Social and Information Networks

Tutorial #3: Social Influence

University of Toronto CSC303

Winter/Spring 2023

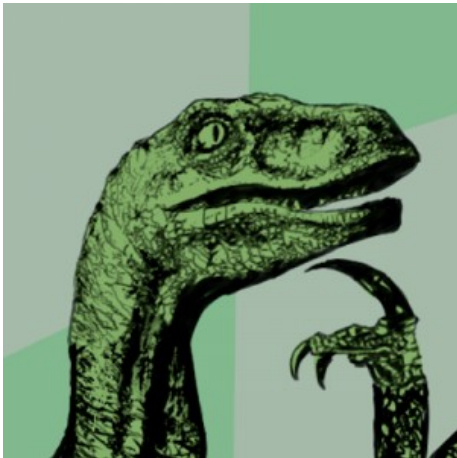Ian Berlot-Attwell

Week 4: Jan 30-Feb 3

Today's agenda

In lecture we've covered Chapter 4 of the textbook looking at Selection and Social Influence.

Today:

- Questions from Lecture
- Accessing NetLogo remotely
- Examples of Selection vs. Social Influence
- Quercus Quiz

Questions?

Accessing NetLogo remotely

Instructions on various ways to remotely access a graphical interface for the teach.cs labs can be found at the CS teaching labs website:
https://www.teach.cs.toronto.edu//using_cdf.html

You will need this for Assignment 1 to run NetLogo.

On Linux:
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>>> ssh -X USERNAME@teach.cs.toronto.edu
>>> netlogo
```

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Demo time!

Homophily

Can we think of examples where we might see homophily? How could
influence or selection drive homophily in these examples?

Examples: Obesity & Divorce

Homophily has been observed in both obesity and divorce; this was studied by (Christakis et al.) and (McDermott et al.) respectively.
The observed homophily could be due to Influence, Selection, or Confounding variables (e.g. sharing a local economic downturn). What do we think?

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They used a longitudinal dataset from the Framingham Heart Study. They used tracking forms where the participants listed contact friends & family to create the social network. Consequently these friendships are directed; can we use this?

Examples: Obesity & Divorce

Both studies were looking for influence.

They checked for confounding variables by seeing if the direction of relationships had an impact – if the effect is solely due to confounding variables then direction should be irrelevant.

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Specifically, they looked to see if they could predict a person's BMI (resp. marital status) from the BMI (resp. marital status) of their friends. Any problems with this idea?

Examples: Obesity & Divorce

To help control for selection they conditioned on the lagged dependent variable (i.e. BMI at previous examination or marital status at previous examination respectively)
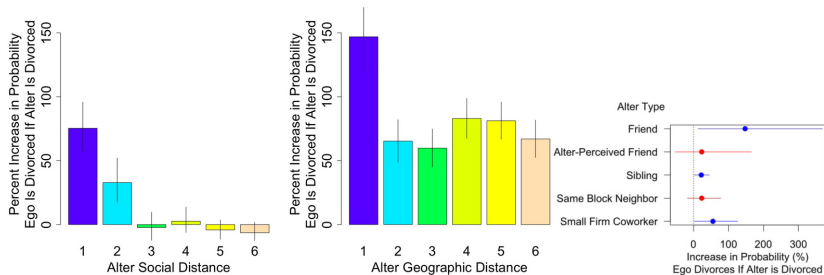
Examples: Obesity & Divorce

- Looking for influence
- Predict a node's state from its friends' states
- Control for confounding by checking if direction of relationships had an impact
- Control for selection by conditioning at the node's previous state

Both studies found significant evidence for influence

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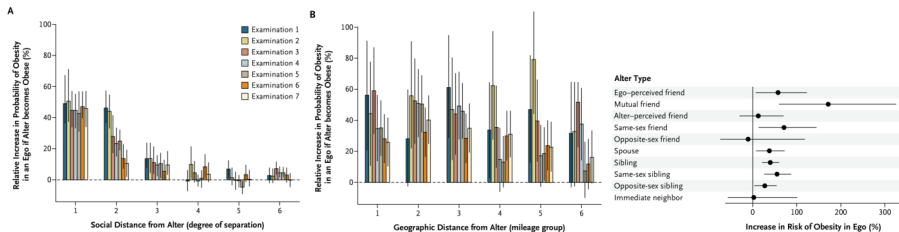- Control for selection by conditioning at the node's previous state

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Quercus Quiz