Some Layout and Export Tricks in Gephi

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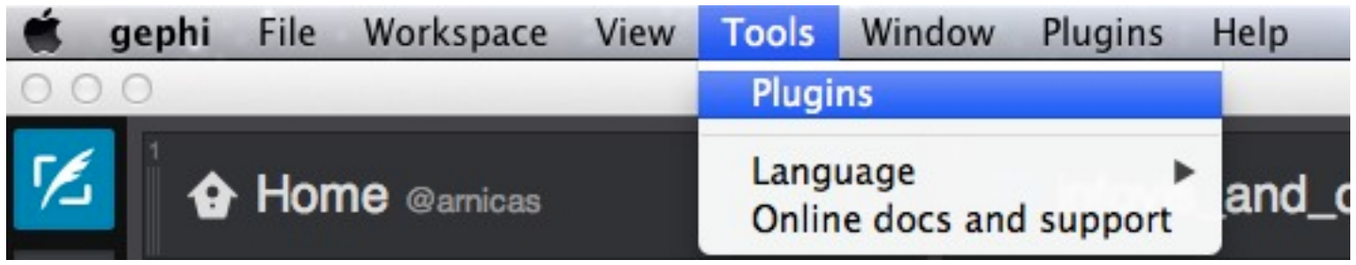
Plugins to Add to Gephi

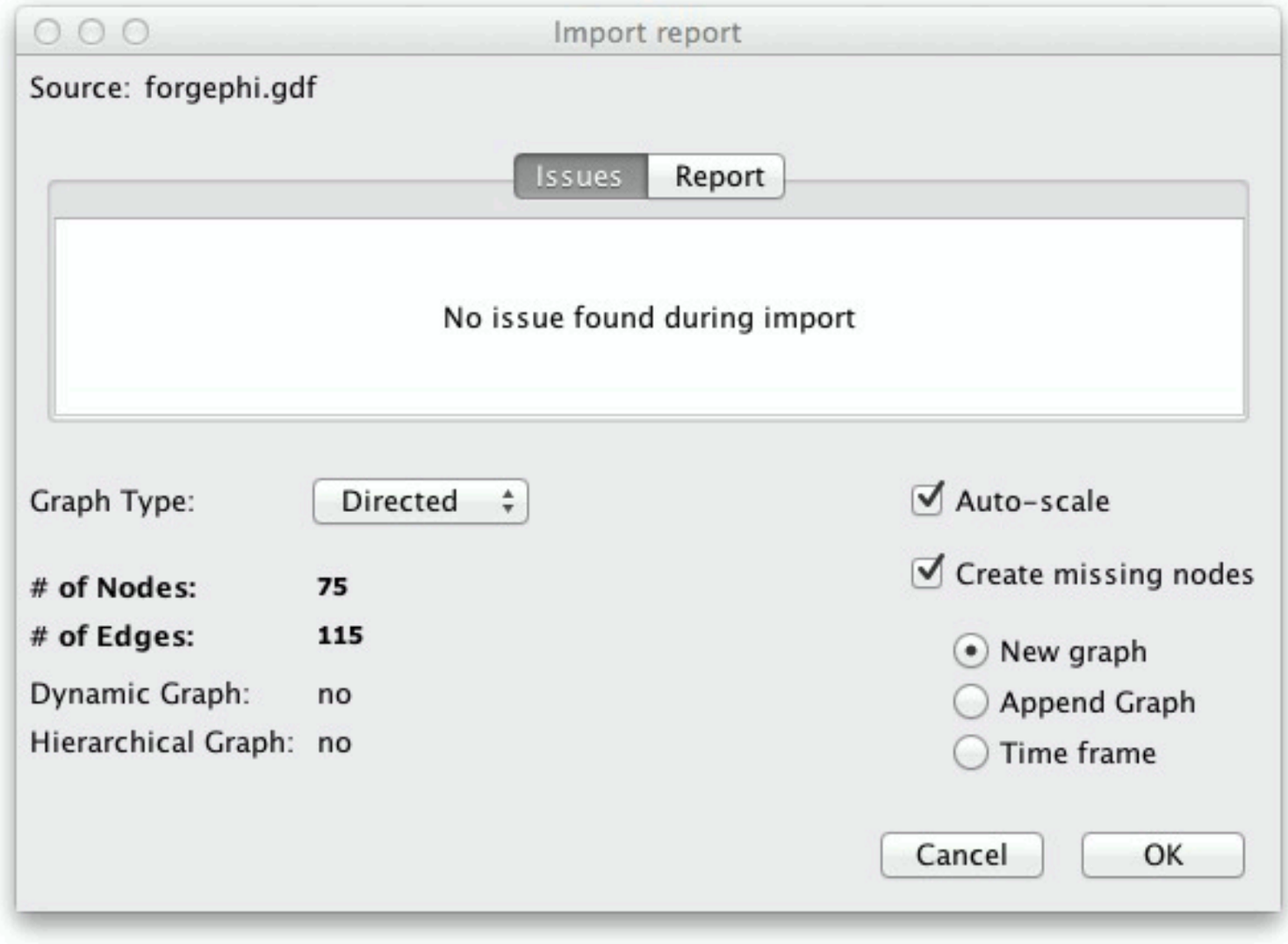


- Circular Layout
- SigmaExporter

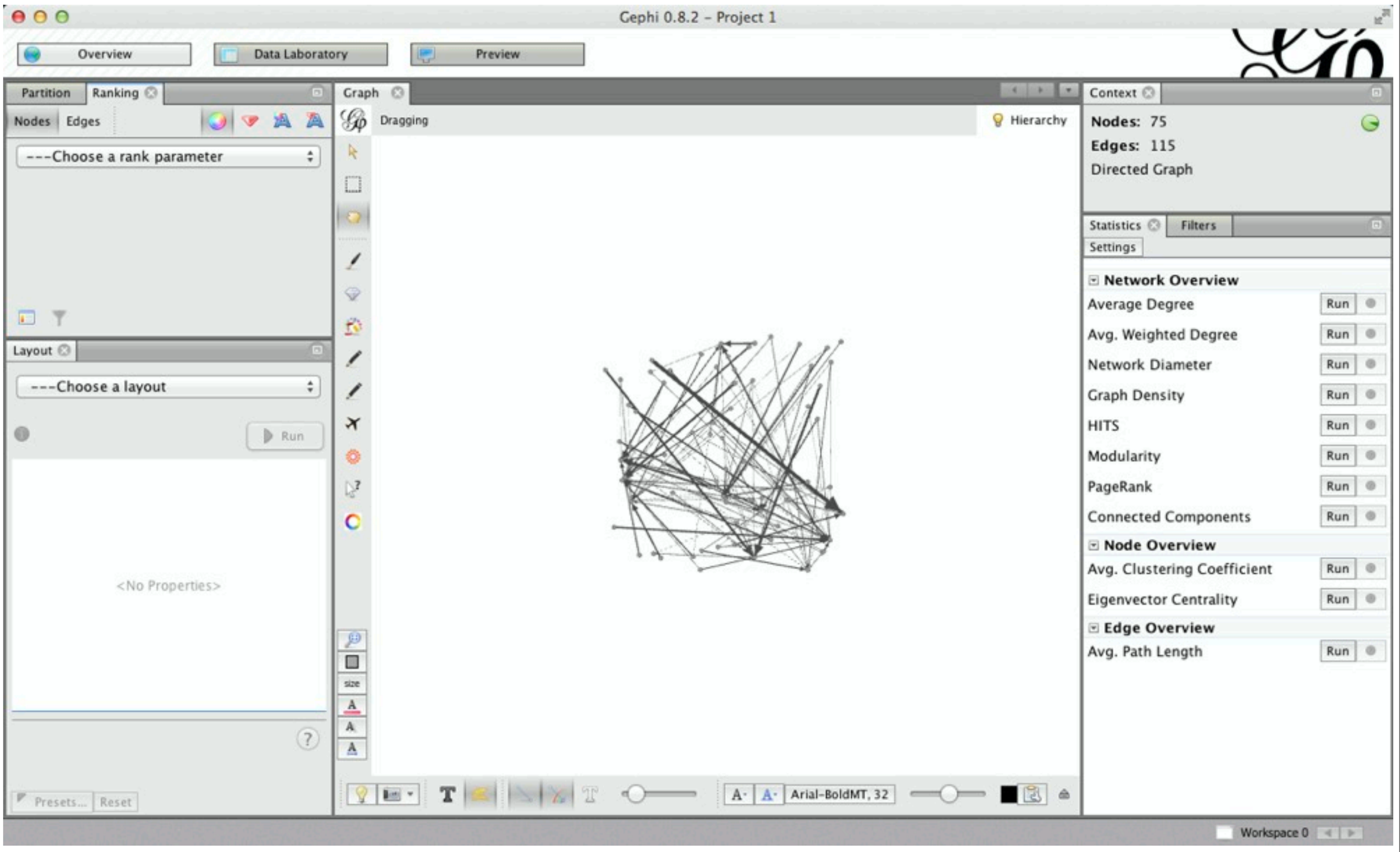
If you're following along...

- All the files are in https://github.com/arnicas/TopicsPythonGephi
- You should have a gephi appropriate files now, found in files/forgephi.gdf: https://github.com/arnicas/TopicsPythonGephi/blob/master/files/forgephi.gdf

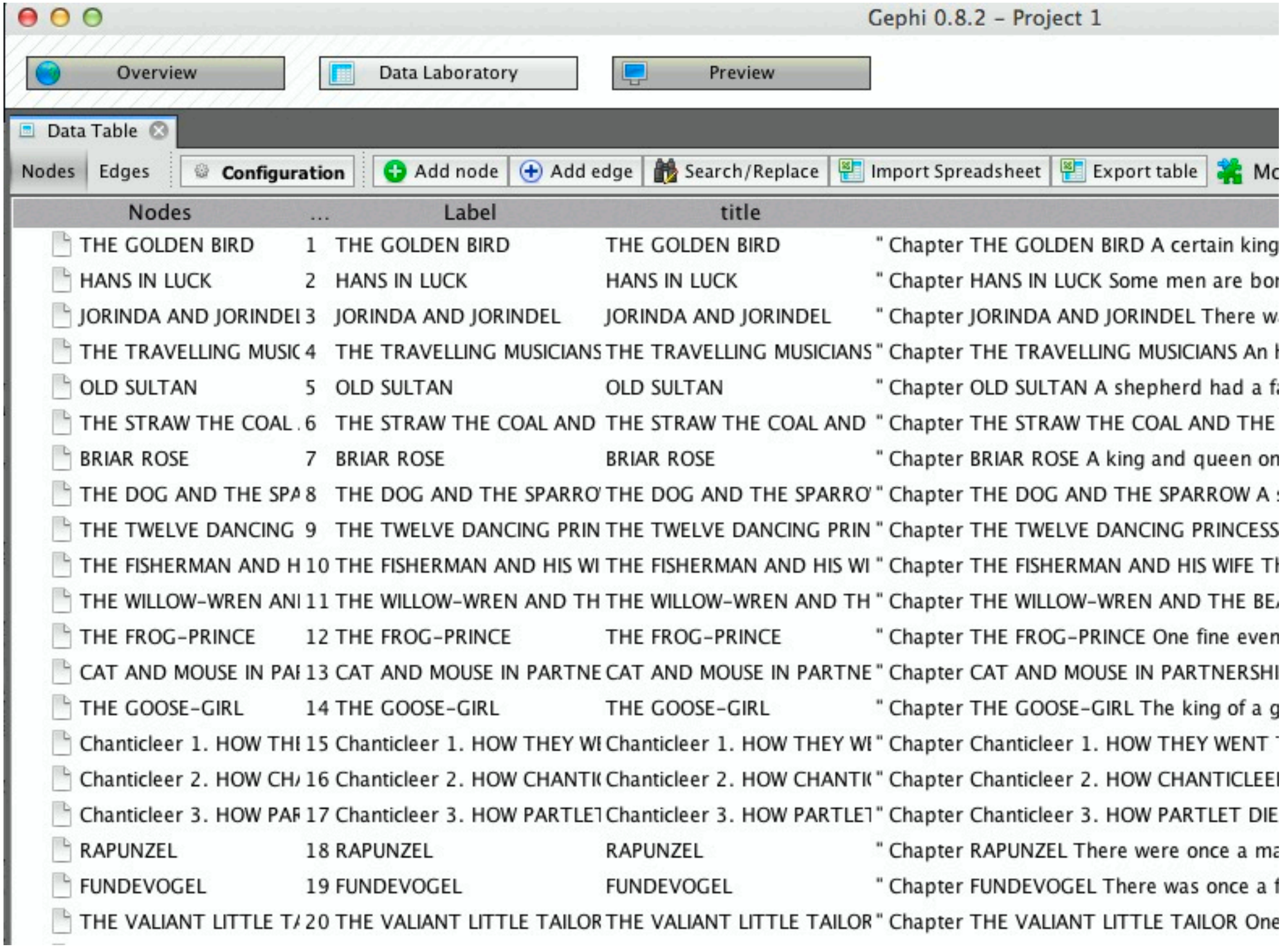
Launch Gephi. "Open" on file menu... Use defaults you see here.



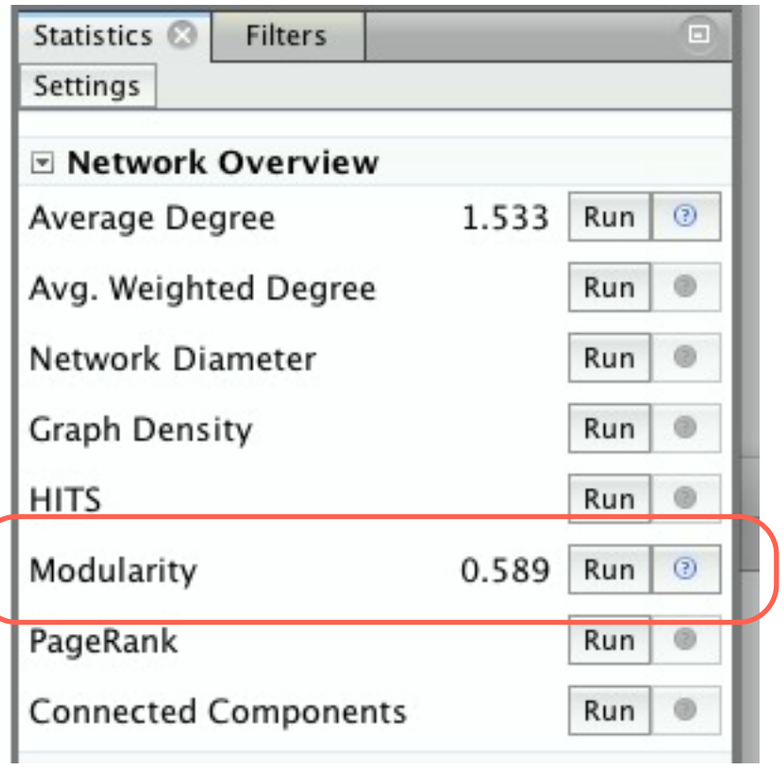
If all goes well, you should see something like this....



On the Data Laboratory Tab, you'll see what we imported.

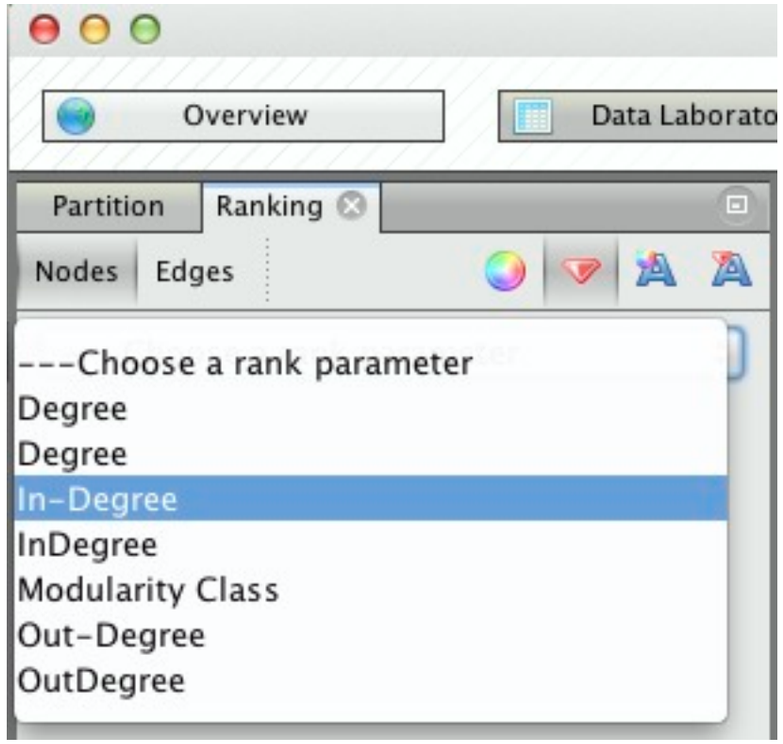


Over on the right side, you should have a "statistics" panel. "Run" a few of them and dismiss the dialogs. This adds stats to your data file you can use in layout and design.
Run Modularity at least -- it's a "community finding" algorithm.

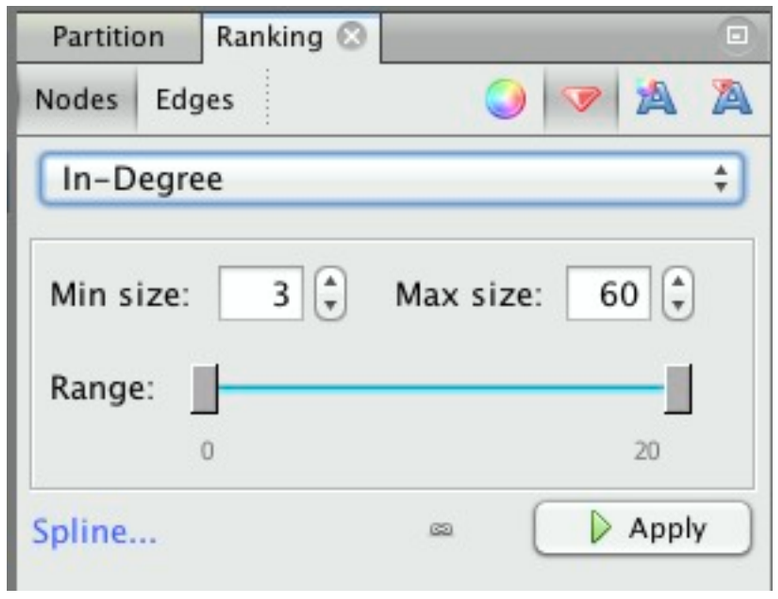


Now, on upper left side, in Ranking, select nodes, and the diamond. Pick "In-Degree" to size by.

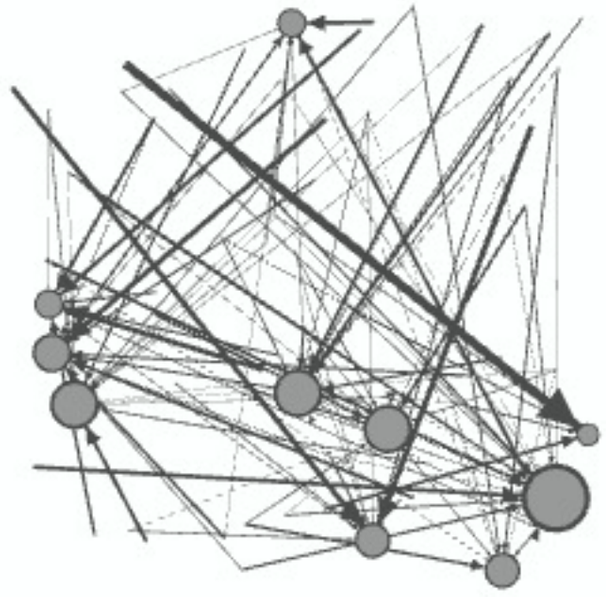
1.



2.



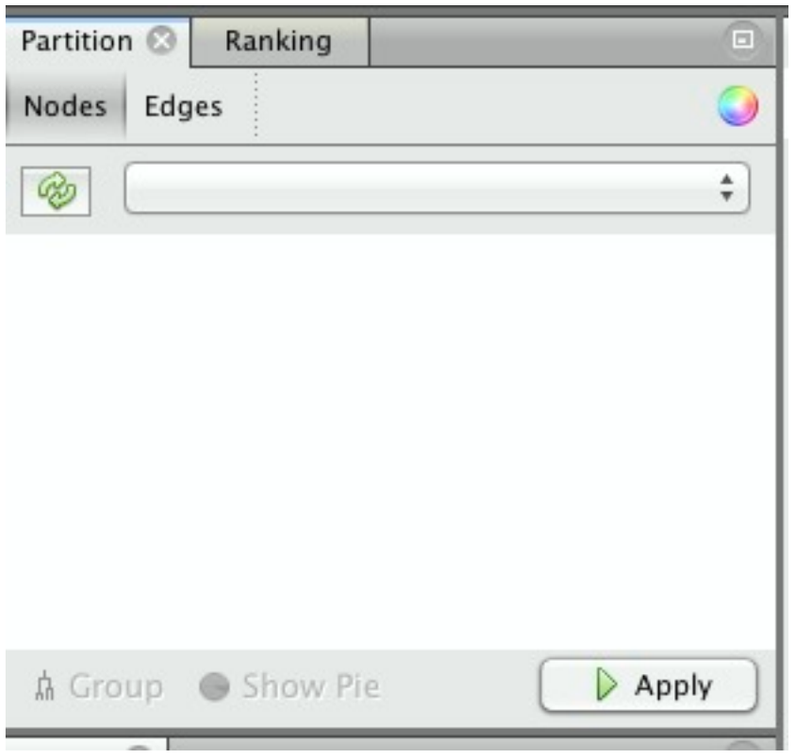
3. after Apply:



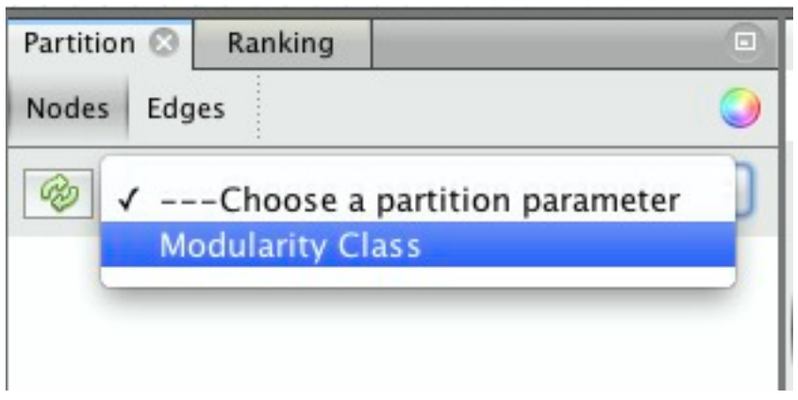
These are the nodes with the most "in arrows," or highest in-degree. They are the "topics."

Color by "Modularity"

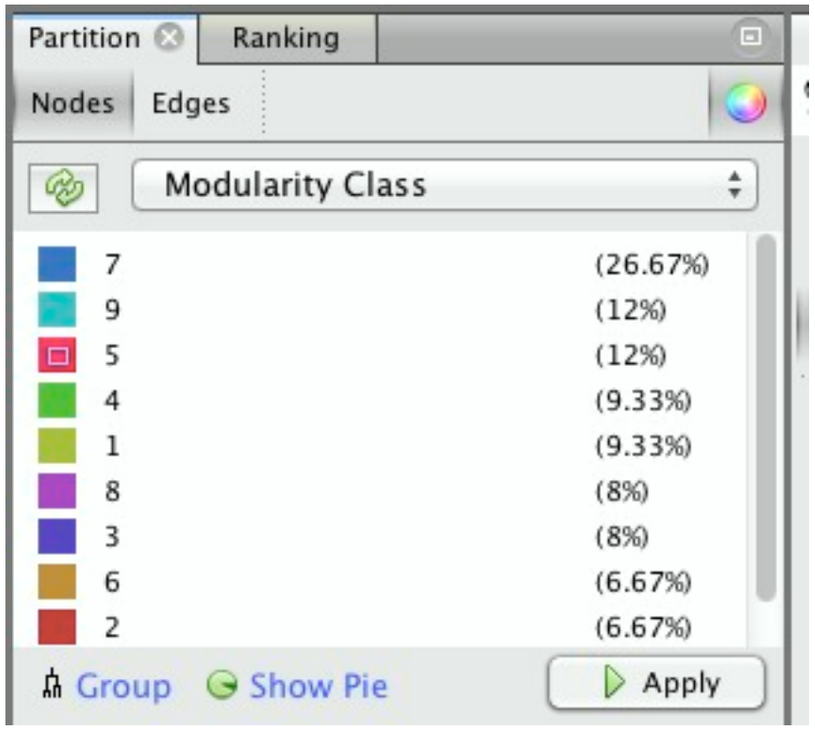
1. Hit green refresh arrow:



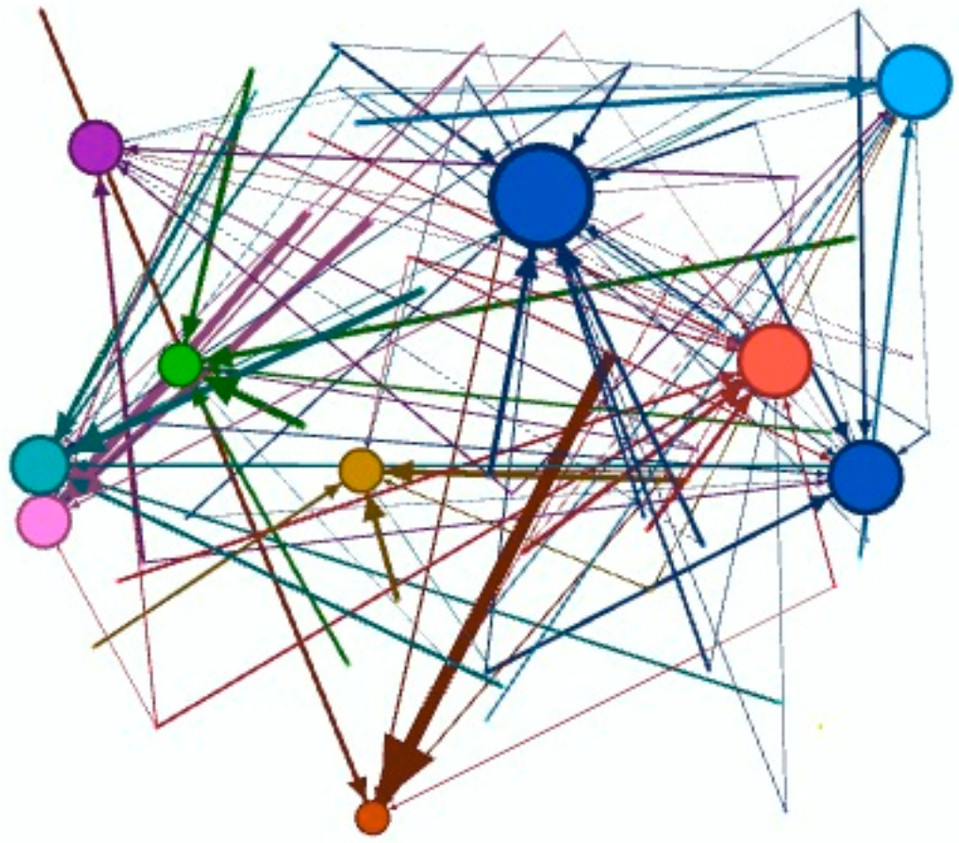
2. Then choose "Modularity Class" from menu:



3. You'll see the "groups" and random assigned colors. Click on a color to pick a new one. Make them as different as you can.

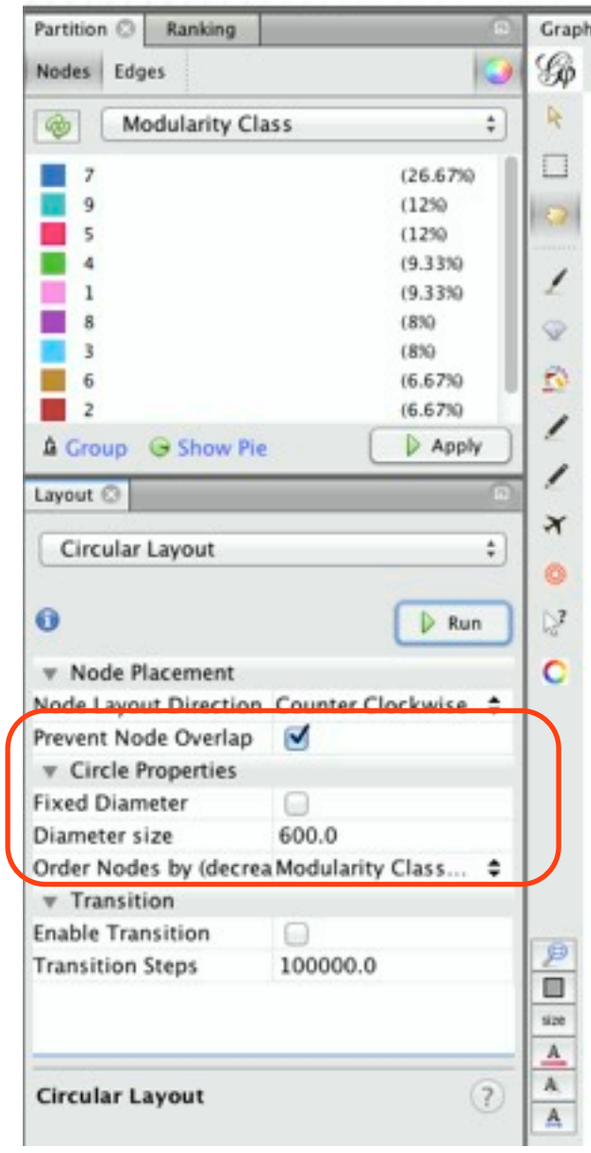


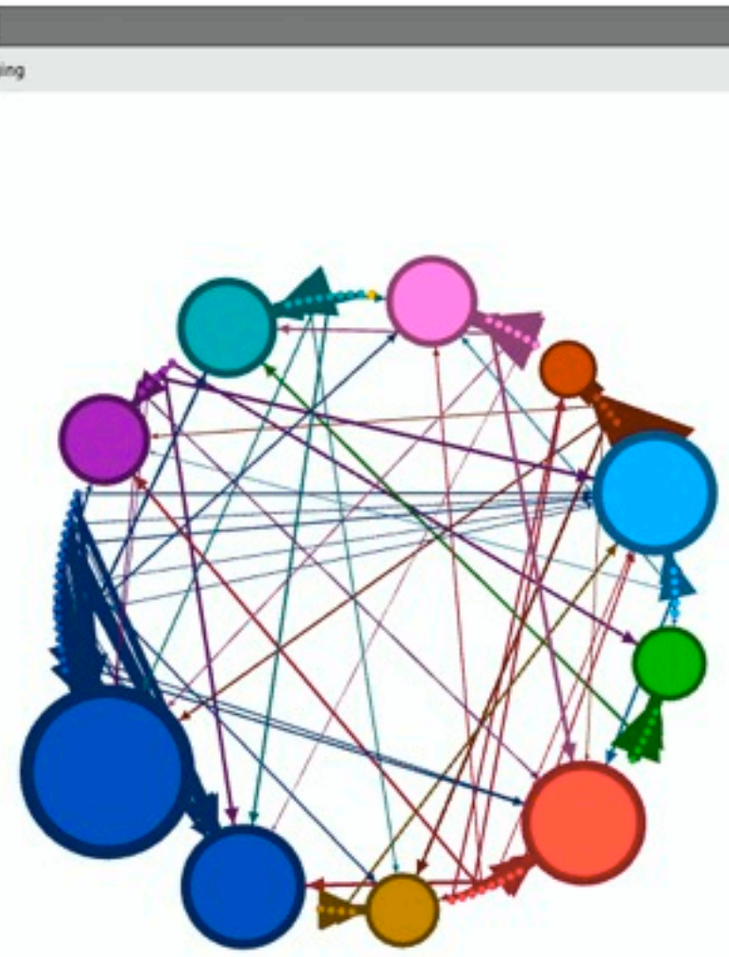
4. Then hit "Apply."



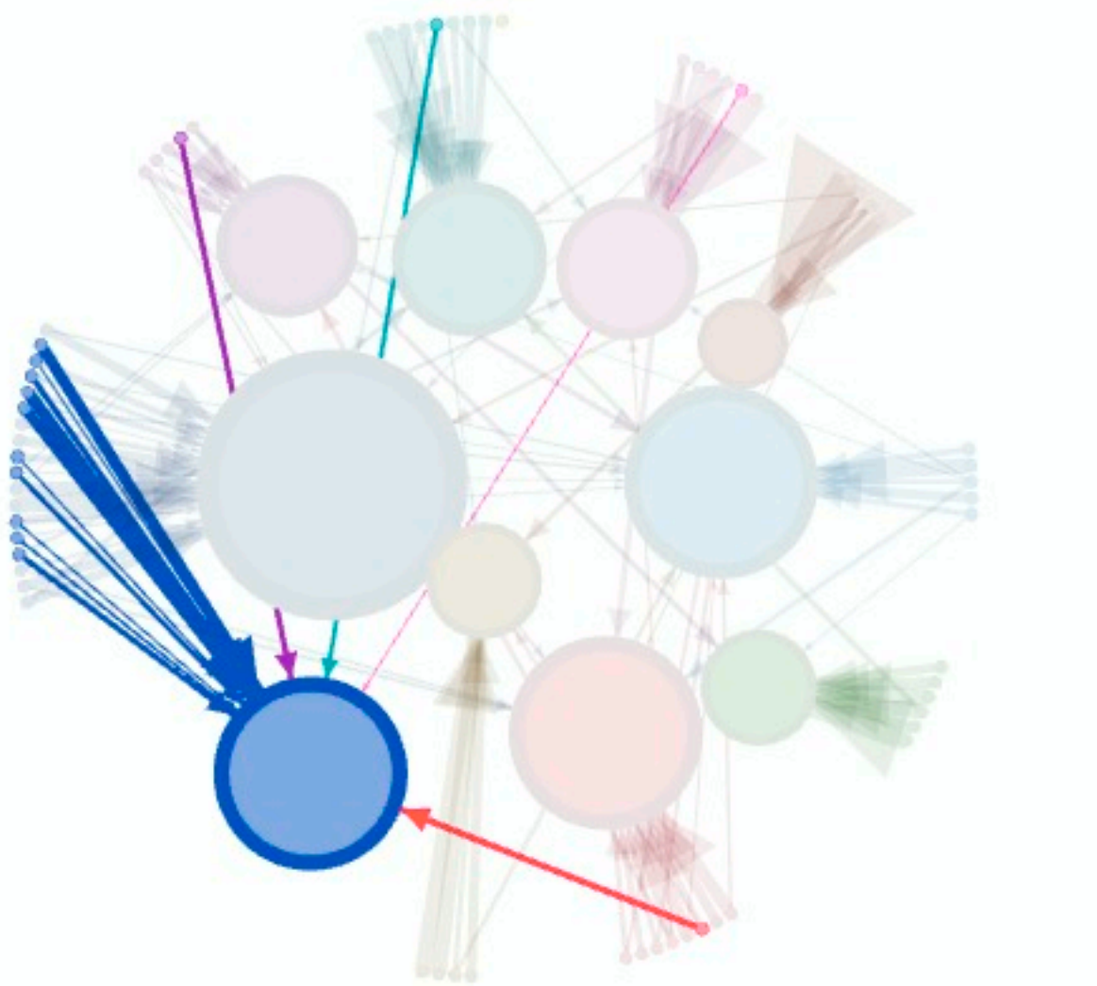
Let's try to lay it out a bit...
Circular is nice for topics.
You'll need to hand-adjust in any case.

Order nodes by modularity class!

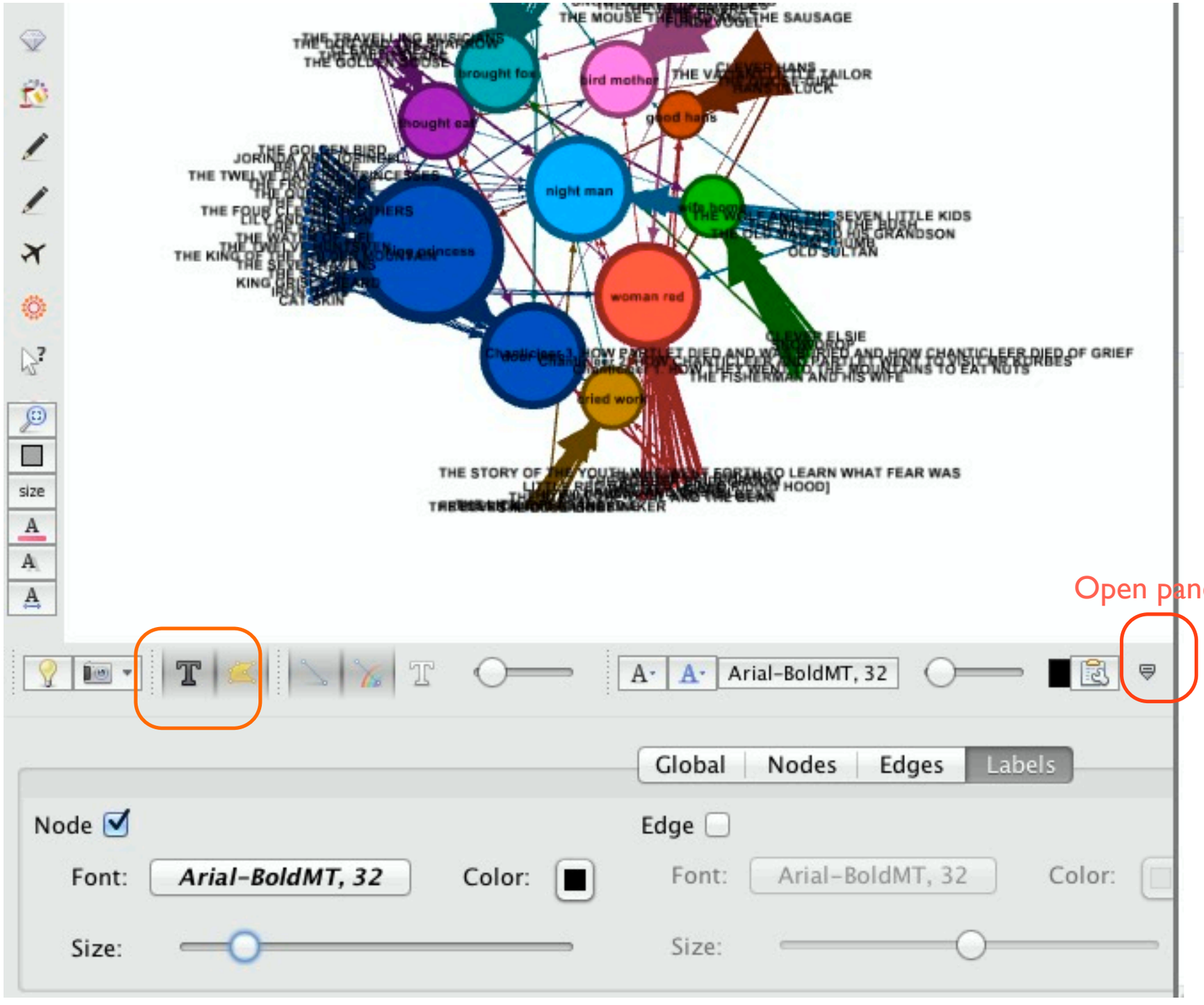




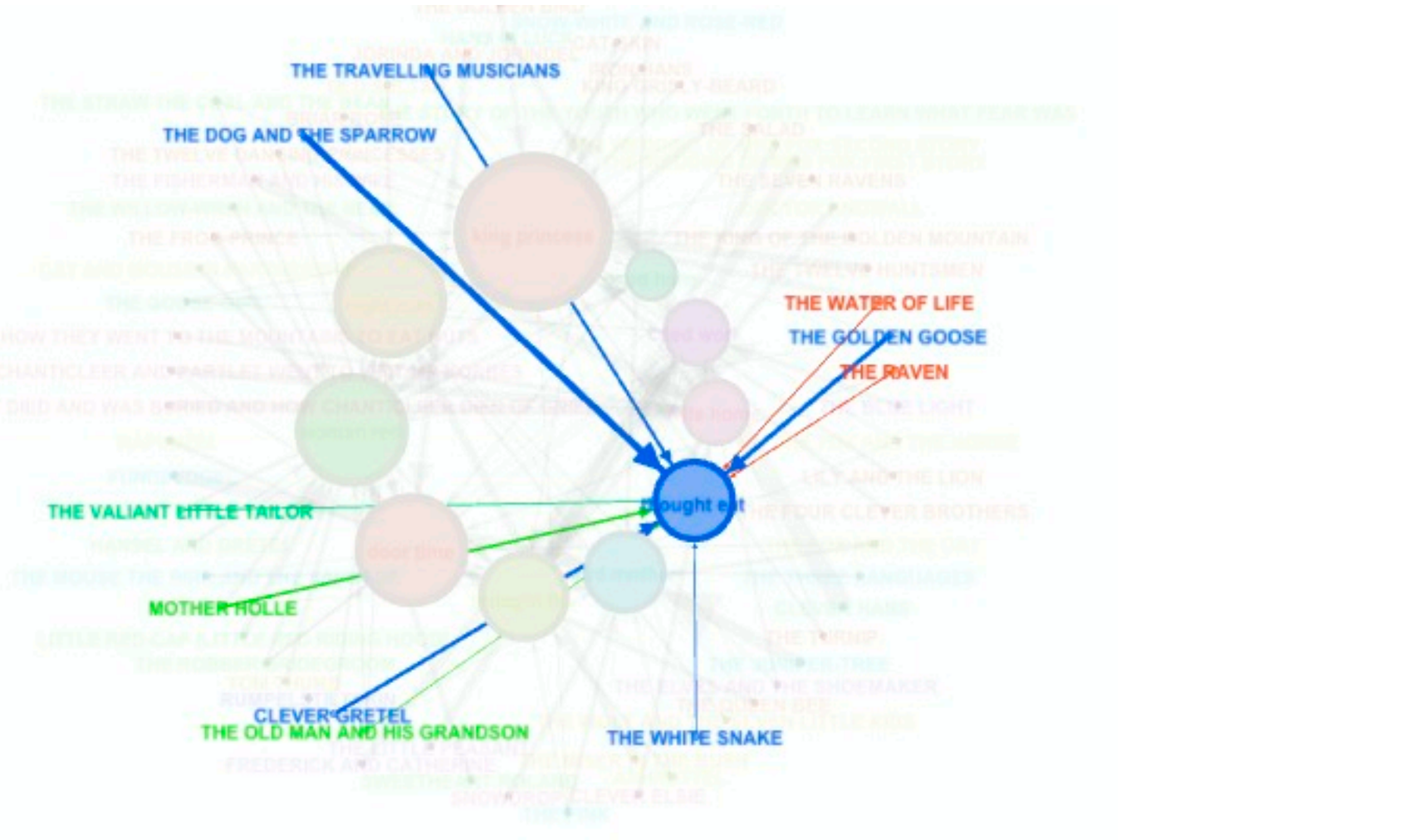
Hand-tweak to move the topic nodes inside.

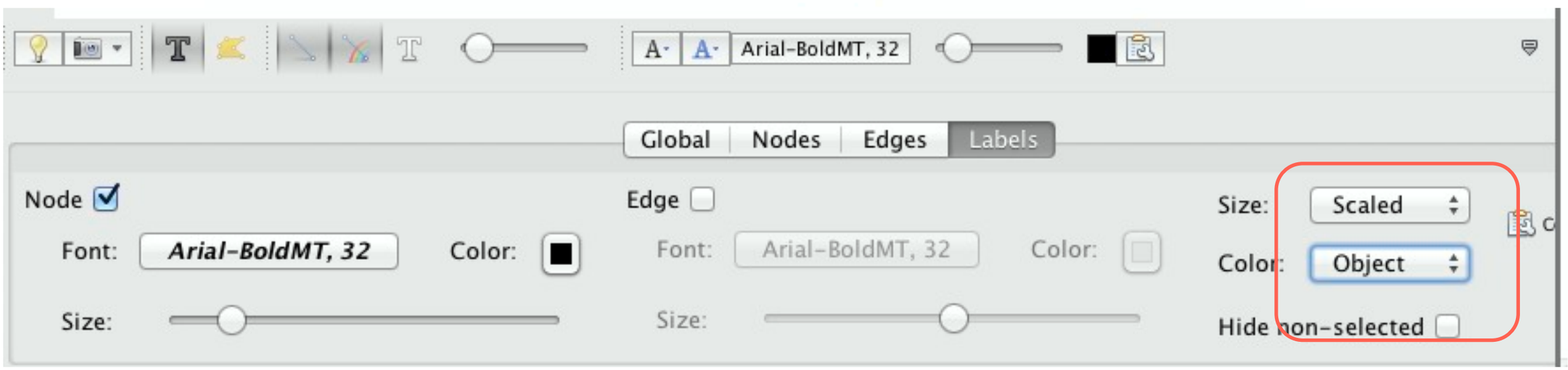


Turn on labels and adjust sizes...

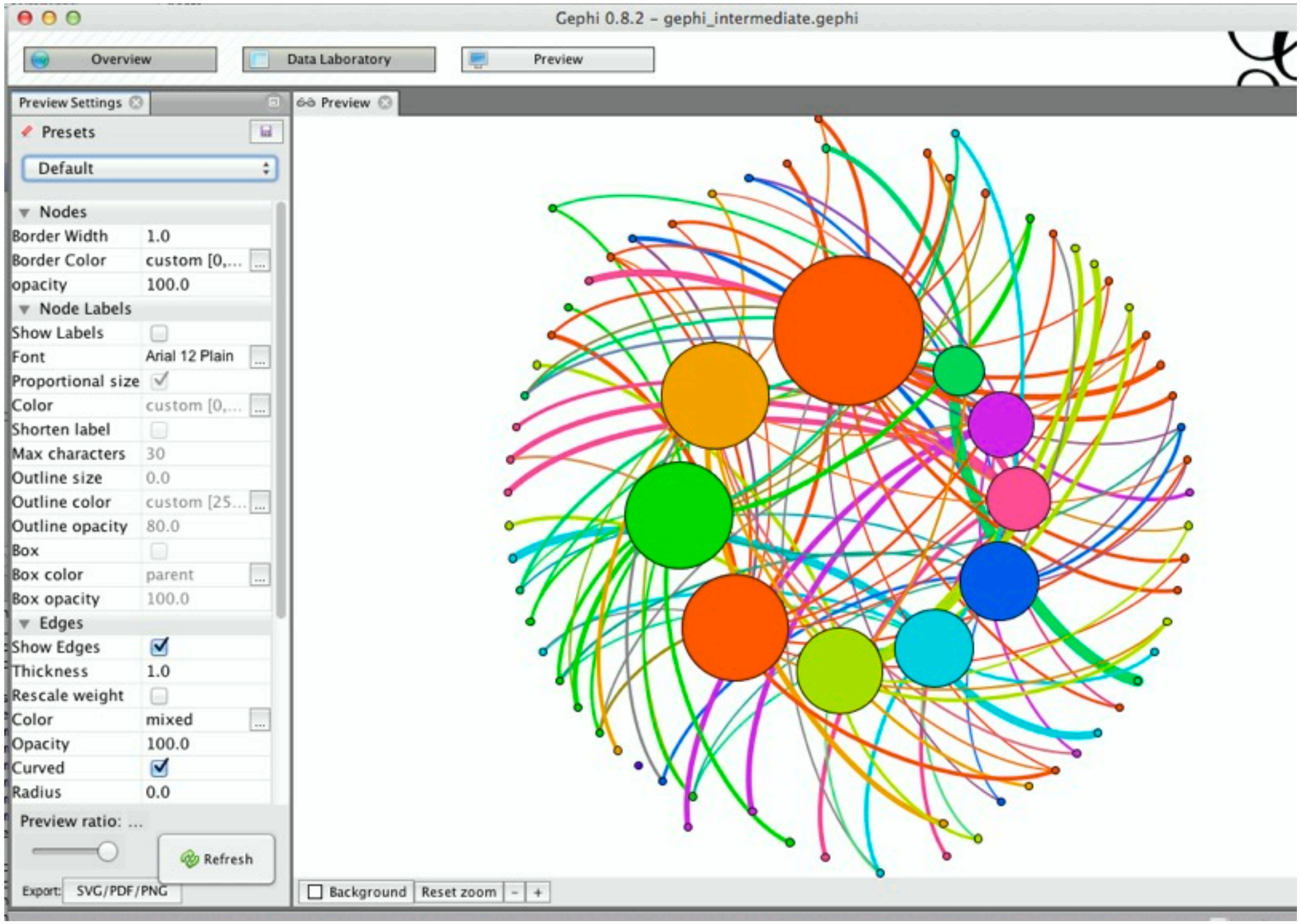


One option is color by destination node.





The “pretty” exportable version is on the Preview Tab. Finish adjusting in here.



w Settings

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r Width	1.0
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ty	100.0
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	custom [0,...
en label	☑
haracters	30
e size	0.0
e color	custom [25...
e opacity	80.0
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olor	parent
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Edges	☑
ness	1.0
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ty	100.0
d	☑
s	0.0
ge Arrows	
	3.0
ge Labels	
Labels	☐

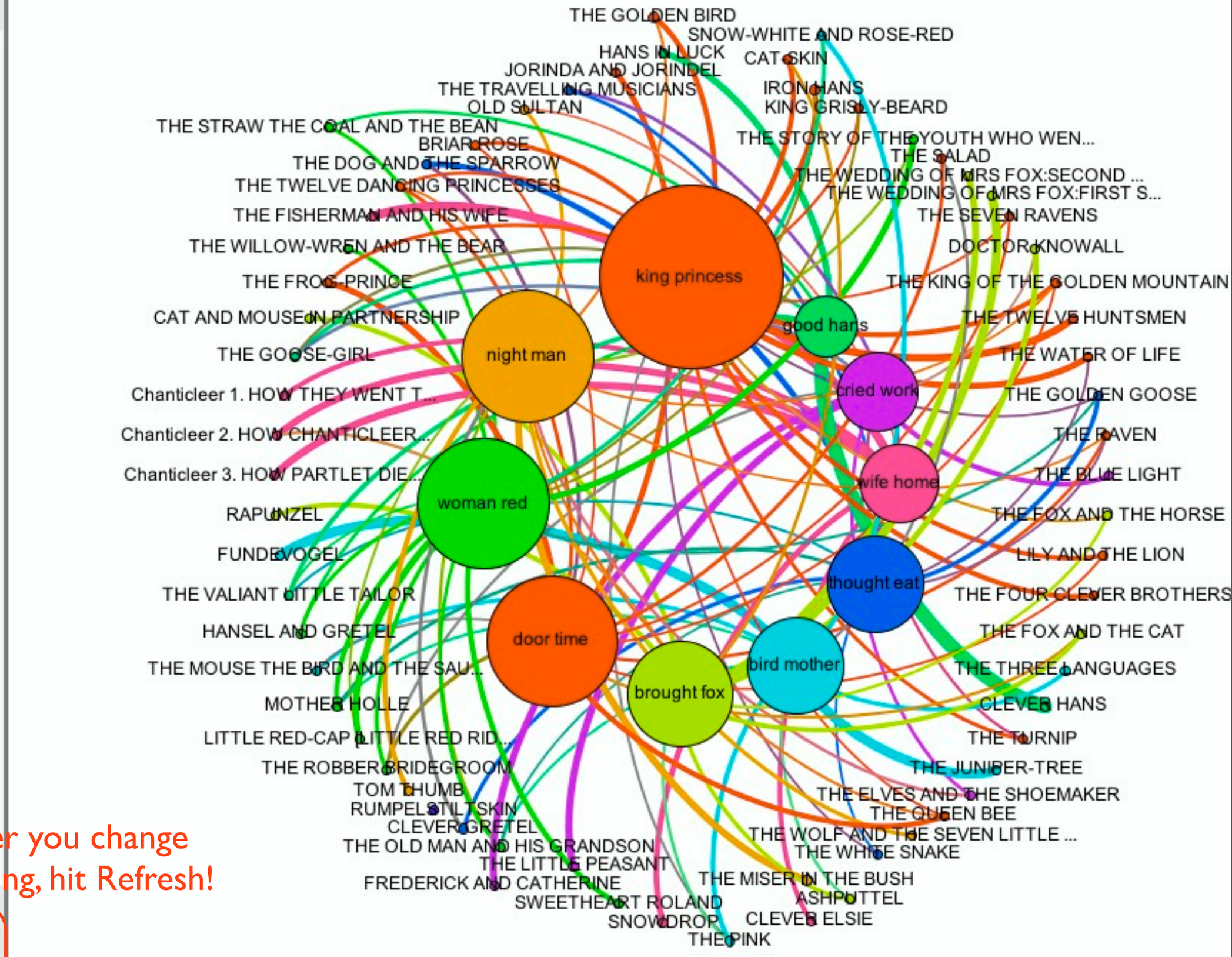
ew ratio: ...

Refresh

SVG/PDF/PNG

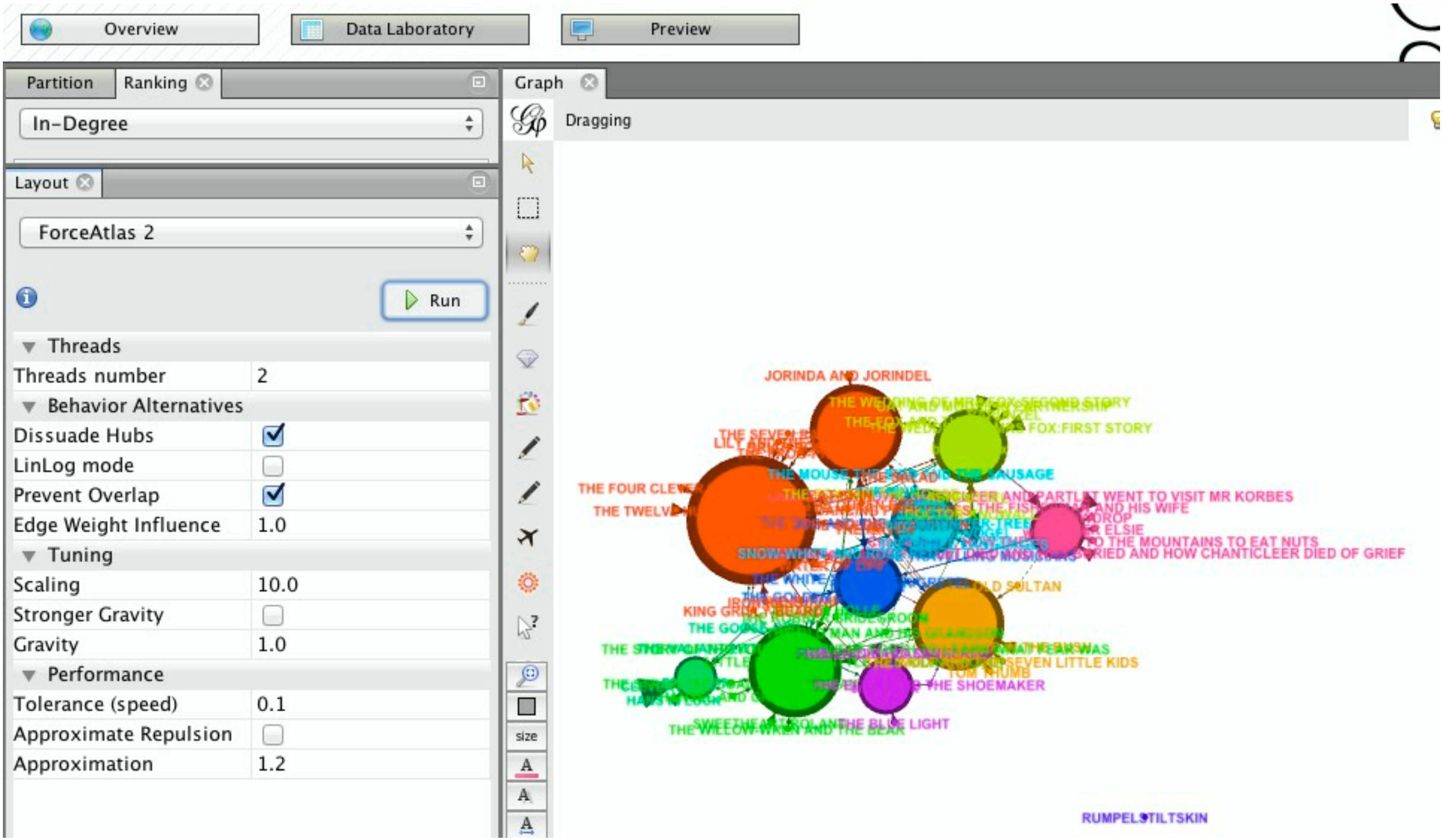
After you change anything, hit Refresh!

Preview

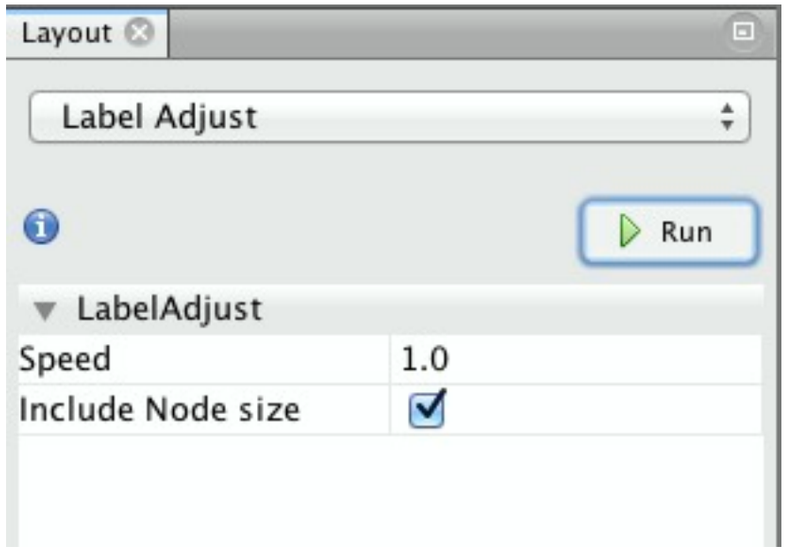


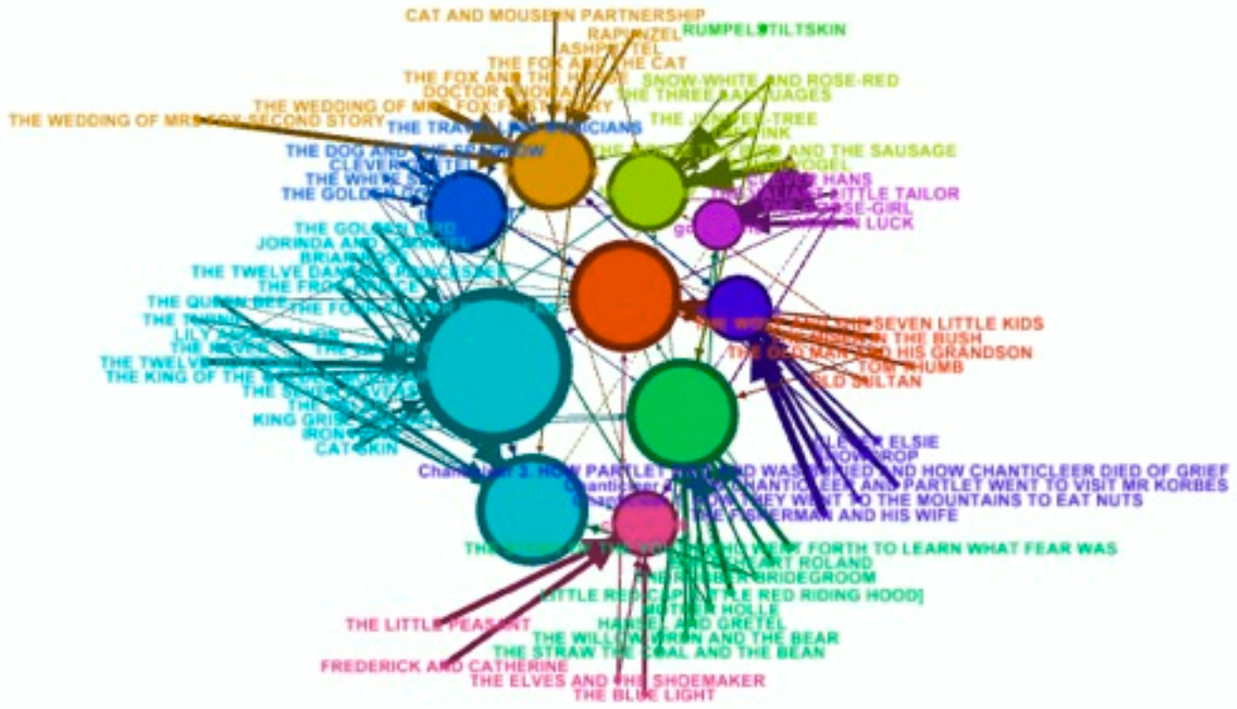
Background | Reset zoom | - | +

Another layout option is force-atlas2. Be careful with the settings! Note that Rumpelstiltskin will fly away.

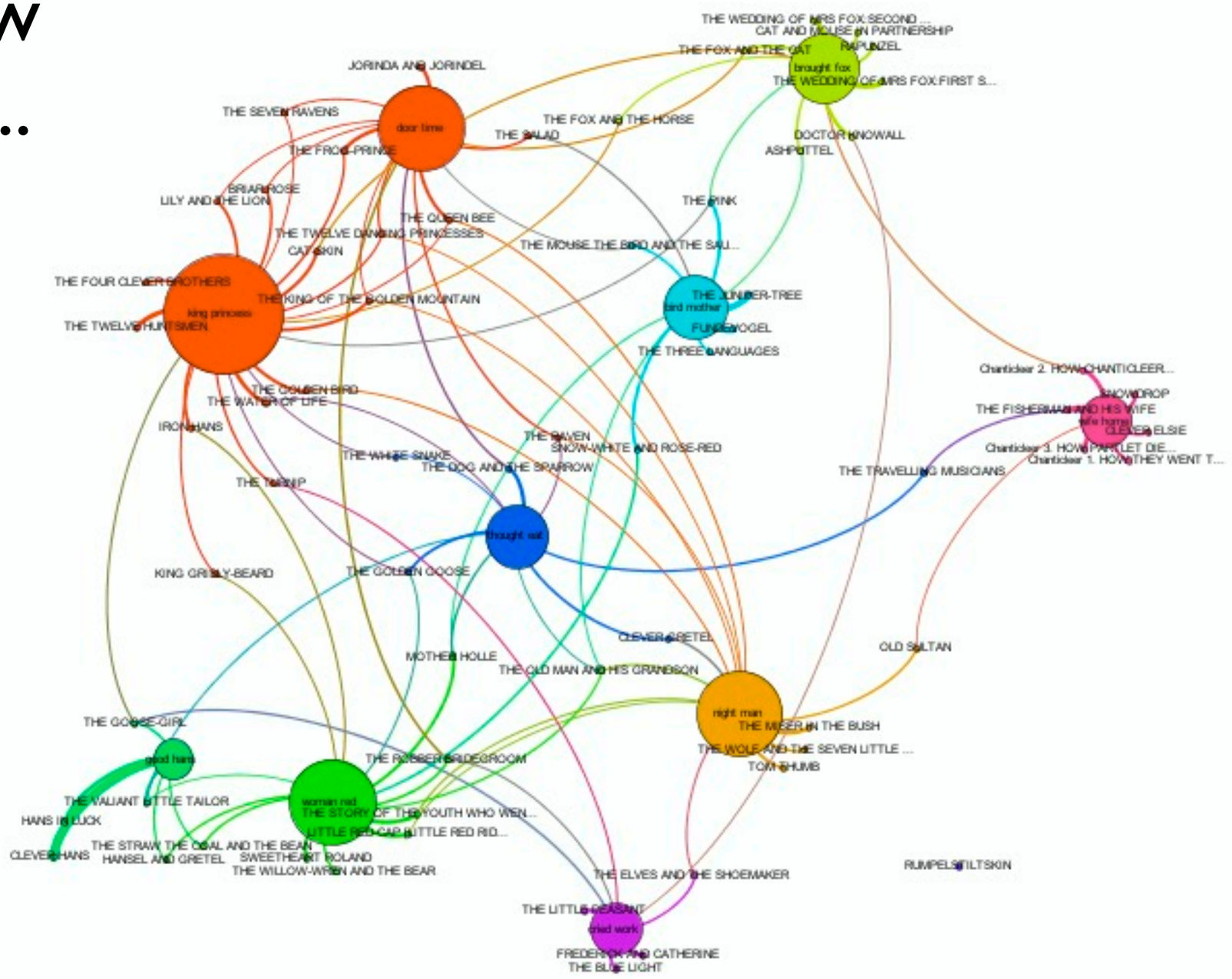


Always use Label Adjust is you use Force Atlas (or any one, actually).

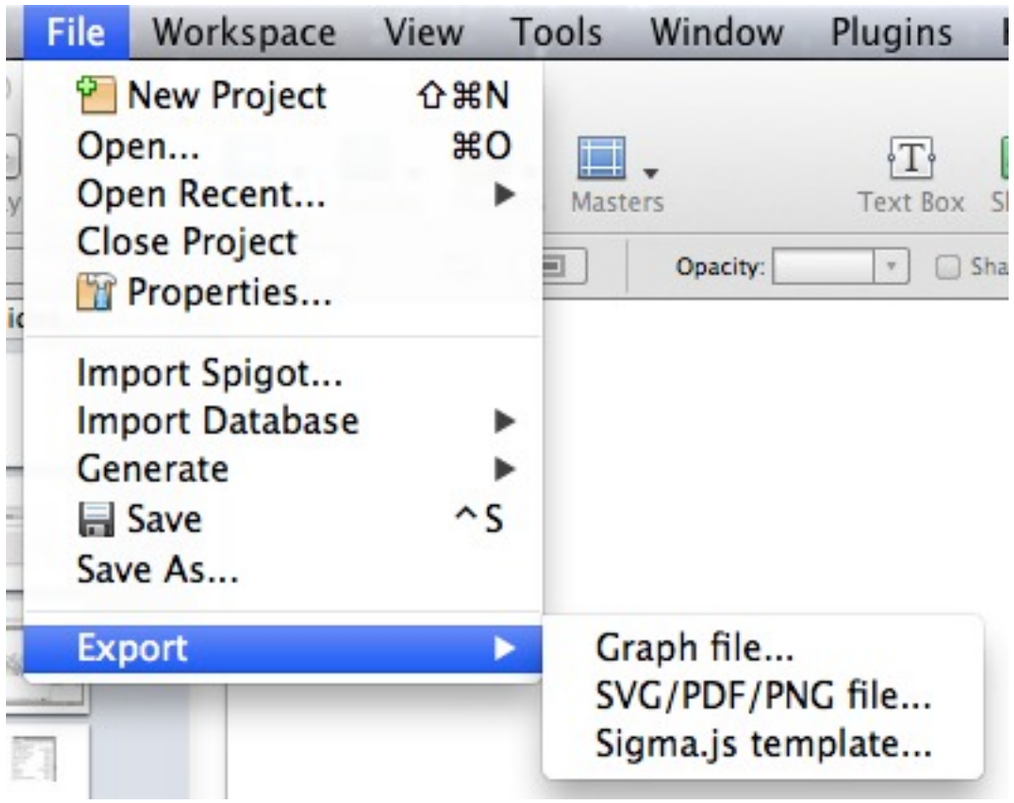




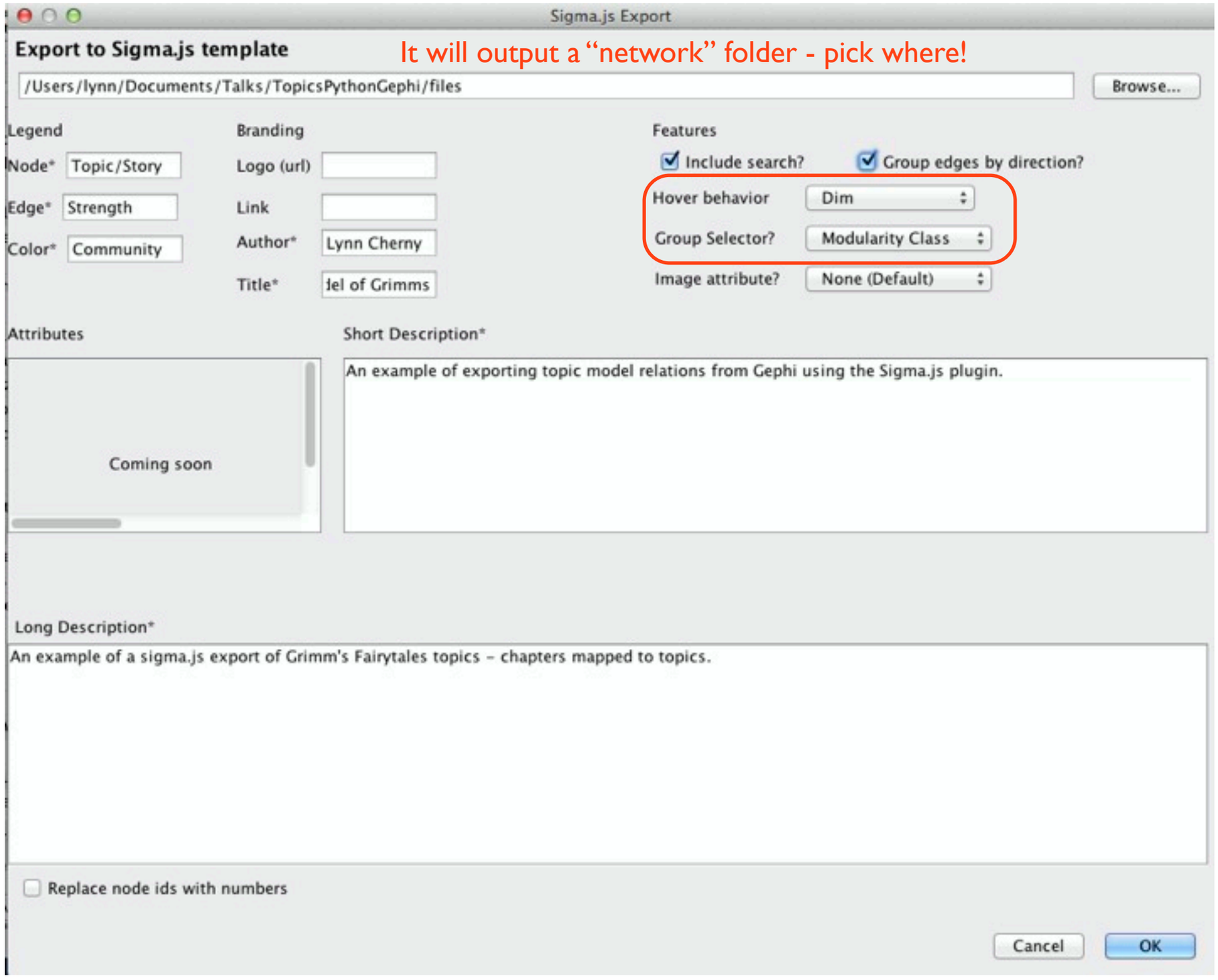
A Force Layout in Preview mode...



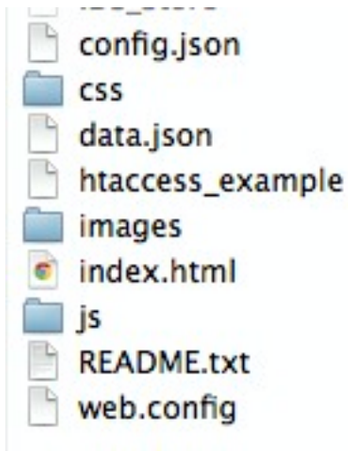
To export to an interactive web project after your Layout, pick Export... Sigma.js template.



Put in whatever useful, informative text you can supply. I like "Dim" for Hover behavior. Let's use Modularity Class for Group.



The "network" folder has these:



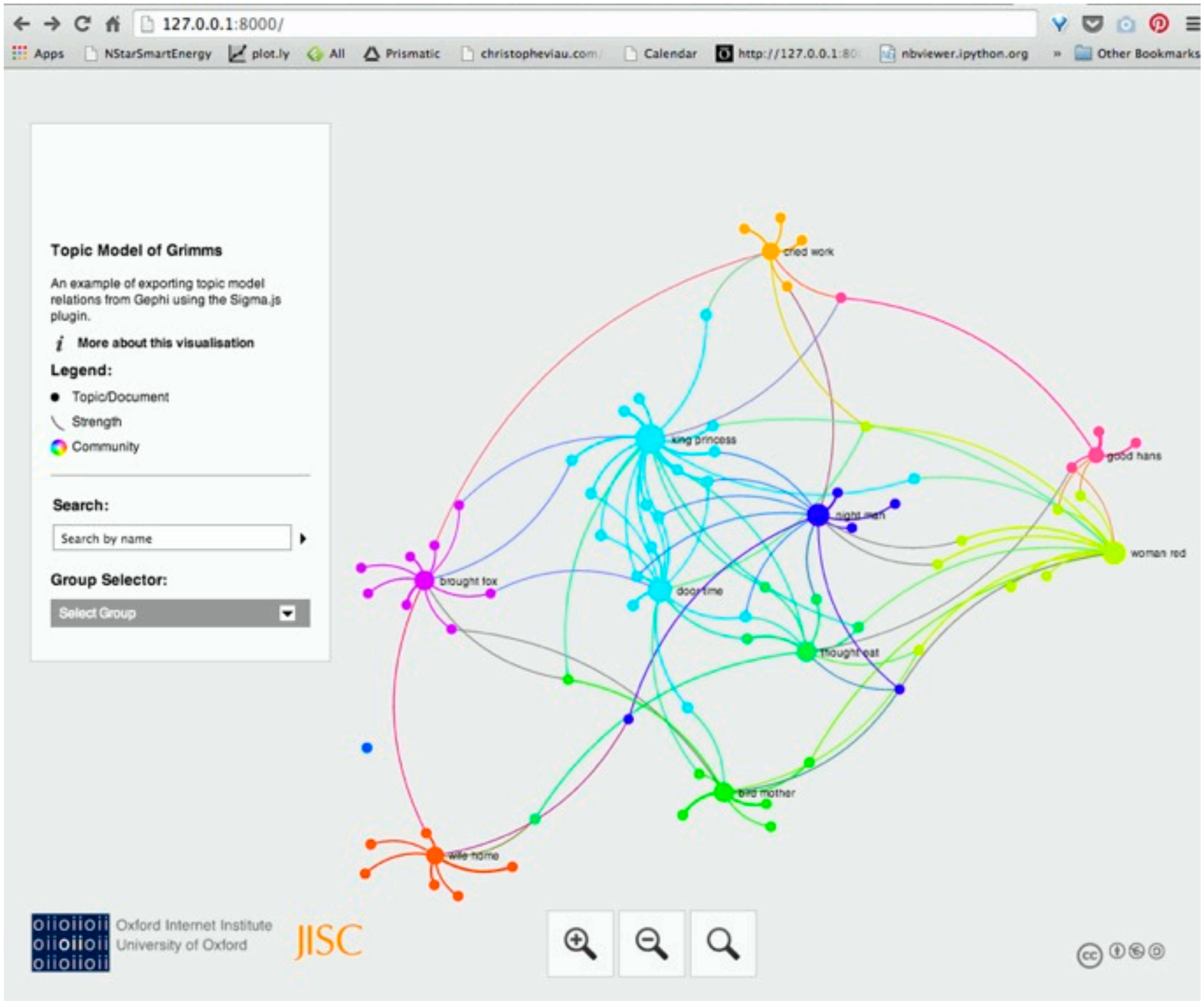
config.json

```
    "colorLabel": "Community",
    "nodeLabel": "Topic/Document"
  },
  "features": {
    "search": true,
    "groupSelectorAttribute": "Modularity Class",
    "hoverBehavior": "default"
  },
  "informationPanel": {
    "imageAttribute": false,
    "groupByEdgeDirection": true
  },
  "sigma": {
    "graphProperties": {
      "minEdgeSize": 1,
      "maxNodeSize": 20,
      "maxEdgeSize": 8,
      "minNodeSize": 7
    },
    "drawingProperties": {
      "labelThreshold": 10,
      "hoverFontStyle": "bold",
      "defaultEdgeType": "curve",
      "defaultLabelColor": "#000",
      "defaultLabelHoverColor": "#fff",
      "defaultLabelSize": 14,
      "activeFontStyle": "bold",
      "fontStyle": "bold",
      "defaultHoverLabelBGColor": "#002147",
      "defaultLabelBGColor": "#ddd"
    },
    "mouseProperties": {
      "minRatio": 0.75,
      "maxRatio": 20
    }
  }
}
```

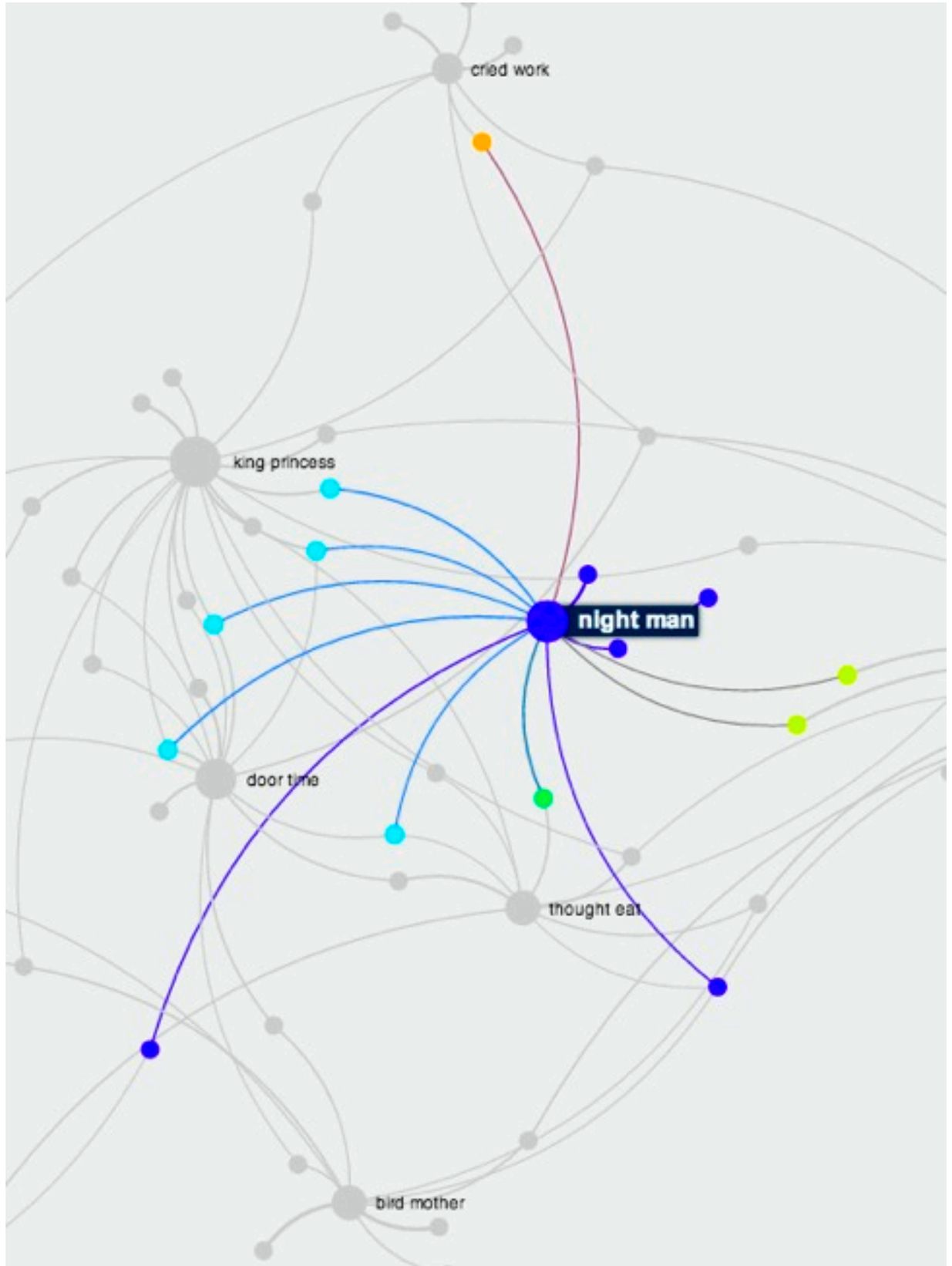
Edit config.json to increase some sizes:

Move your network folder to a web server or start one locally:

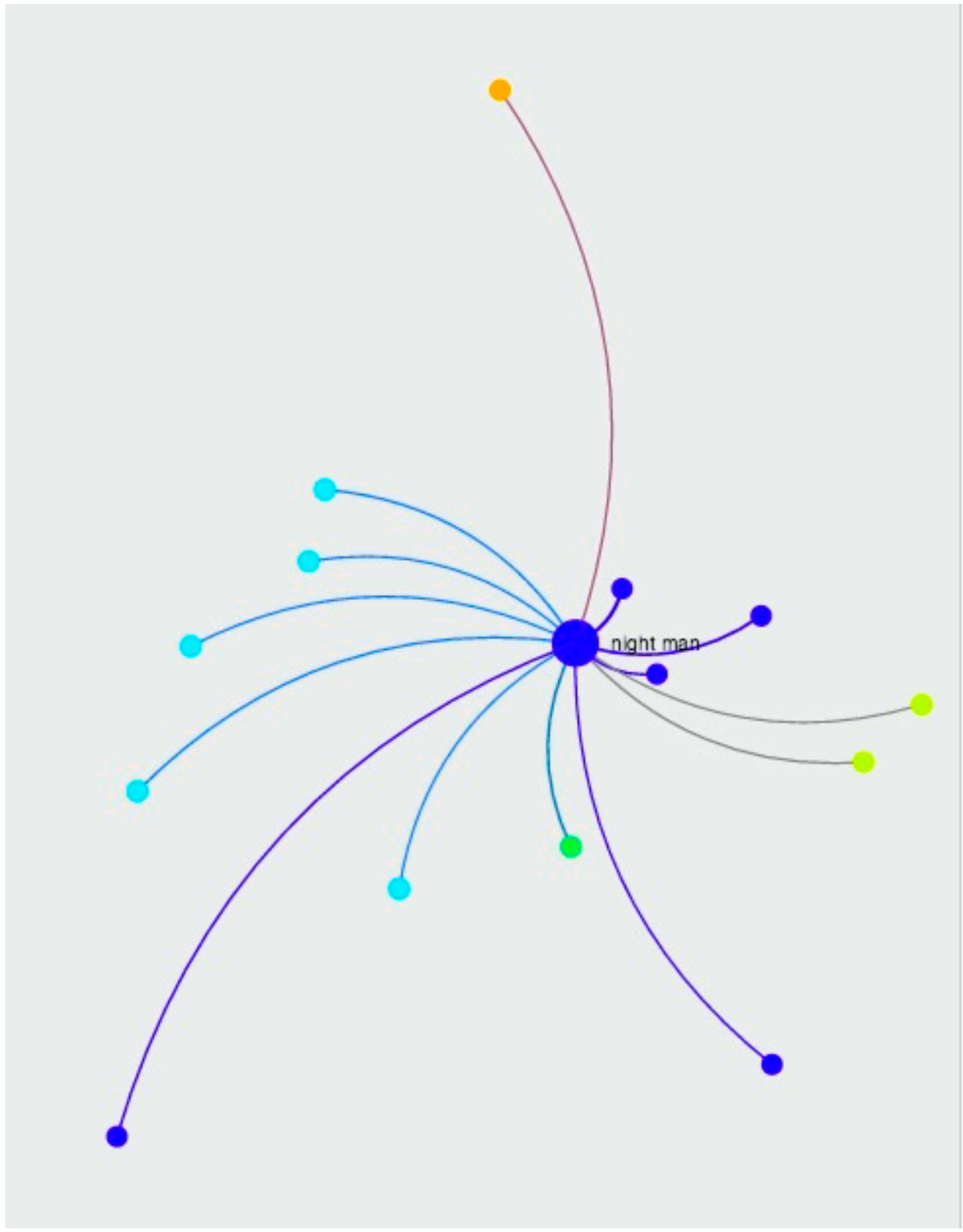
```
new-host-2:files lynn$ cd network
new-host-2:network lynn$ python -m SimpleHTTPServer 8000
Serving HTTP on 0.0.0.0 port 8000 ...
127.0.0.1 - - [30/Mar/2014 15:45:06] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [30/Mar/2014 15:45:07] "GET /js/jquery/jquery.min.js HTTP
```



At this level, rollovers dim unconnected nodes, showing only connected nodes. Only the largest node labels are visible (topics).



Clicking gives you info on the right side, including the text we uploaded to the graph file from python!



Information Pane

night man

Modularity Class: 4

text: "Top words:night man castle wood morning wolf father good dwarf asleep"

title: night man

Connections:

Mututal (0)
No mutual links

Incoming (14)
CLEVER GRETEL
LITTLE RED-CAP [LITTLE RED RIDING HOOD]
OLD SULTAN
THE ELVES AND THE SHOEMAKER
THE GOLDEN BIRD
THE KING OF THE GOLDEN MOUNTAIN
THE MISER IN THE BUSH
THE OLD MAN AND HIS GRANDSON
THE QUEEN BEE
THE RAVEN
THE STORY OF THE YOUTH WHO WENT FORTH TO LEARN WHAT FEAR WAS
THE TWELVE DANCING PRINCESSES
THE WOLF AND THE SEVEN LITTLE KIDS
TOM THUMB

Outgoing (0)
No outgoing links

Information Pane

CLEVER GRETEL

Modularity Class: 8

text: " Chapter CLEVER GRETEL There was once a cook named Gretel who wore shoes with red heels and when she walked out with them on she turned herself this way and that was quite happy and thought: 'You certainly are a pretty girl!' And when she came home she drank in her gladness of heart a draught of wine and as wine excites a desire to eat she tasted the..."

title: CLEVER GRETEL

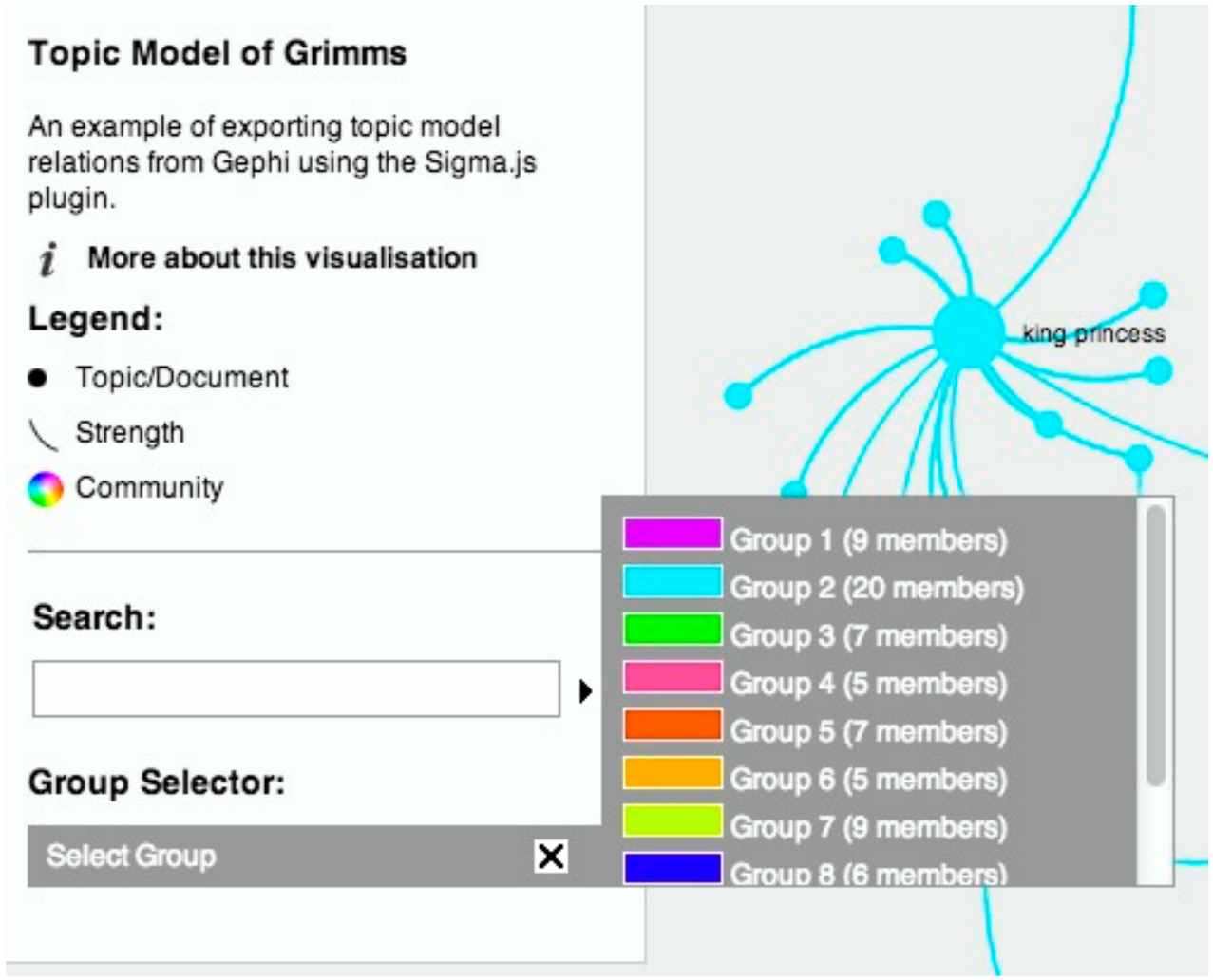
Connections:

Mututal (0)
No mutual links

Incoming (0)
No incoming links

Outgoing (2)
night man
thought eat

The groups are the modularity classes found. You can search for a node name too...



- The utility of this graph is improved by useful text/content additions in the graph file (the python exercise we went thru first) and some tweaks in the output visuals.

- It could be even better by post-processing the modularity groups to have better names than “group 2”...

- NOTE: The sigma.js exporter from Gephi is out of date, using an old sigma.js format. It also seems to not differentiate weights/ sizes of edges very well. Caveats!

Hope this helped!

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