

Social Influence Forces Like-Minded Behavior

Blue Team 6

To Ride Along or Not?

How does the behavior of your peers influence your own behavior? Does this change over time?

We are interested in how **police misconduct** may be a **network** phenomena, and more so, **predicting** each individual's likelihood for complaints based on **aggregated information** about their peers.

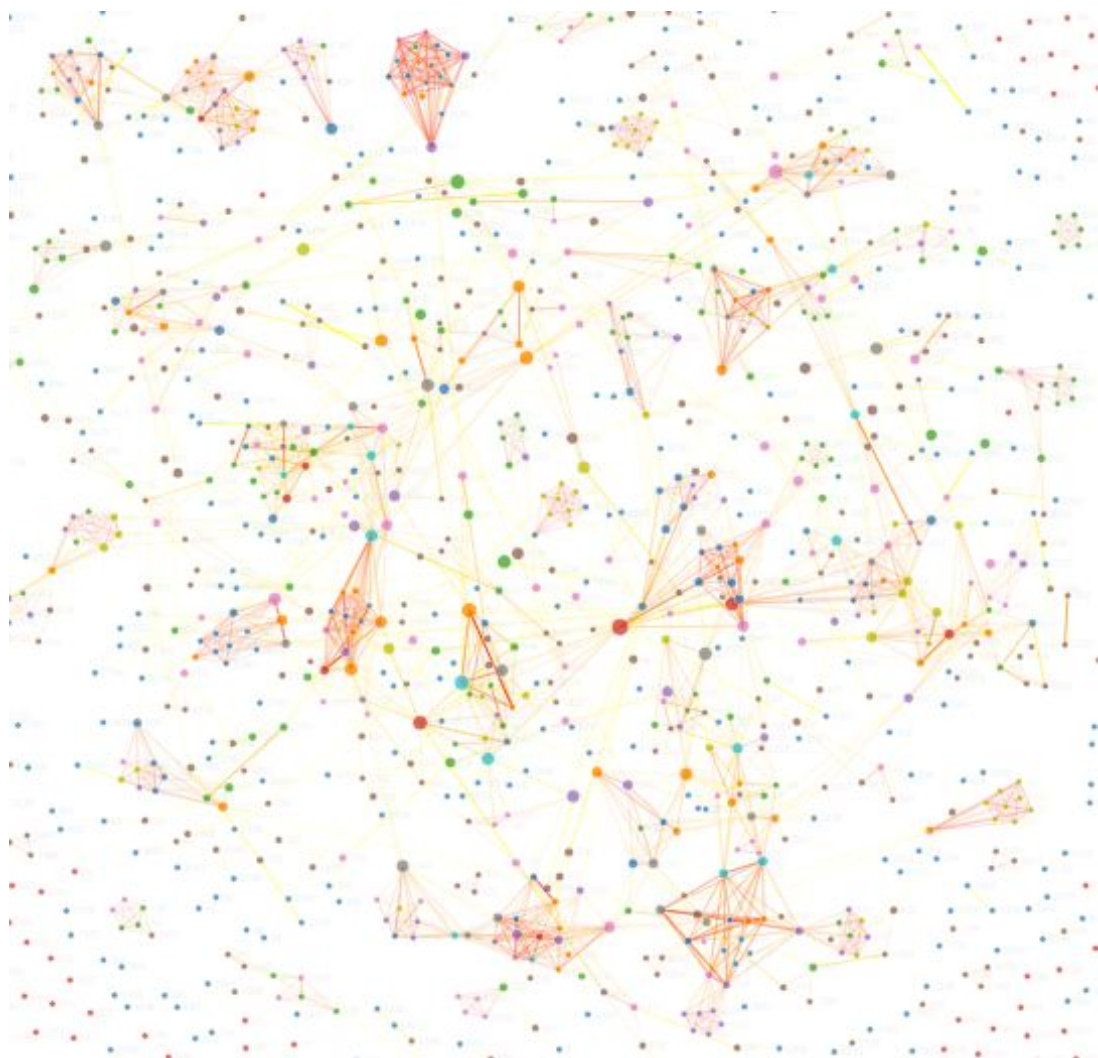


What are these complaints?



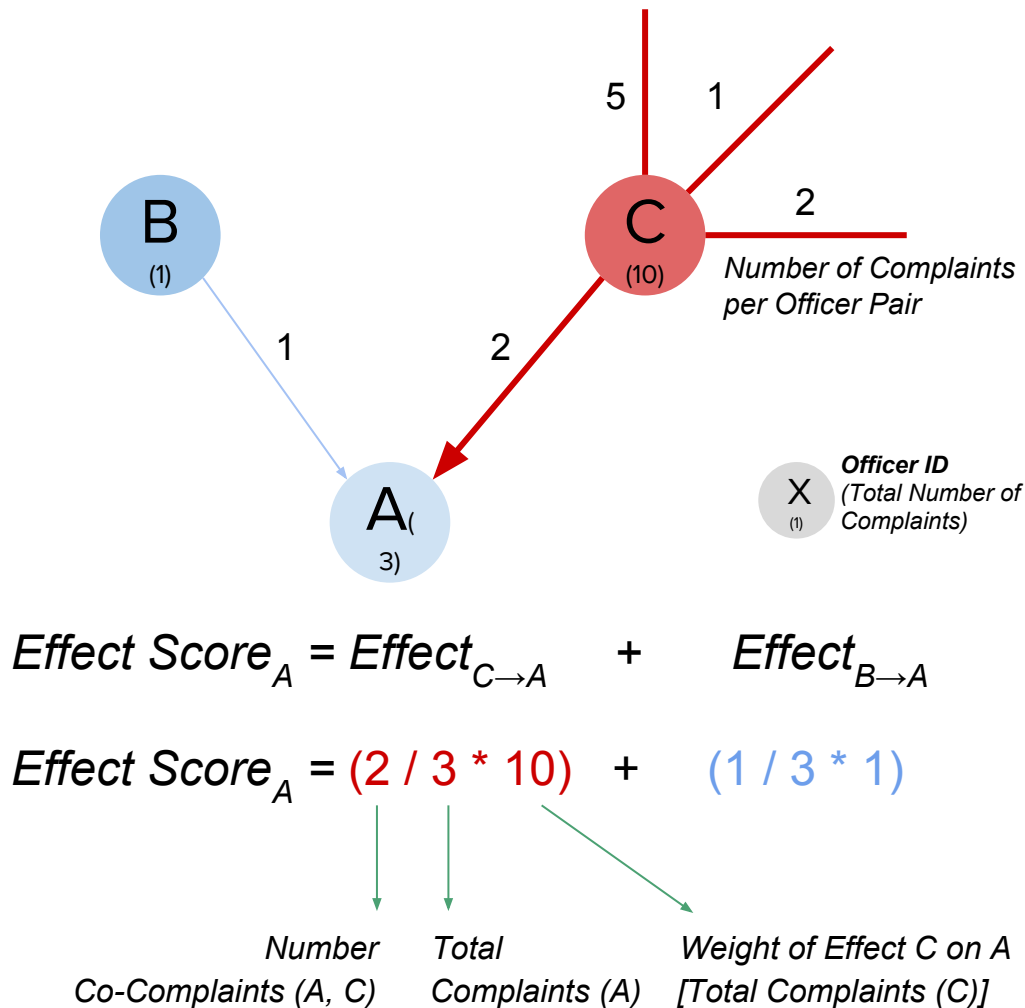
Repeat Police Complaints Occur in Cliques

- Edges were drawn for each officer *pair* with **more than 1 complaint** (repeat offenders) drawn from the Chicago Police Dept (CPD) from 2009 - 2016.
- This revealed highly connected, distinct subnetworks (**cliques**), suggesting group behavior dynamics.



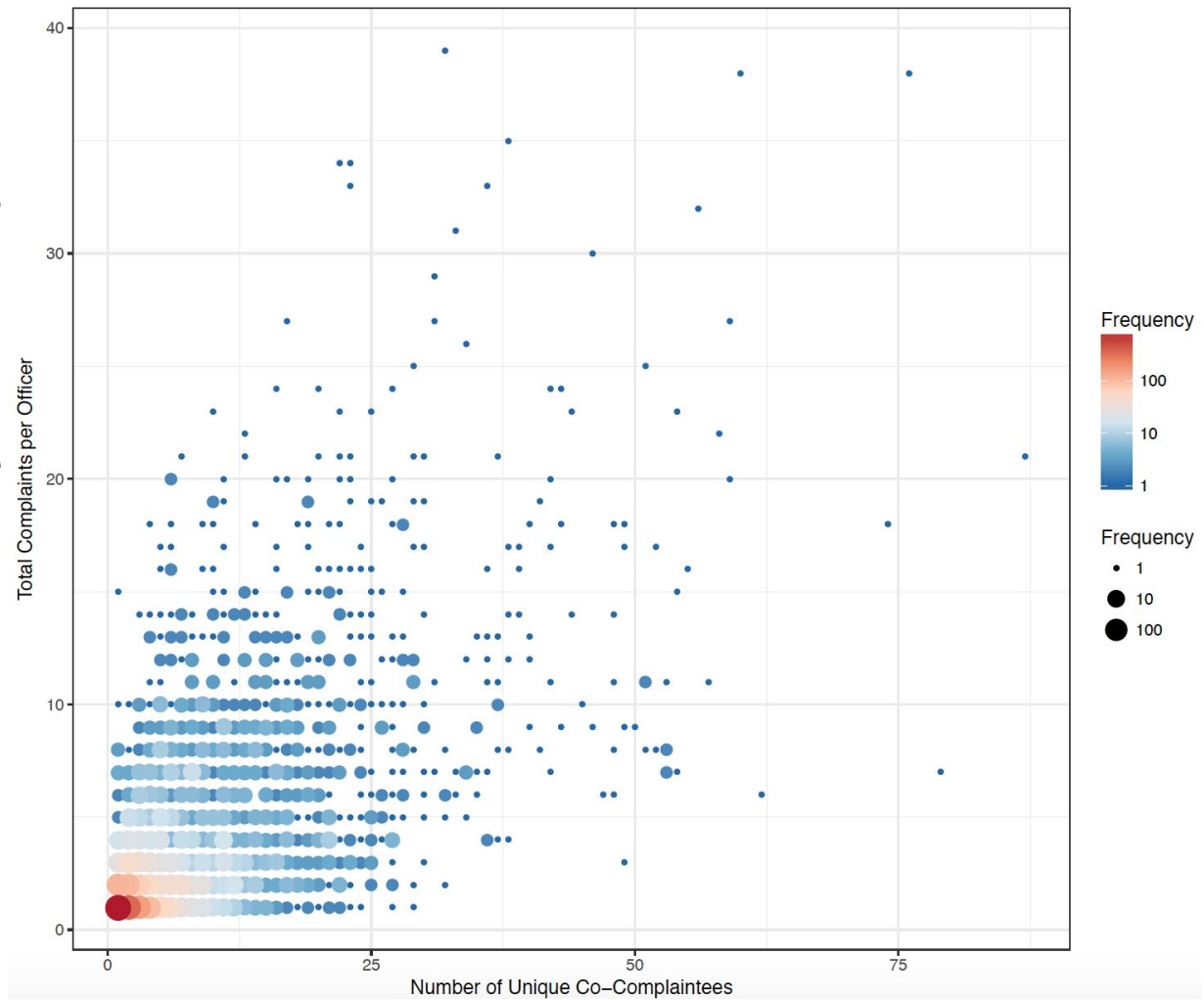
Summarising Bad Influences

The key here is to **summarise** the effects of the **network** on an individual. Here, the *Effect Score* does this in one metric for each officer, by looking at the *fraction of co-complaints* for a given pair, and then *weighting* by the total number of complaints the influencer has, such that “bad influences” are more heavily influencing the state of the officer.



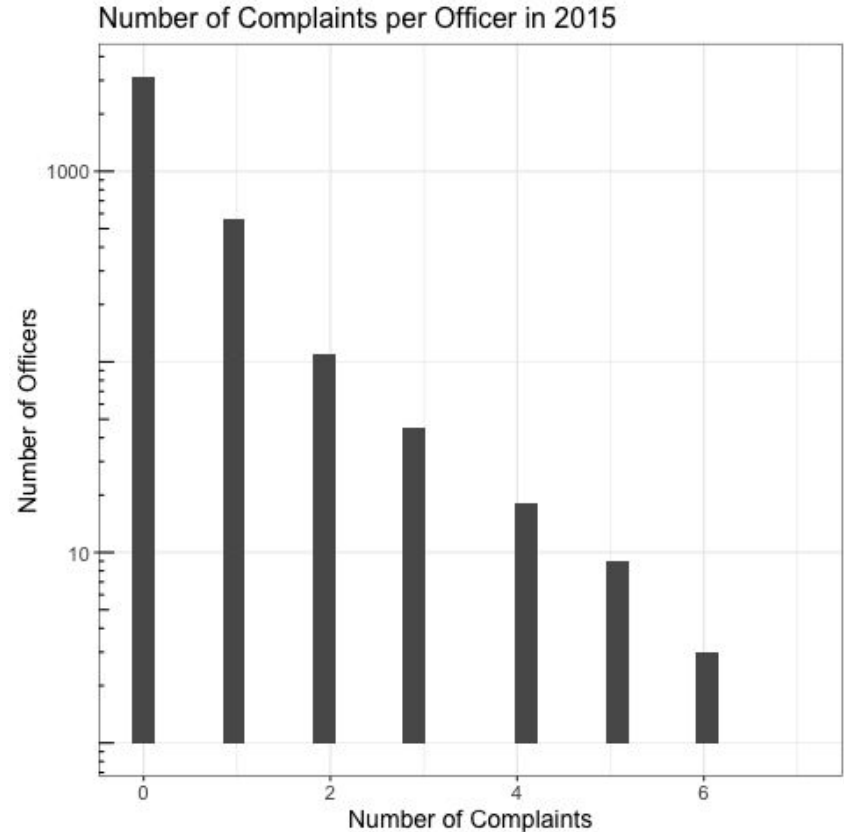
The top right region shows potential influencers

- Maximum Complaints
- High number of unique Co-Complainees



Zero outcome are due to two different types of officers:

1. Officers behave well. The only outcome possible is zero
2. Officers have misconduct. The outcome follows Poisson distribution.



Prediction Accuracy

Prediction		True # of Complaints in 2015							
		0	1	2	3	4	5	6	7
	0	2299	165	33	6	5	2	0	0
	1	451	162	57	27	11	4	3	0
	2	14	19	4	4	0	1	0	1
	3	2	2	1	0	0	0	0	0
	4	1	1	1	0	0	0	0	0
	5	2	0	0	0	0	0	0	0

Prediction

Accuracy: 75.2%

Variables: age,
effect score, total
number of
complaints in
previous 5 years.

Future scope

- Predicting the complaint categories
- Studying the effects of final outcome
- Study the social network of officers along with complaint network
- Study the dynamics of the network over time

Thank you



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