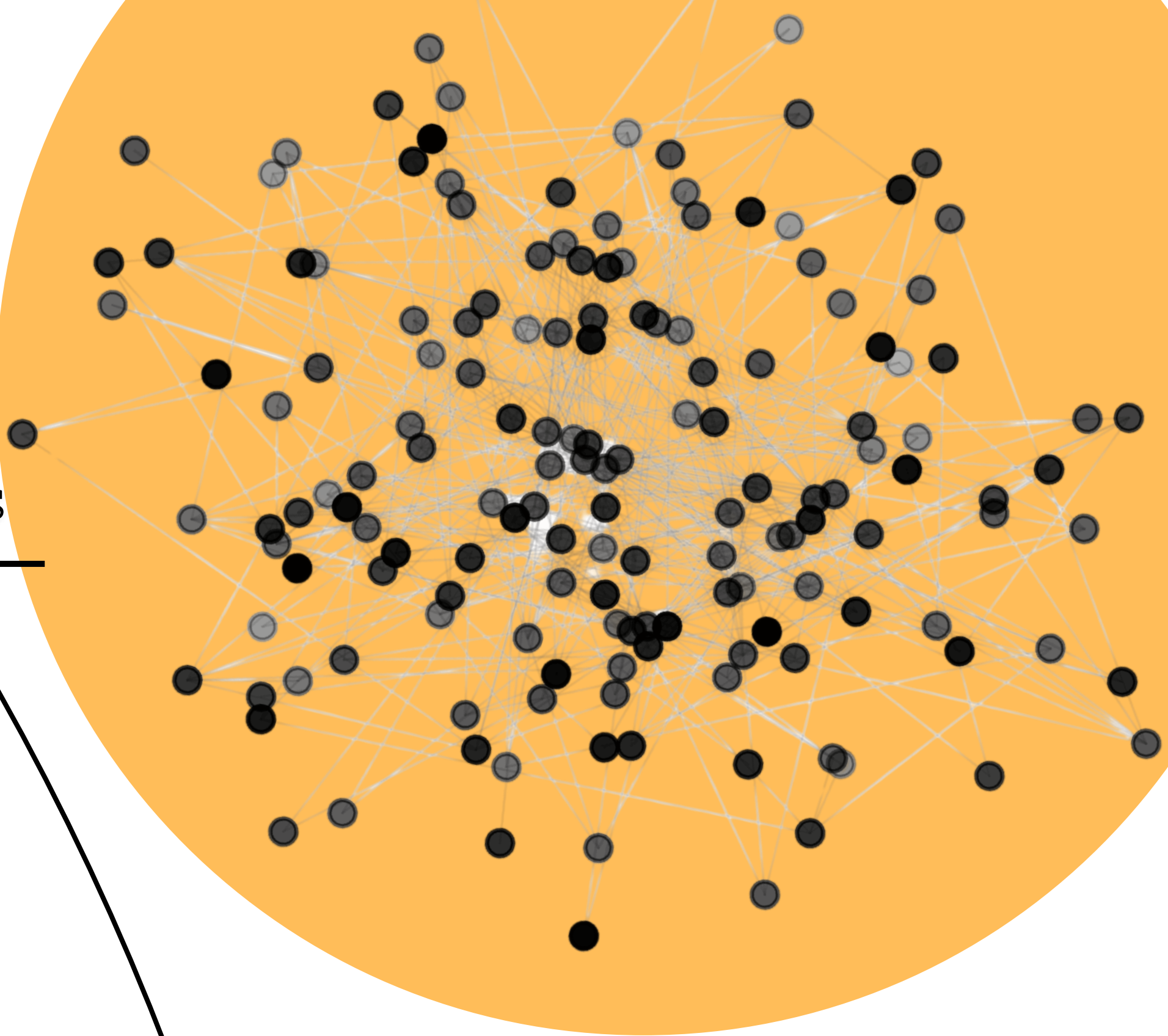


# Police View

The network you think exists



## What police think the network looks like

Police intelligence links cases if suspects or addresses are shared. This produces a partial network, missing many relationships.

Forensic intelligence (fingerprints, DNA) adds:

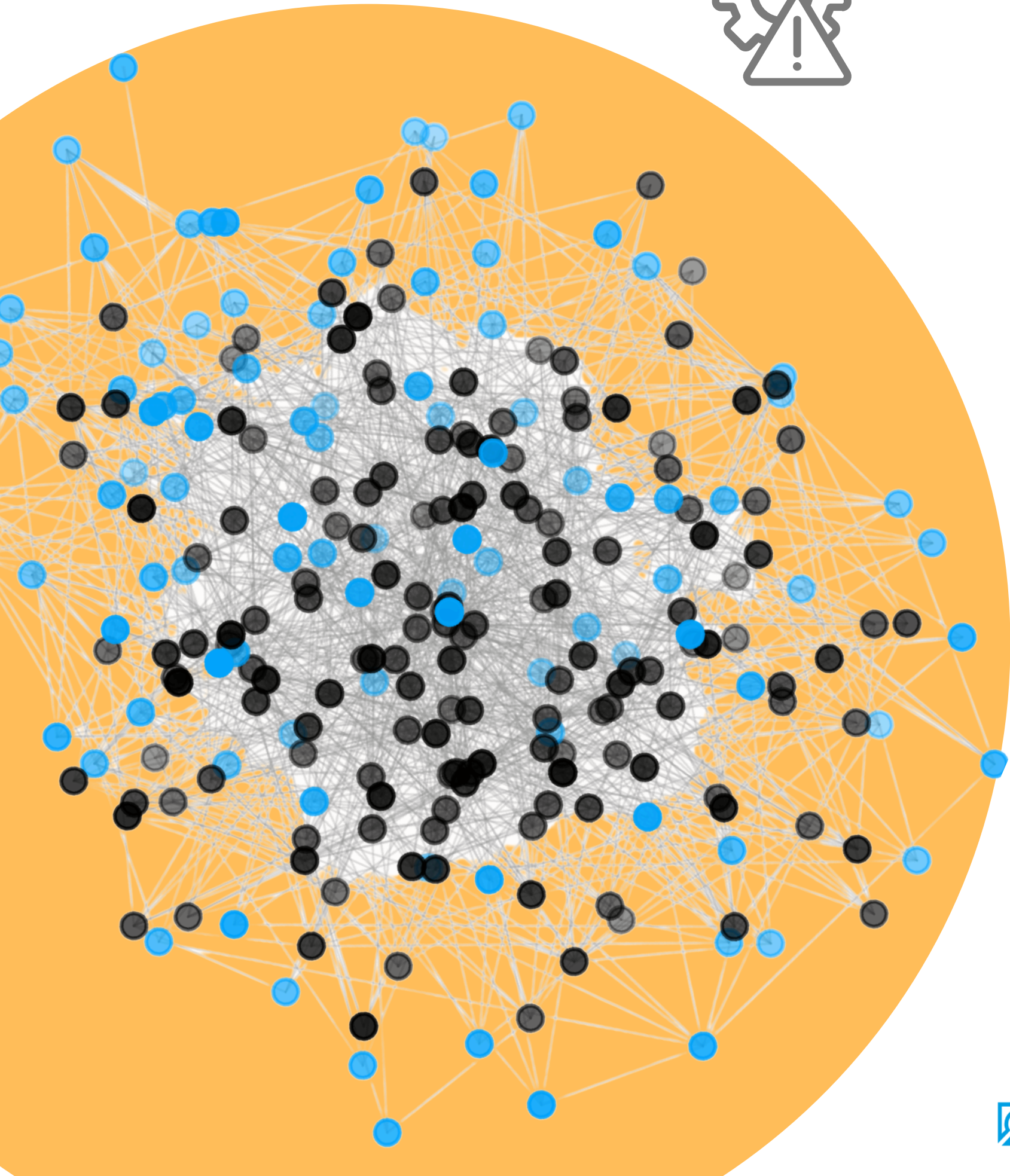
- new nodes (offenders previously unknown),
- new edges (connections between cases).



*"Criminal networks aren't small.  
Our visibility is."*

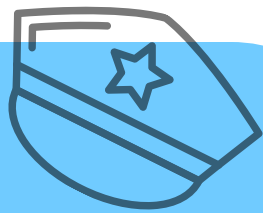
## How we modeled disruption

1. We built 1000 iterations of simulated police only and forensic enhanced networks.
2. We measured the baseline differences in all social network analysis metrics and then applied a variety of node based and edge based disruptions.
3. Finally, we measured the after effects of the disruptions including sequential disruption.



VS

## Police disrupt the wrong nodes



- When police remove the highest-degree actor, their network collapses the Average Shortest Path Length doubles (+100%).
- But in the fingerprint-enhanced network, removing the same actor barely matters (+10%).
- Police collapse the network they think exists. Forensics reveals the one that actually does.

## Forensic networks are structurally stronger

Forensics converts chaos into structure, increasing connectedness

- LCC 90%+ → Cases become one network, not fragments.
- Density 3–5× → More relationships, fewer blind spots.
- Clustering 4–6× → Reveals real criminal cells within networks.



The network that actually exists

# Forensic View