity

Karate:



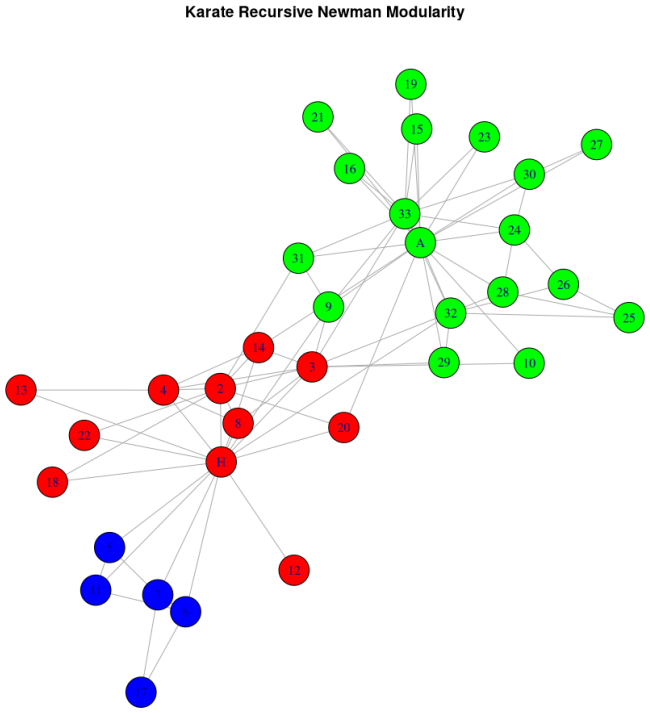
Slight difference: “3” is now part of the yellow community, when it was part of the green community with Laplace spectral clustering. Otherwise, community structures are identical.

Yeast:



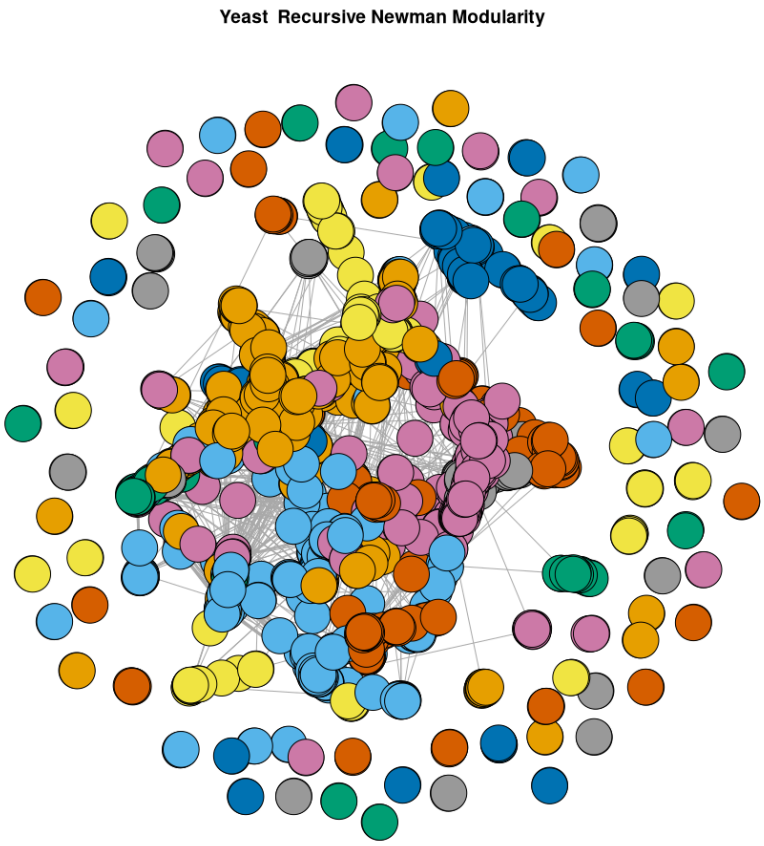
Very large differences with the yeast network. With Laplace spectral clustering, there was one large community that included all of the “central” nodes and some fringe nodes, with a second community that contained only fringe nodes. With this approach, almost every node is part of the same community. However, there are some central nodes that are part of a separate sub-community.

Recursive Newman Modularity (fastgreedy)
Karate:



When using the recursive approach that tries to fine-tune the community detection, 3 communities are detected. One of the communities is a sub-community of the larger two factions, and includes 5 of the "fringe" nodes that have close ties.

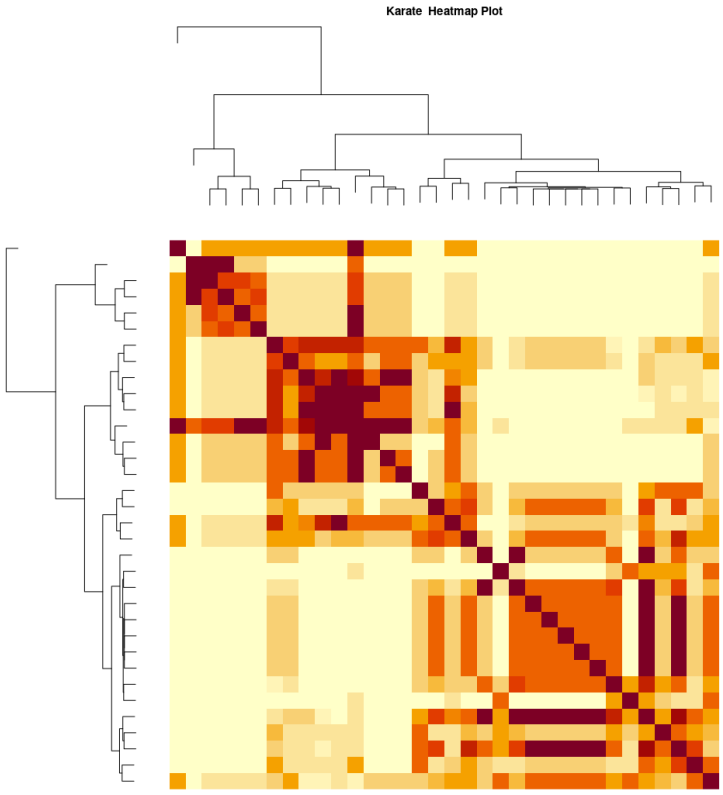
Yeast:

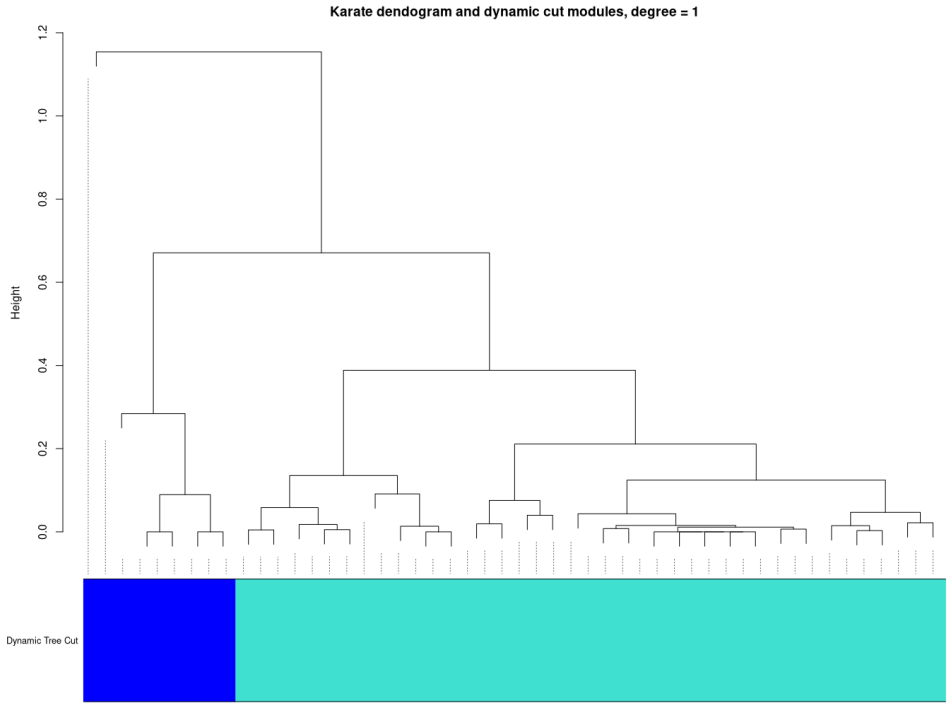


The yeast network has 2617 nodes, and using the recursive approach, 127 communities were detected. The largest community contains 744 nodes (28.43% of the network). The majority of the “central” nodes fell into relatively few communities, while the majority of the communities consist of fringe nodes.

TOM and Dynamic Tree Cut

Karate:





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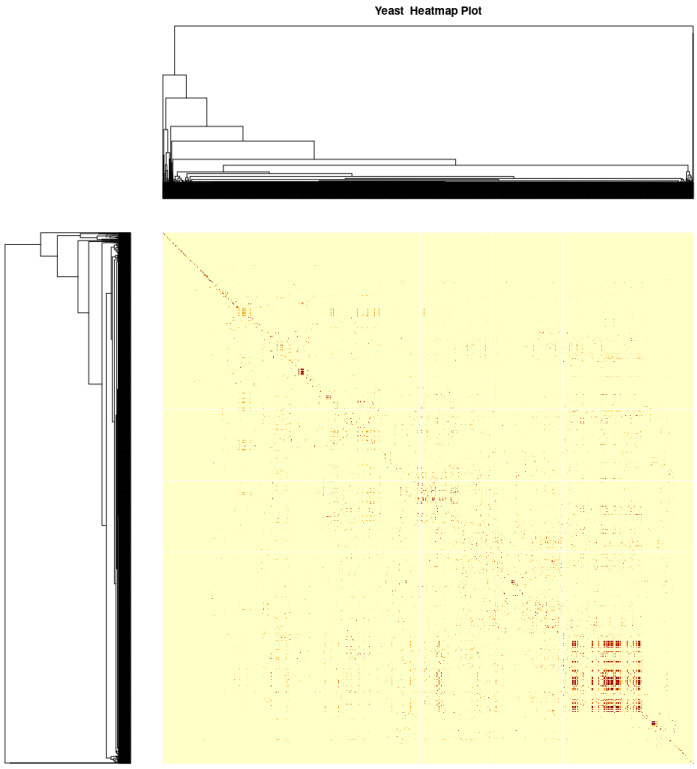
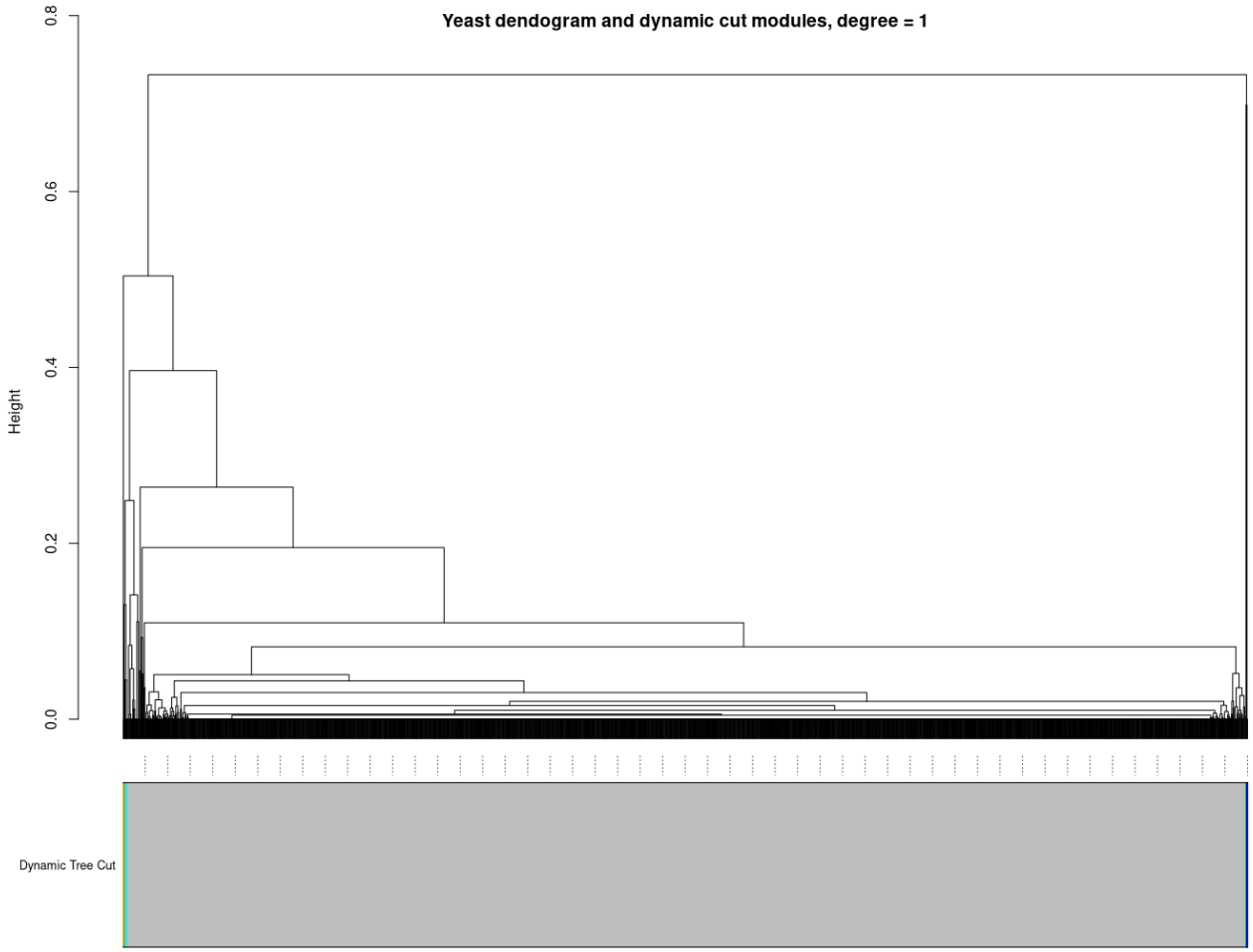
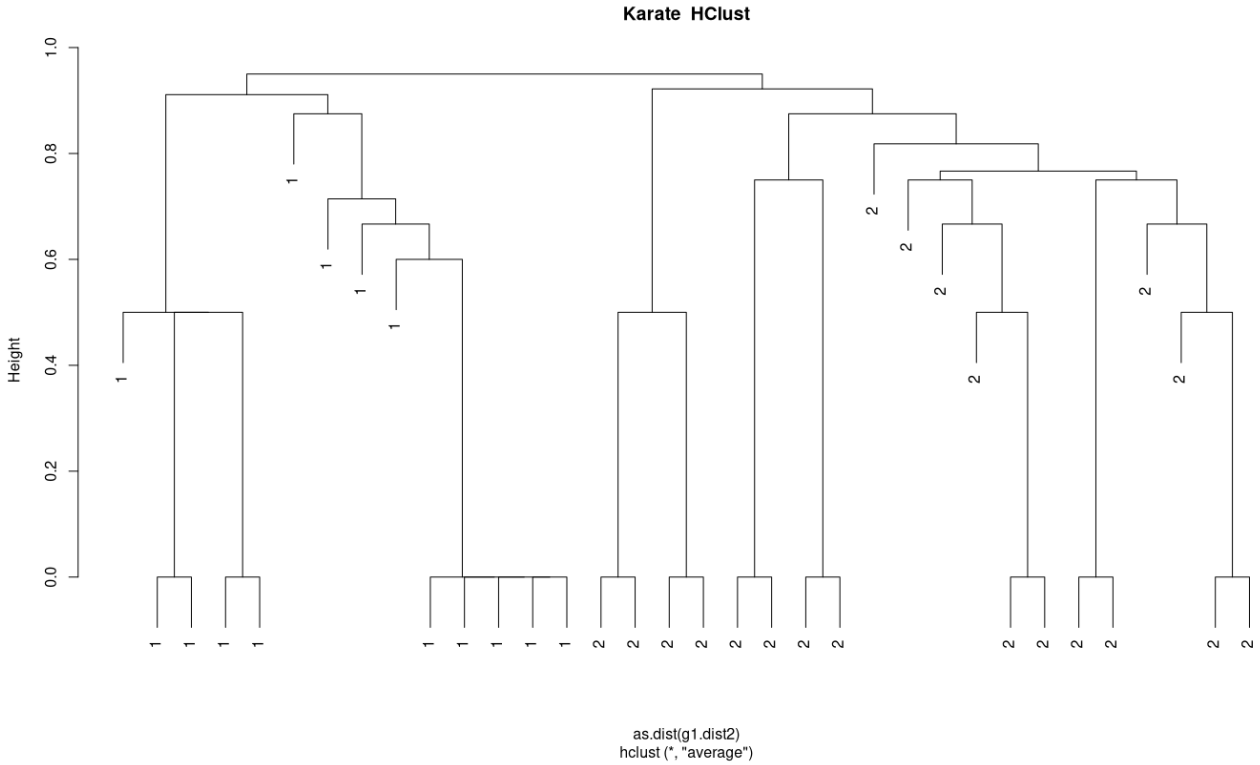




Multiple colors present: Blue=3, Brown=2, Green=2, Grey=2600, Turquoise=8, Yellow=2

UMAP

Karate:


Karate HClust
Height
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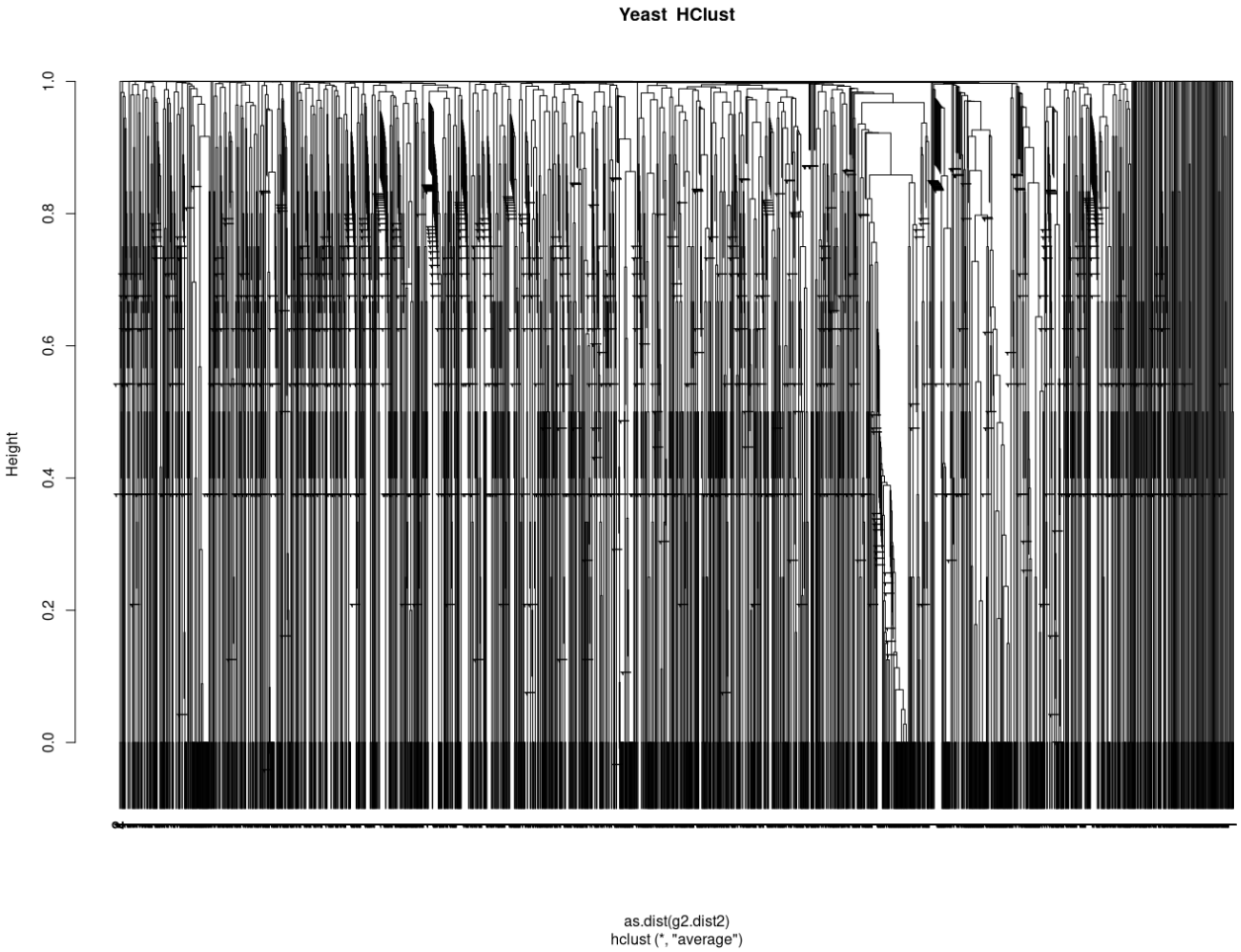
0.8
0.6
0.4
0.2
0.0
as.dist(g1.dist2)
hclust (*, "average")

Yeast:


Yeast HClust
Height
1.0
0.8
0.6
0.4
0.2
0.0
as.dist(g2.dist2)
hclust (*, "average")