

# NETWORK ANALYSIS ON A SHOESTRING

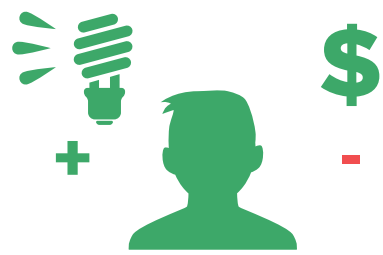
## accessible, creative and free!

João Martinho [joao@planpp.com] & William N. Faulkner [wnfaulkner@gmail.com] - São Paulo, Brazil

### who are you?



**REASONABLY COMPUTER LITERATE**  
Willing to grow skills through self-teaching



**IDEA RICH AND CASH POOR**  
Willing to do a little extra work for a cheap solution

### how to collect data?



**PRIMARY DATA**  
Interview, Survey, Focus Groups, etc.



**SECONDARY DATA**  
Official Databases, Web Analytics, etc

### how can you do it?

1

#### EXPORT SURVEY DATA TO EXCEL

1. Export and encode the data collected

	Person #1	Person #2	Person #3	Person #...
Community Association	No	No	Yes	...
Social Movement	No	No	No	...
Human rights/social justice NGO	No	No	No	...
Member of human rights/social justice NGO	No	No	Yes	...
International Organization	Yes	Yes	No	...
Individual Activist	No	No	Yes	...
Academic/Scholar	No	No	No	...
Independent media activist	Yes	No	No	...

2

#### REFORMAT INTO AN EDGELIST

2. This step may be simple or involve a bit of Excel formulas, depending on the format of your data. The edgelist defines all of the connections within the diagram, and is all that NodeXL needs to form a network diagram

Vertex 1	Vertex 2	Co-occurrences
Social Movement	Human rights/social justice NGO	11
Social Movement	Academic/Scholar	6
Community Association	Social Movement	5
Community Association	Member of human rights/social justice NGO	4
Community Association	Individual Activist	2
....	...	....

3

#### COPY-PASTE INTO NODEXL

3. Once you have the NodeXL template and edgelist, simply copy-paste the edgelist into the “Edges” worksheet of the template



Copy



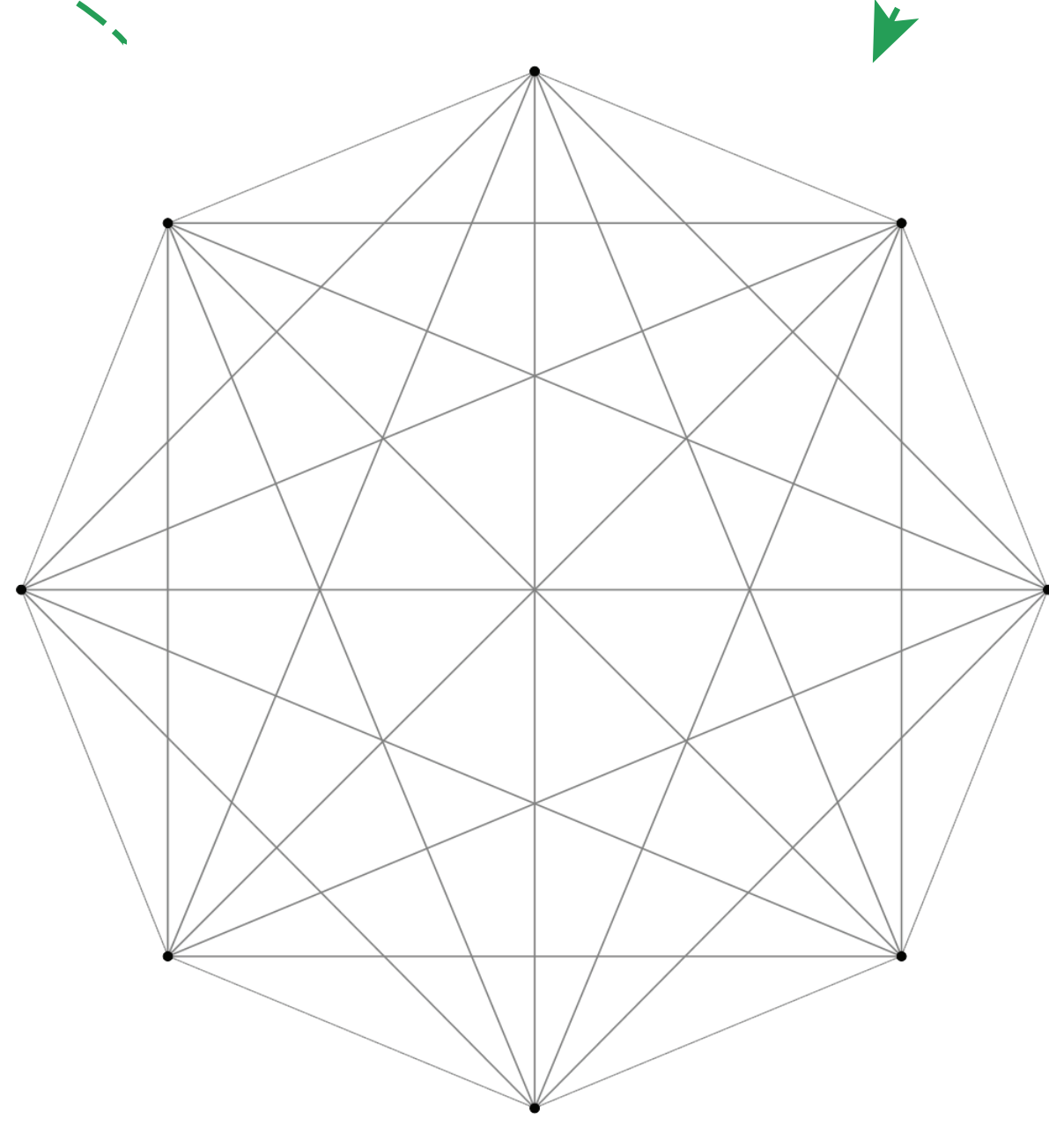
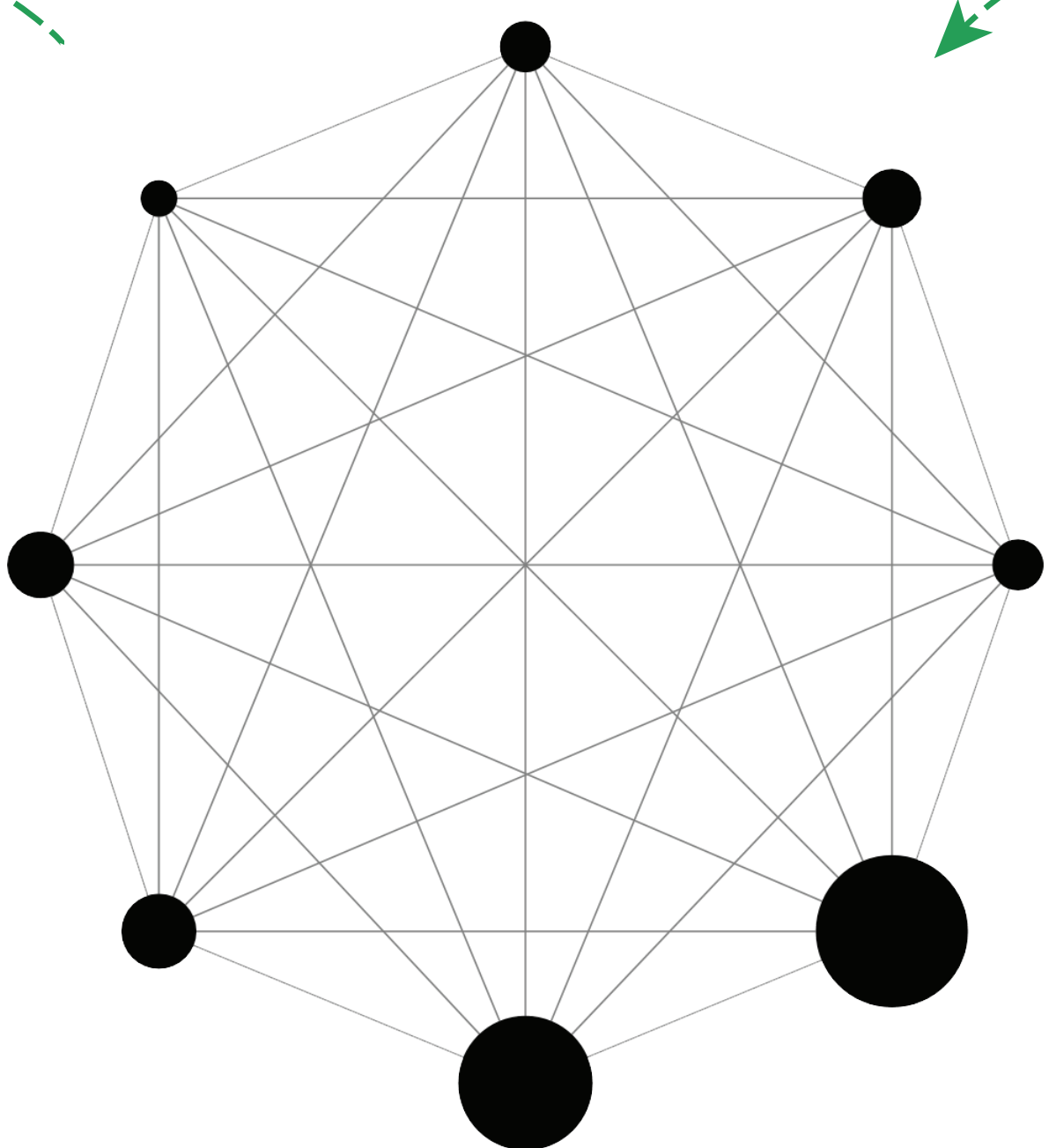
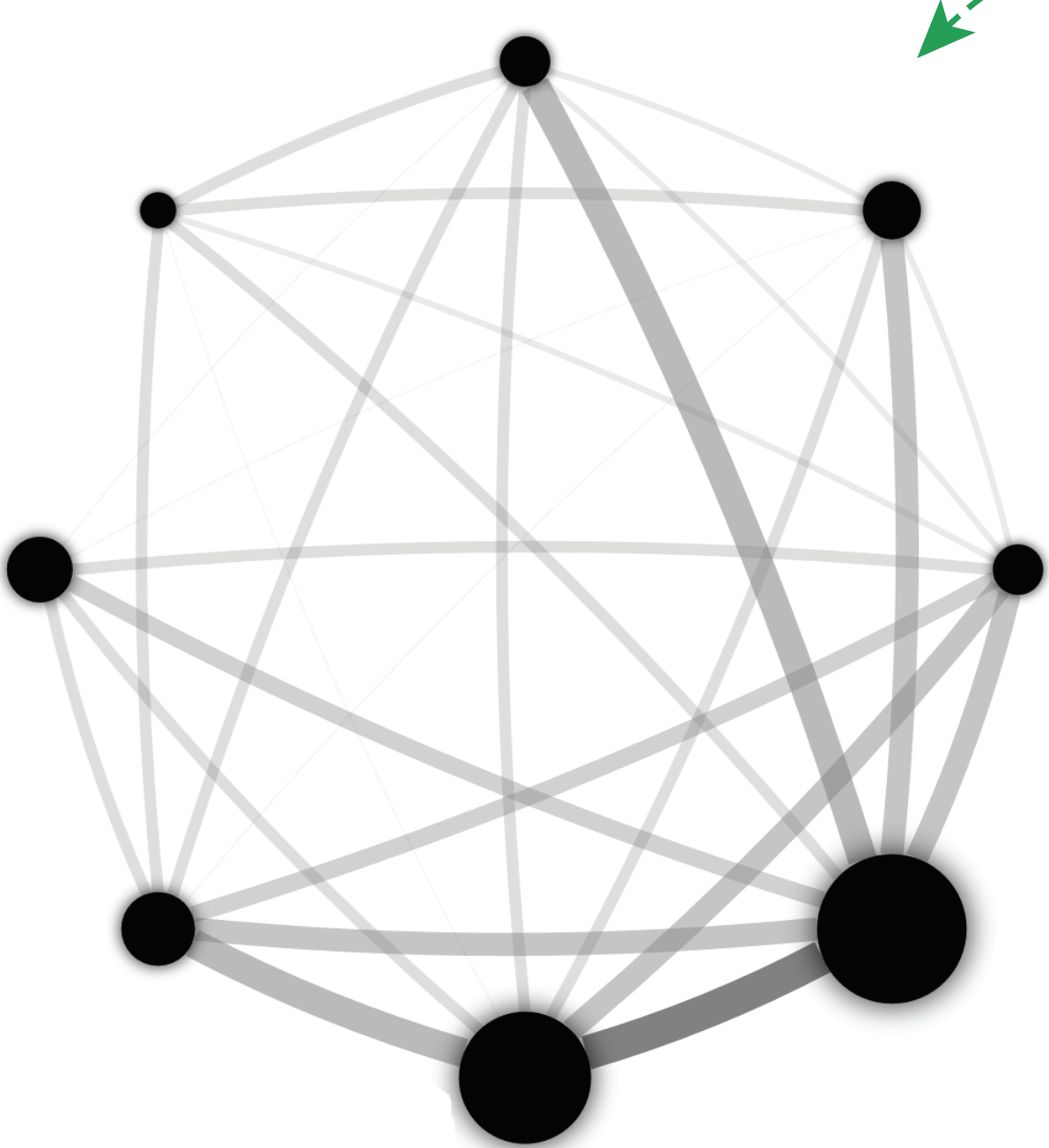
Paste

4

#### FINALIZE REFORMATTING AND ADJUST VISUALIZATION SETTINGS

4. Depending on your data, you may have to prepare it further before NodeXL can visualize it with two built-in NodeXL functions: a) “Count and merge duplicate edges” and b) “Get vertices from edges worksheet”. You can then click on “Show Graph” to see the basic network visualization.

Usually, the basic visualization will need some tweaking (design, color, size, opacity) to start to reveal the important patterns in the data. For those accustomed to writing simple formulas in Excel, all of those aspects should be relatively easy to adjust.



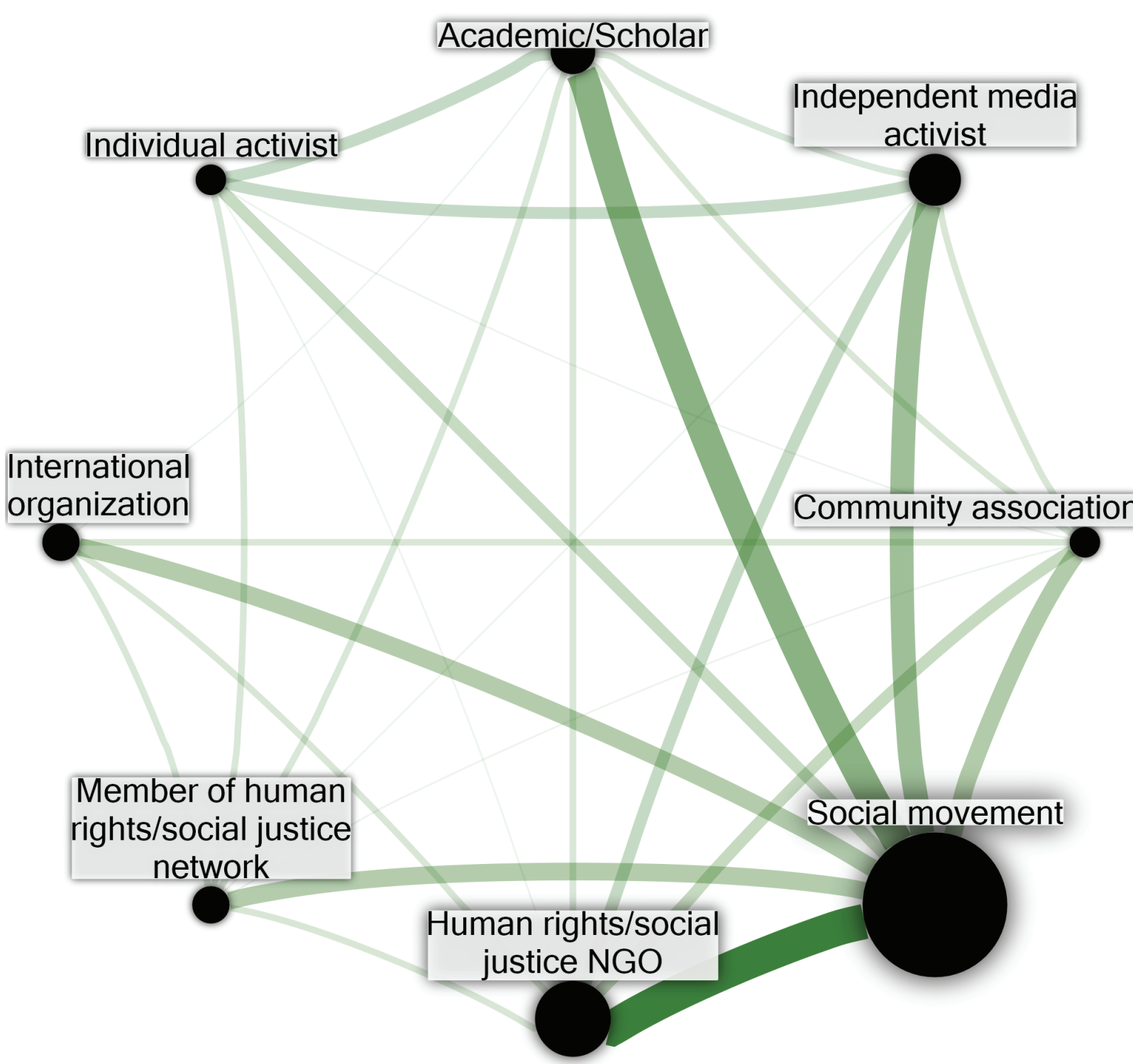
### #1: multiple response questions

This example visualizes how survey respondents answered the question “How would you describe the type of network, movement or organization you represent? (more than one answer is possible. Please check at least one).”

Network-style visualization displays not only the distribution of choices, but also which combinations were most commonly selected. For instance, Academics in this respondent group disproportionately identified themselves as part of a social movement, while none of the individual activists also considered themselves as belonging to an international organization.

The diagram itself provides no immediate answers, but the map helps to pinpoint some potentially key questions for the interview phase, like:

- How do academics participate in social movements? If they were more involved in community associations, media activism, NGOs, human rights networks, or international organizations, might that make a difference?
- What about being an individual activist or being in an international organization? Does that preclude participation in the other?
- Is “Social Movement” a catchall phrase which disguises vast internal heterogeneity or do all of the different organizational types actually work in concert?



### #2: facebook posts likes and comments

This example demonstrates how to use simple network visualization and analysis to help understand the behavior of the followers of a business’ Facebook page and adapt the company’s social media communication strategy accordingly.

Plan Políticas Públicas is a private M&E consulting firm based in São Paulo, Brazil. At the moment, about 800 people follow the company’s Facebook

page, which is updated with regular posts at the rate of two per week.

The diagram below visualizes the last 50 posts on the page and the social media interactions around them as measured by ‘likes’ and comments. NodeXL features allow the data to be automatically downloaded and formatted for visualization directly from Facebook.

- people
- ◆ non sponsored posts
- ◆ sponsored posts

#### Sponsored Posts

In the same vein, interactions with sponsored posts show an interesting pattern: the graphic suggests that paying for promotion skews the Facebook algorithm towards generating a large number of ‘likes,’ but does not necessarily increase the level of engagement with the sponsored posts, even when I based the promotion on targeted advertisement.

#### Interaction Quality

The visualization displays the difference between the number of interactions and the quality of the interaction. Most of those who ‘liked’ or commented on the most popular posts never interacted again with the material on the page: popularity, but not engagement.

