

Network Science Taster Session

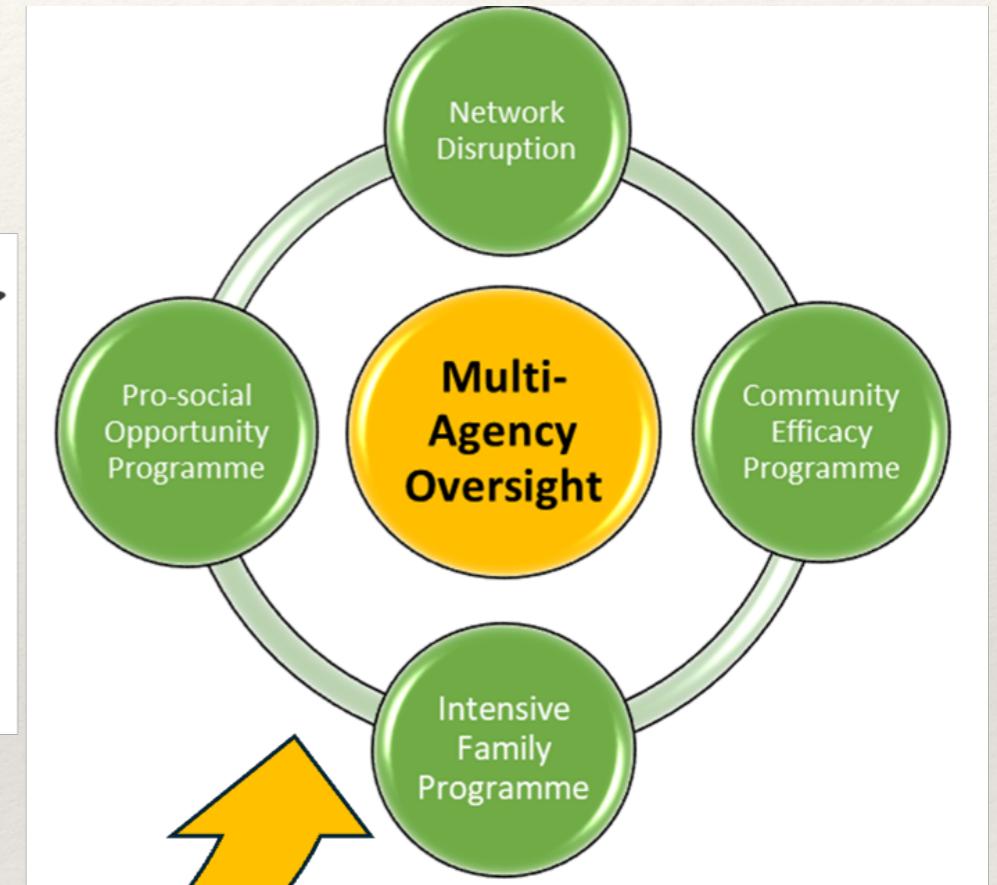
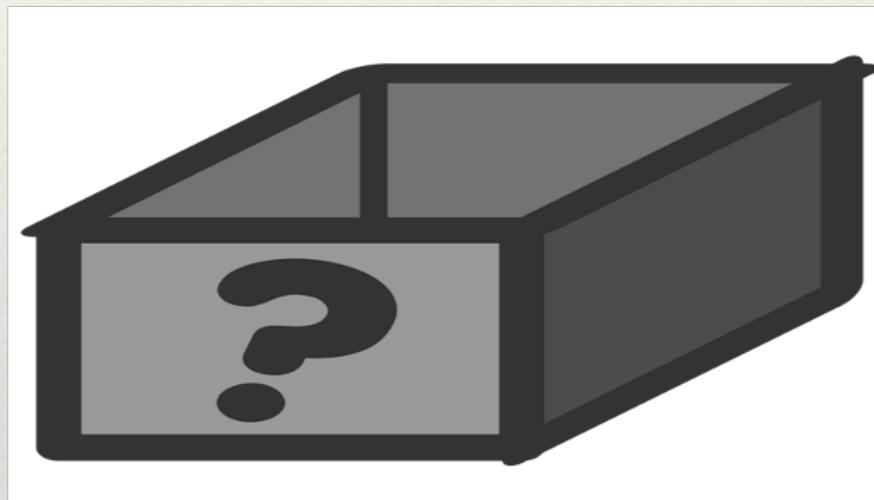
We will begin shortly...

Dr. Jacob Young
Arizona State University

Dr. Seán Redmond
University of Limerick

Intervening with Children Involved in Crime Networks

Rank	Location	Offences 2010 and 2011 offender aged 17 or less				Number of unique offenders 2010 and 2011			
		01 Drugs for Sale and Supply	02 Burglaries	03 Robberies	Total	01 Drugs for Sale and Supply	02 Burglaries	03 Robberies	Total
1	Bluetown	28	4	2	34	20	4	2	26
2	Redtown	23	61	27	111	15	33	21	69
3	Yellowtown	21	12	13	46	15	7	4	26
4	Orangetown	18	10	13	41	14	1	8	23
5	Whitetown	17	7	16	40	5	2	13	20
6	Blacktown	16	23	13	52	12	8	5	25
7	Greytown	13	23	11	47	11	12	4	27
8	Brownstown	12	5	5	22	9	3	3	15
9	Purpletown	12	3	31	46	6	1	19	26
10	Pinktown	11	15	15	41	6	6	3	15
11	Greentown	10	17	23	50	8	13	11	32
12	Area 12	9	31	23	63	9	19	14	42
13	Area 13	9	6	4	19	2	4	4	10
14	Area 14	6	40	41	87	6	13	21	40
15	Area 15	6	5	2	13	6	5	2	13
16	Area 16	5	13	7	25	5	7	7	19
17	Area 17	5	3	13	21	5	1	7	13
18	Area 18	5	8	4	17	5	4	3	12
19	Area 19	5	2	1	8	5	1	1	7
20	Area 20	5	12	0	17	4	9	0	13



Why Networks?

NEWS IN BRIEF

Sudden Death Of Aunt Creates Rupture In Family Gossip Pipeline

11/23/15 8:45am • SEE MORE: LOCAL ▾



<https://local.theonion.com/sudden-death-of-aunt-creates-rupture-in-family-gossip-p-1819578447>

Sudden Death Of Aunt Creates Rupture In Family Gossip Pipeline

VIRGINIA BEACH, VA—Grieving family members of local aunt Laurie Shelton confirmed Monday that the 48-year-old woman's unexpected death had caused a major breach in their gossip pipeline, suddenly disrupting access to the latest dirt on all their relatives. “Since Aunt Laurie passed, news about how Stephanie’s new boyfriend can’t hold down a job and updates on Uncle Jeff’s gambling habit have slowed to a trickle,” said Shelton’s niece Arielle, mourning the loss of a woman who for years had reportedly ensured a steady stream of the juiciest tidbits about relatives’ layoffs, unplanned pregnancies, personal bankruptcies, and misdemeanor shoplifting charges. “All the best gossip flowed through her, and now she’s gone. For all I know, the twins in North Carolina could have been caught smoking pot, Grandma could be back together with Leon, and Uncle Mike could be considering a vasectomy. It’s a devastating loss for the whole family.” Several in the family expressed hope that, for the time being, a sufficient supply of idle chatter could be rerouted through Cousin Staci to meet their immediate needs.

Sudden Death Of Aunt Creates Rupture In Family Gossip Pipeline

What happened?

Why did it happen?

VIRGINIA BEACH, VA—Grieving family members of local aunt Laurie Shelton confirmed Monday that the 48-year-old woman's unexpected death had caused a major breach in their gossip pipeline, suddenly disrupting access to the latest dirt on all their relatives. "Since Aunt Laurie passed, news about how Stephanie's new boyfriend can't hold down a job and updates on Uncle Jeff's gambling habit have slowed to a trickle," said Shelton's niece Arielle, mourning the loss of a woman who for years had reportedly ensured a steady stream of the juiciest tidbits about relatives' layoffs, unplanned pregnancies, personal bankruptcies, and misdemeanor shoplifting charges. "All the best gossip flowed through her, and now she's gone. For all I know, the twins in North Carolina could have been caught smoking pot, Grandma could be back together with Leon, and Uncle Mike could be considering a vasectomy. It's a devastating loss for the whole family." Several in the family expressed hope that, for the time being, a sufficient supply of idle chatter could be rerouted through Cousin Staci to meet their immediate needs.

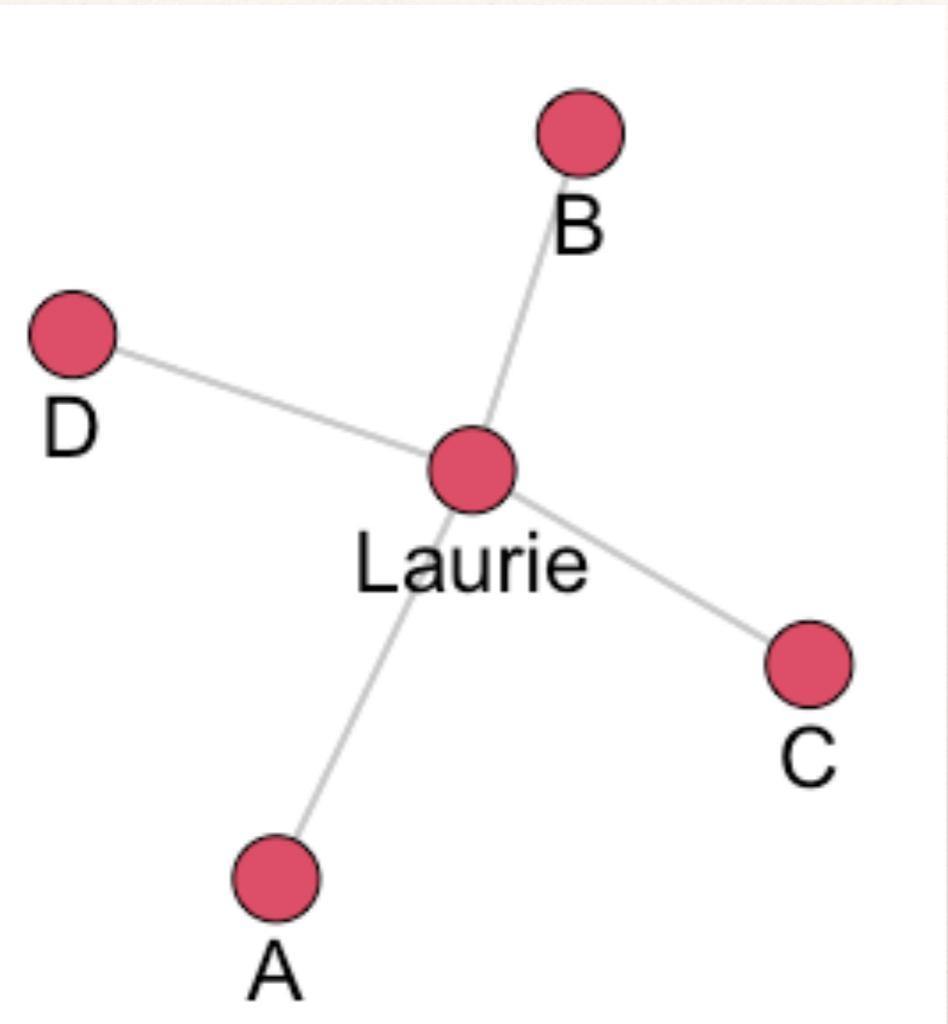
Sudden Death Of Aunt Creates Rupture In Family Gossip Pipeline

The Shelton family experienced a network intervention

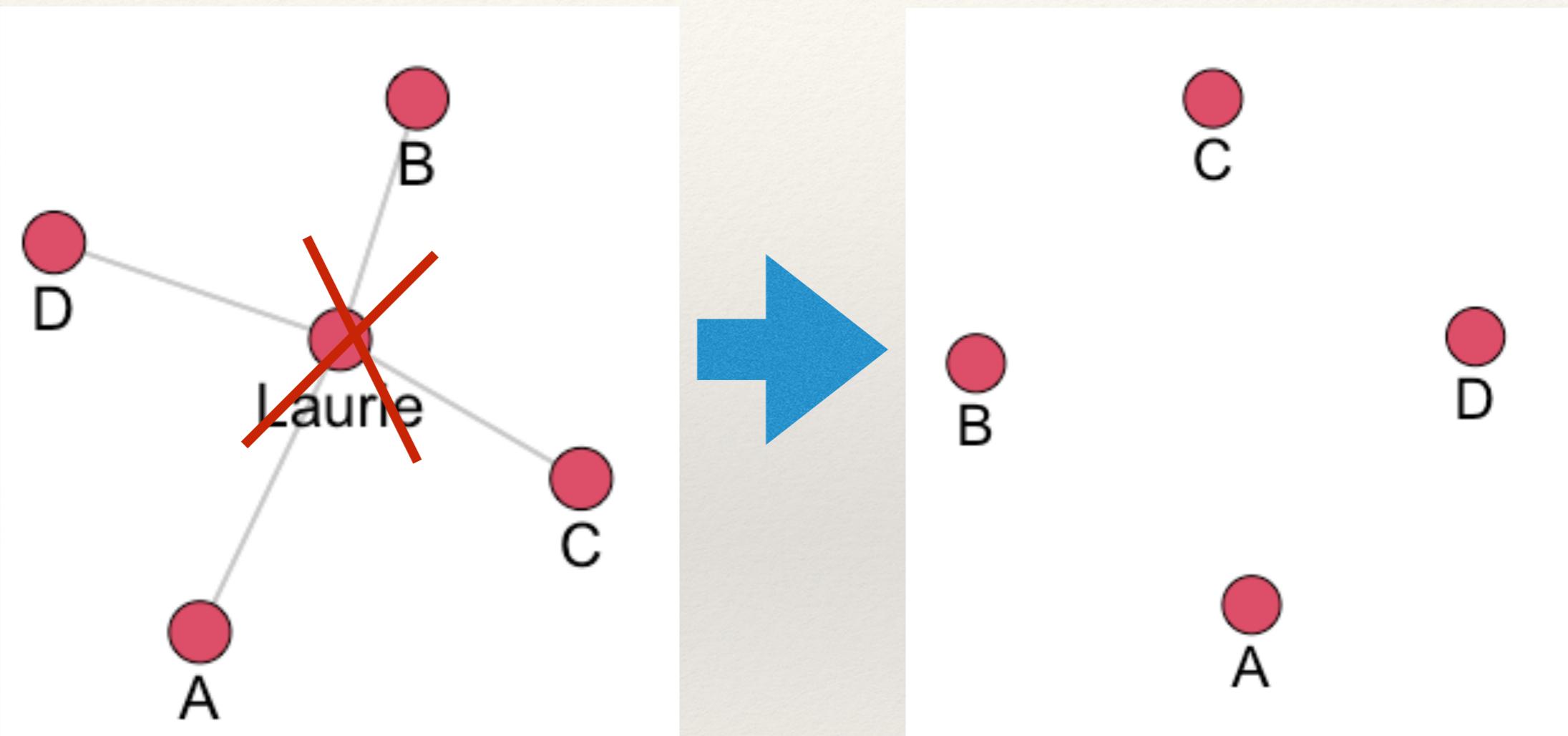
(A change in the network)

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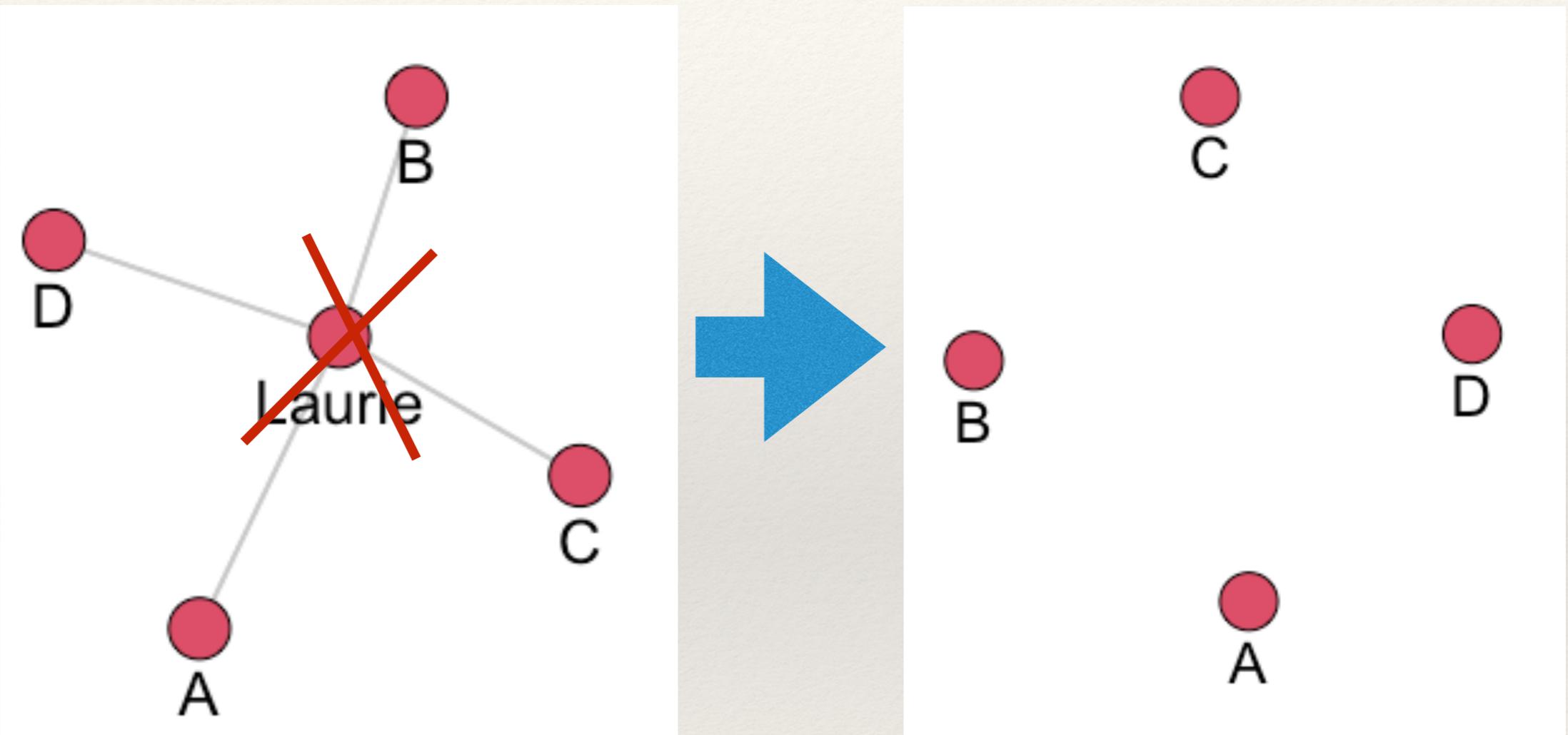
Sudden Death Of Aunt Creates Rupture In Family Gossip Pipeline



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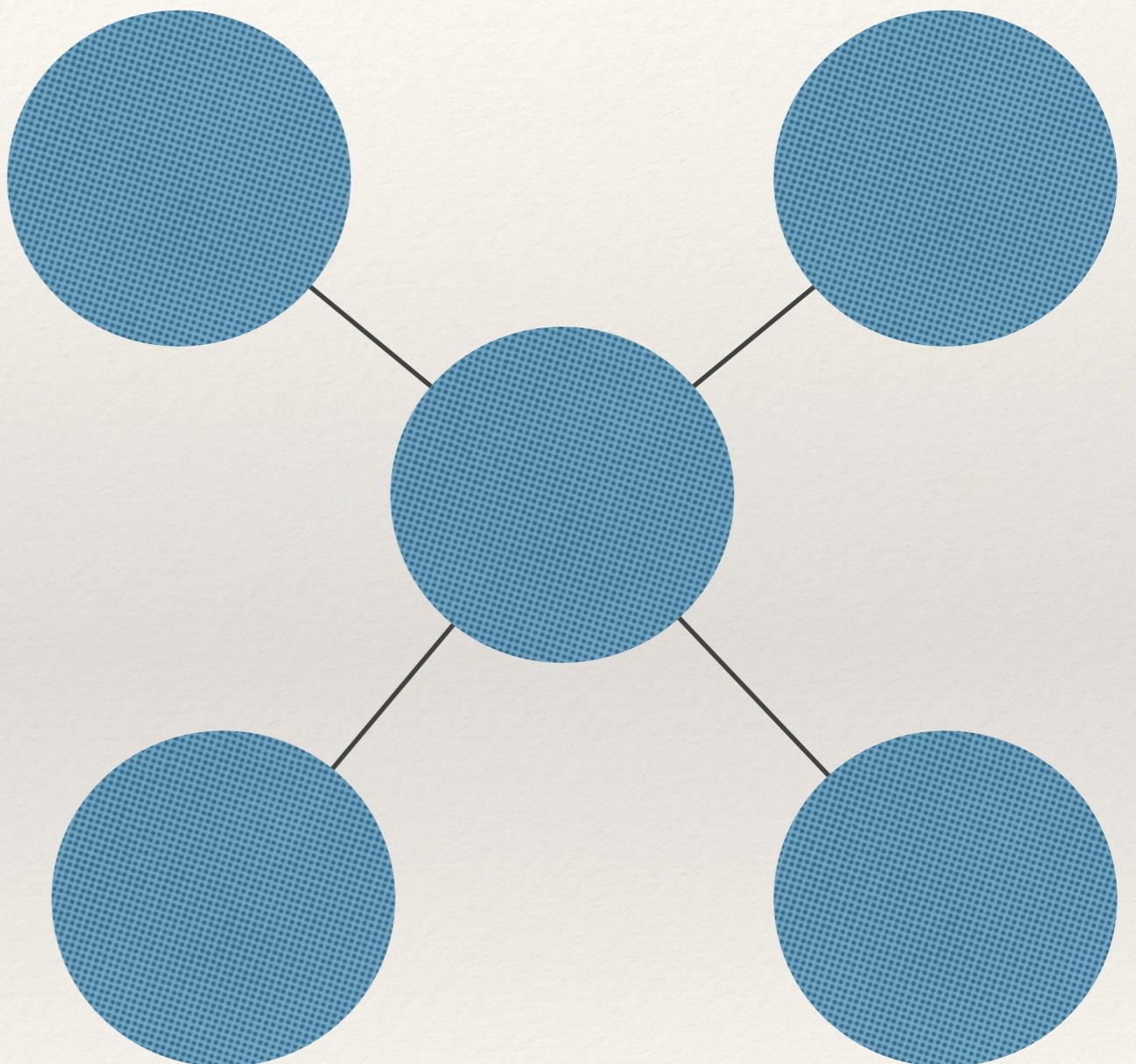
Sudden Death Of Aunt Creates Rupture In Family Gossip Pipeline



The Family Gossip Pipeline is vulnerable

Why Networks?: Networks Matter!

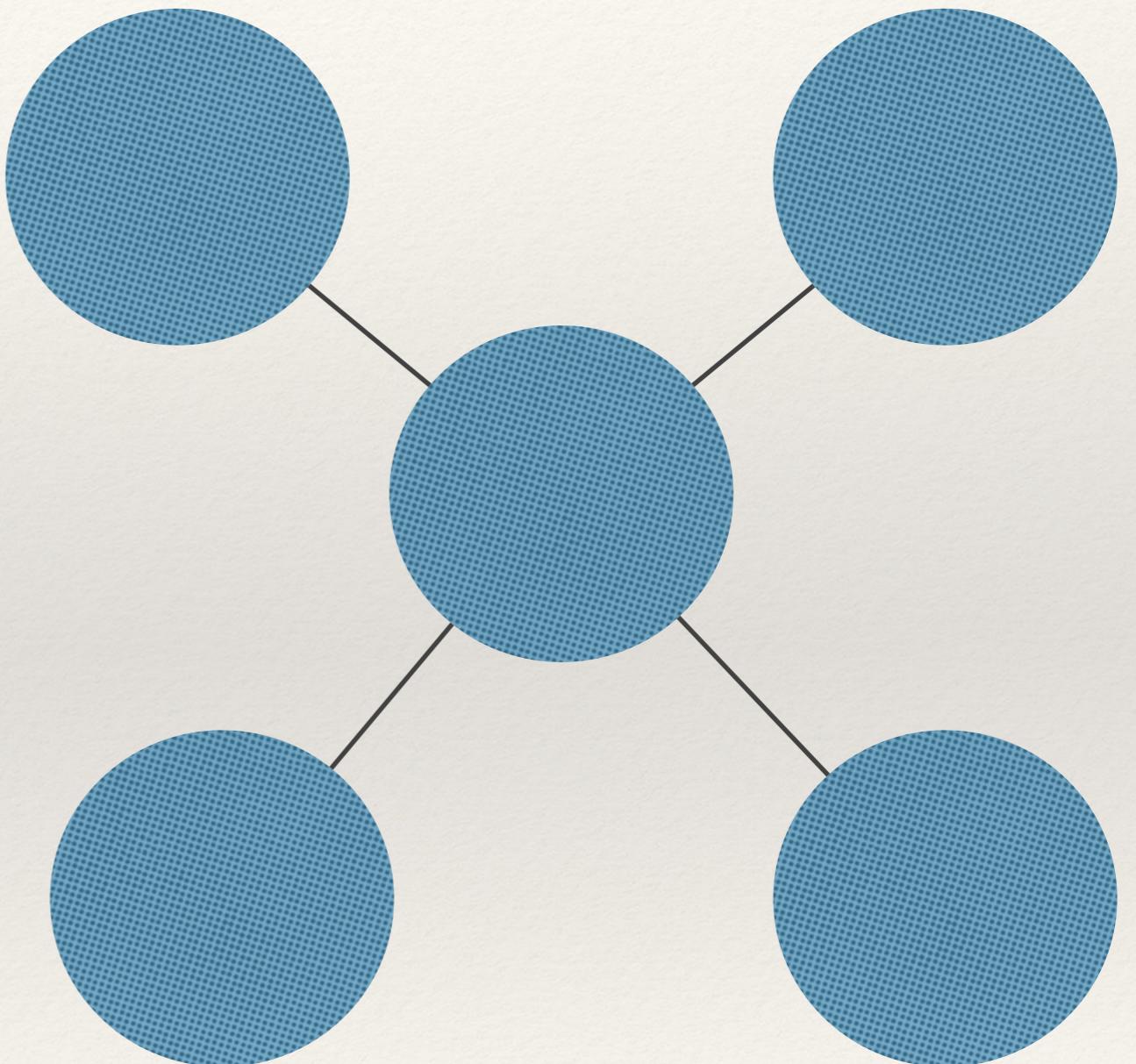
Just as gossip spreads through a network, so may drugs, money, people...



Why Networks?: Networks Matter!

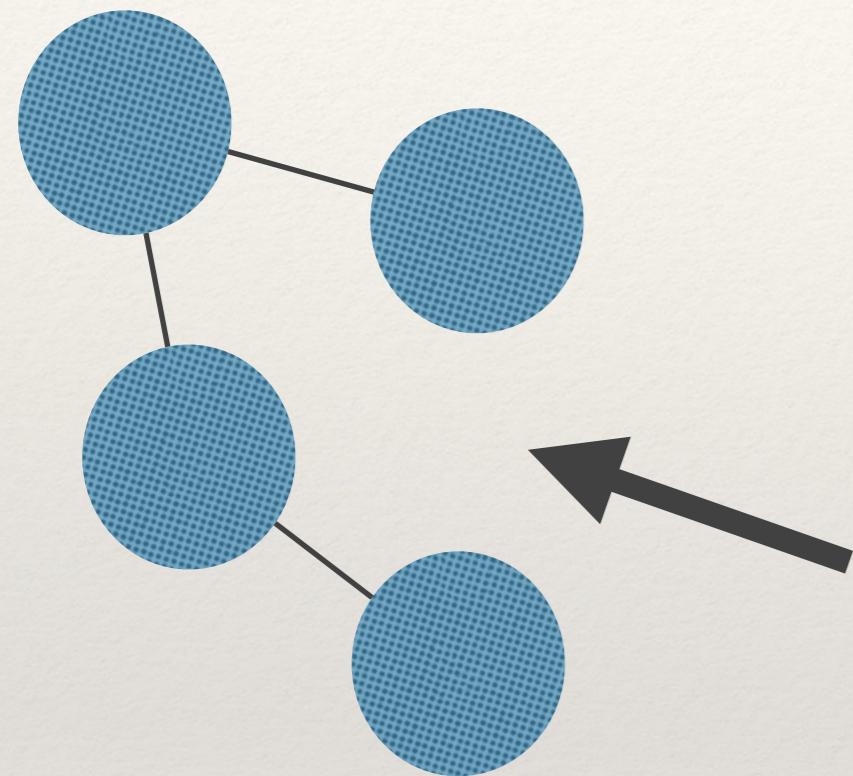
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Understanding the network matters



Example: Criminal Organization in Italy

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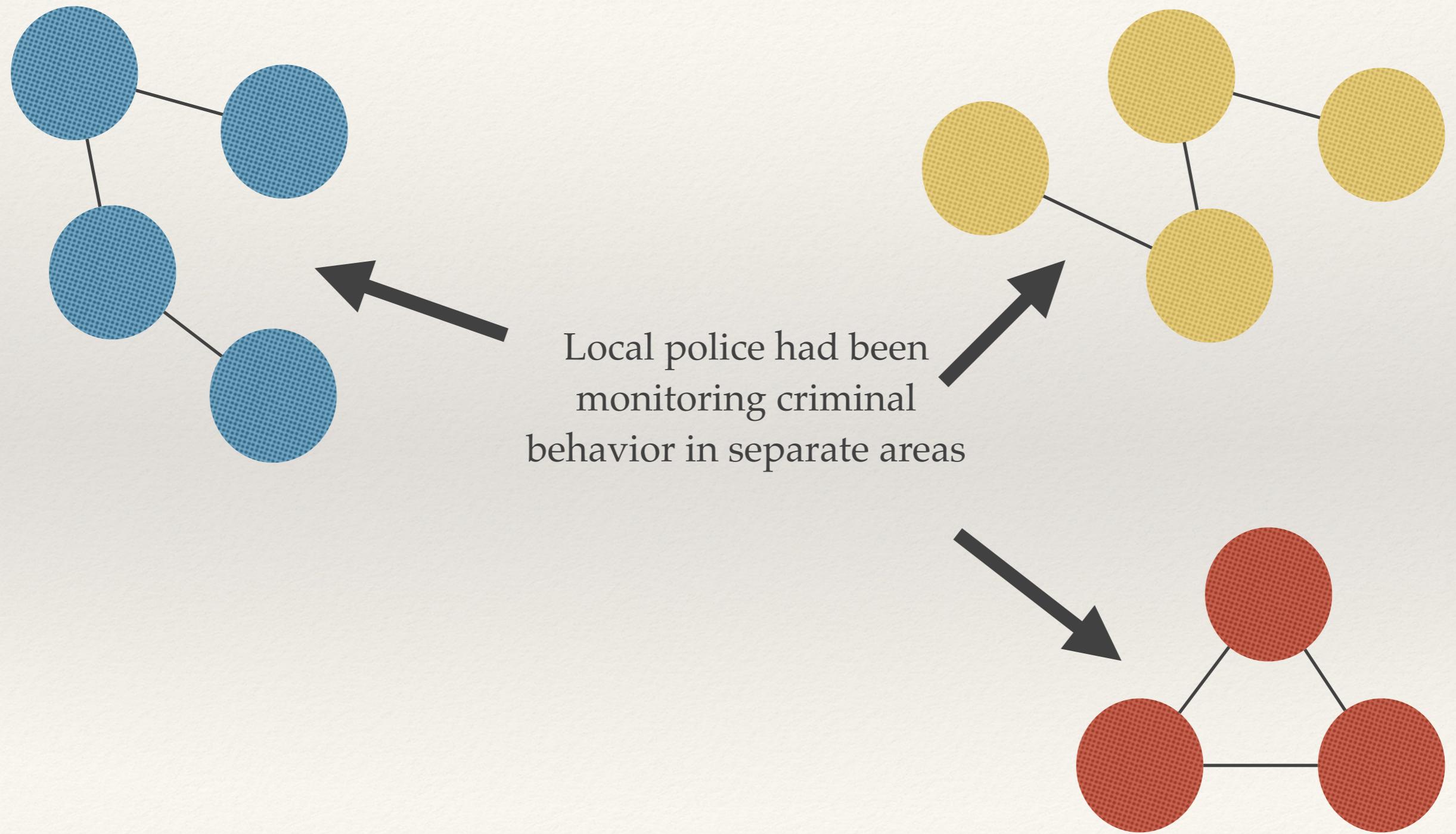


Local police had been monitoring criminal behavior in separate areas

Example: Criminal Organization in Italy



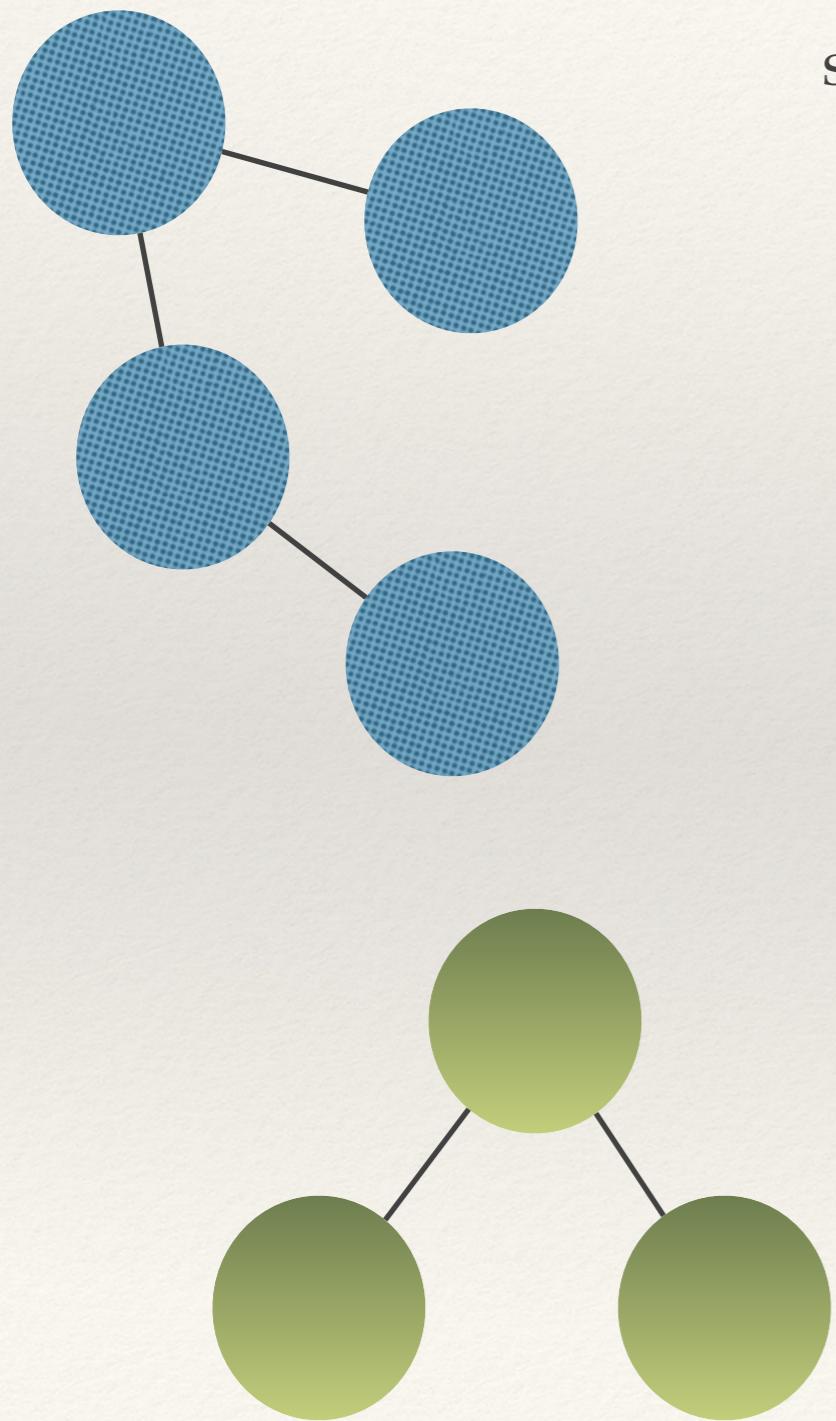
Example: Criminal Organization in Italy



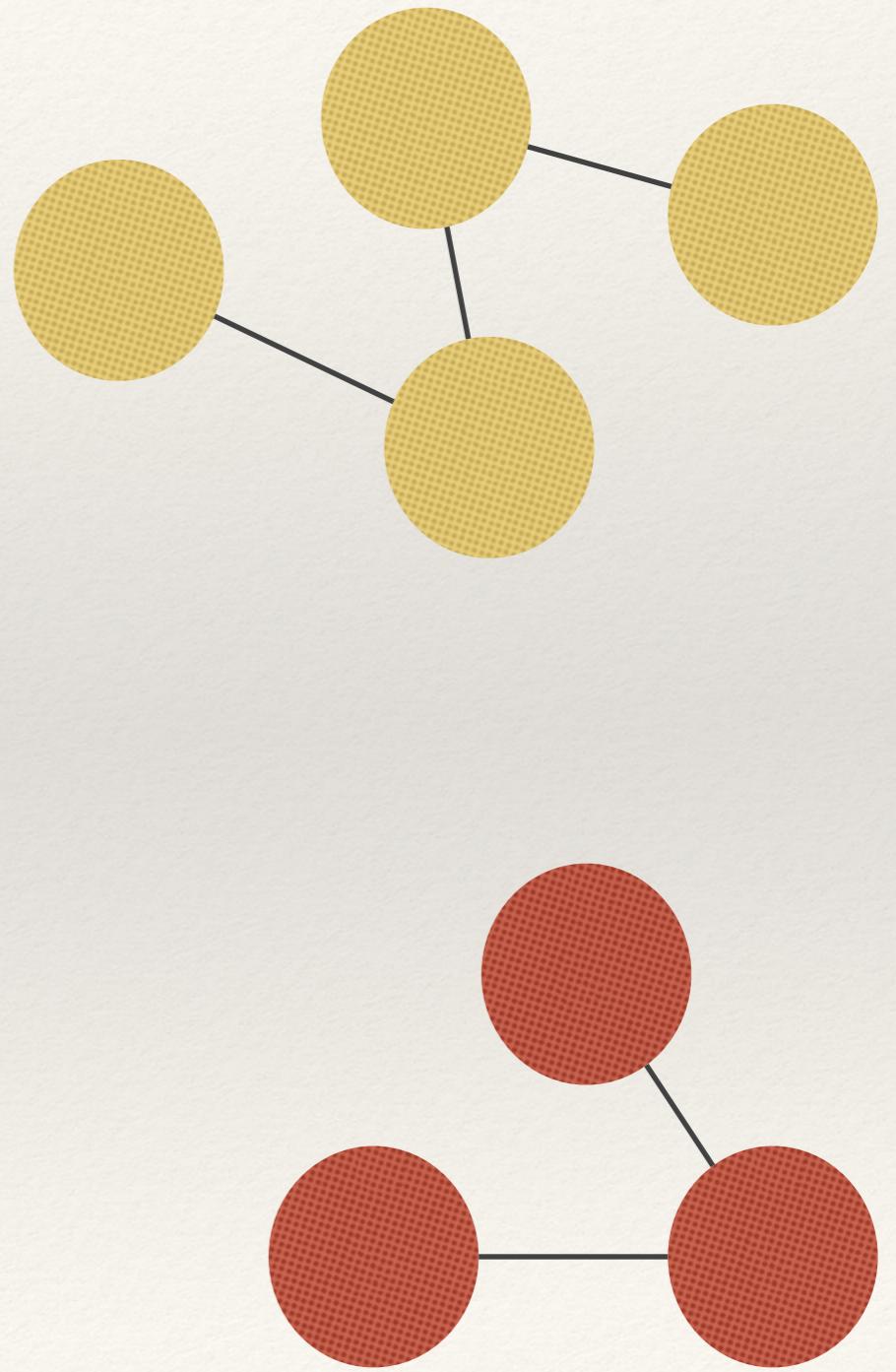
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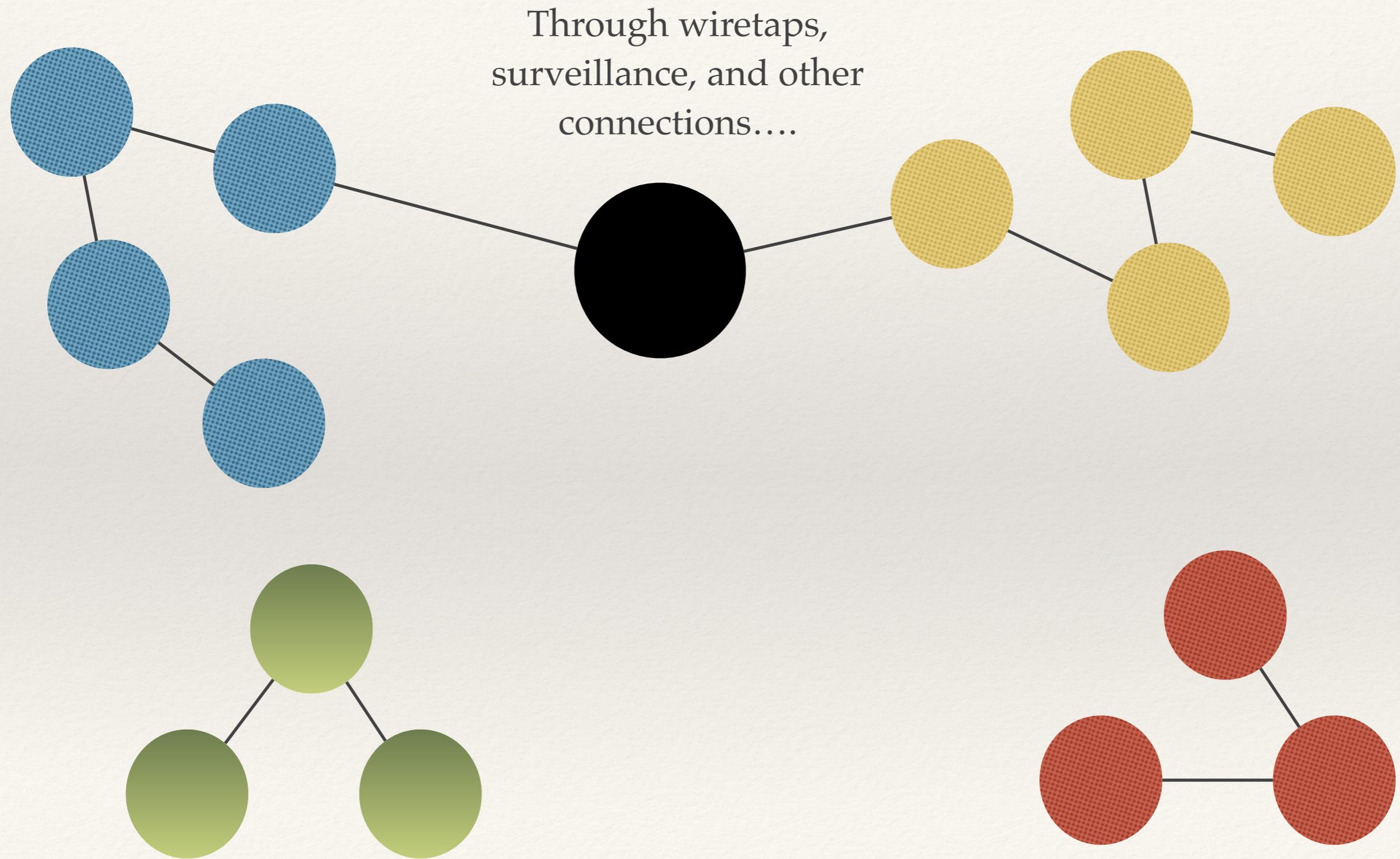
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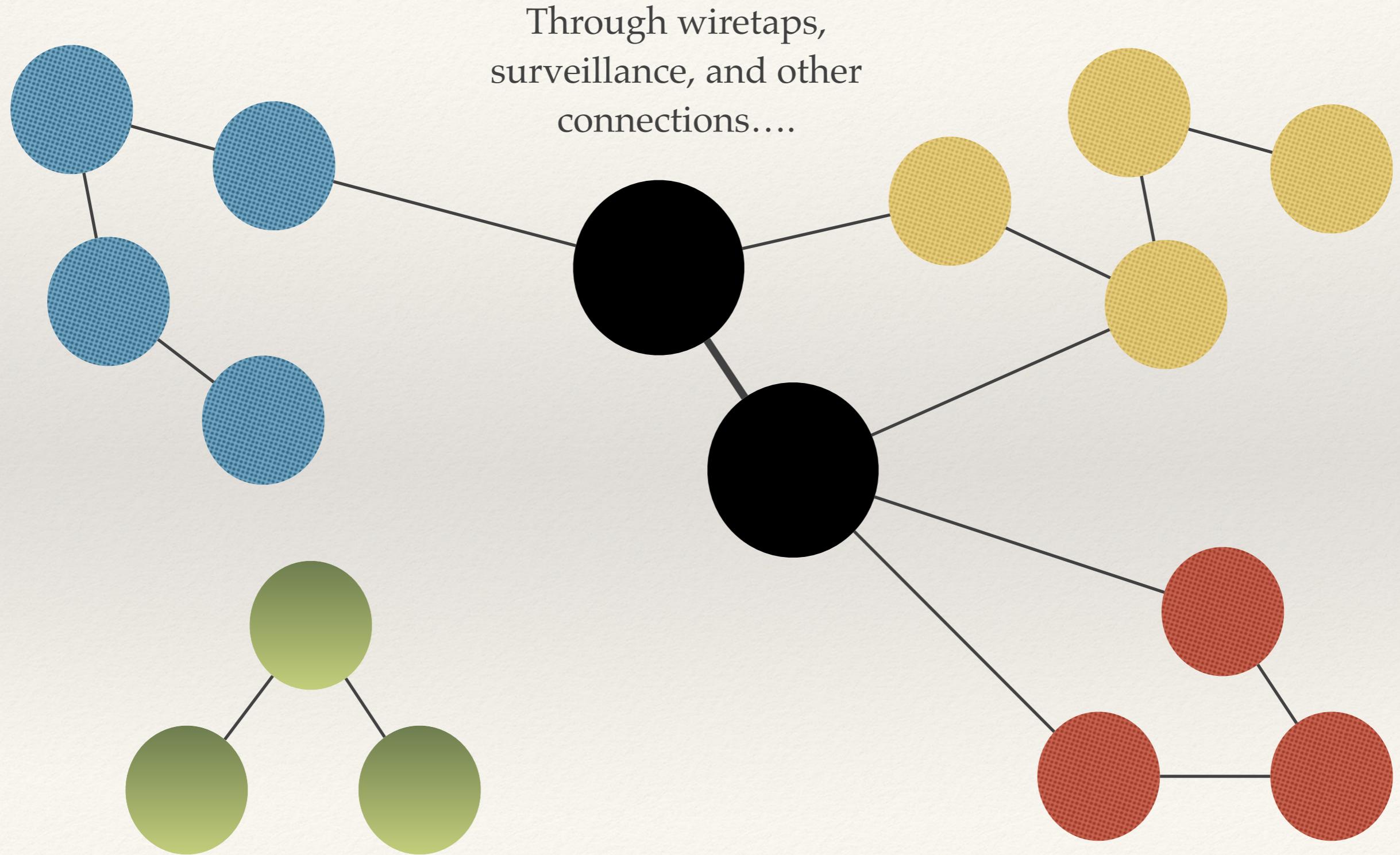
Through wiretaps,
surveillance, and other
connections....



Example: Criminal Organization in Italy

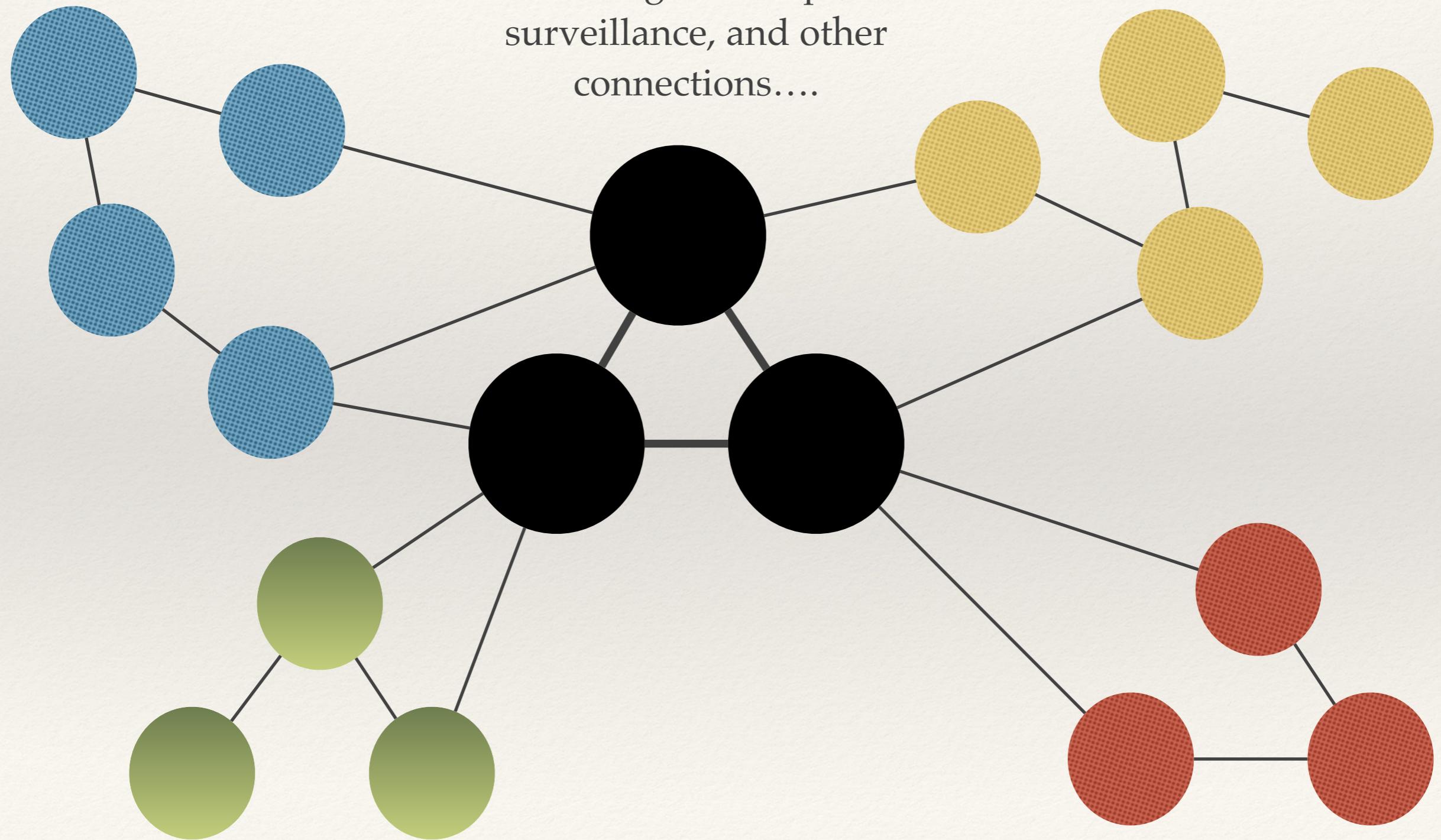


Example: Criminal Organization in Italy



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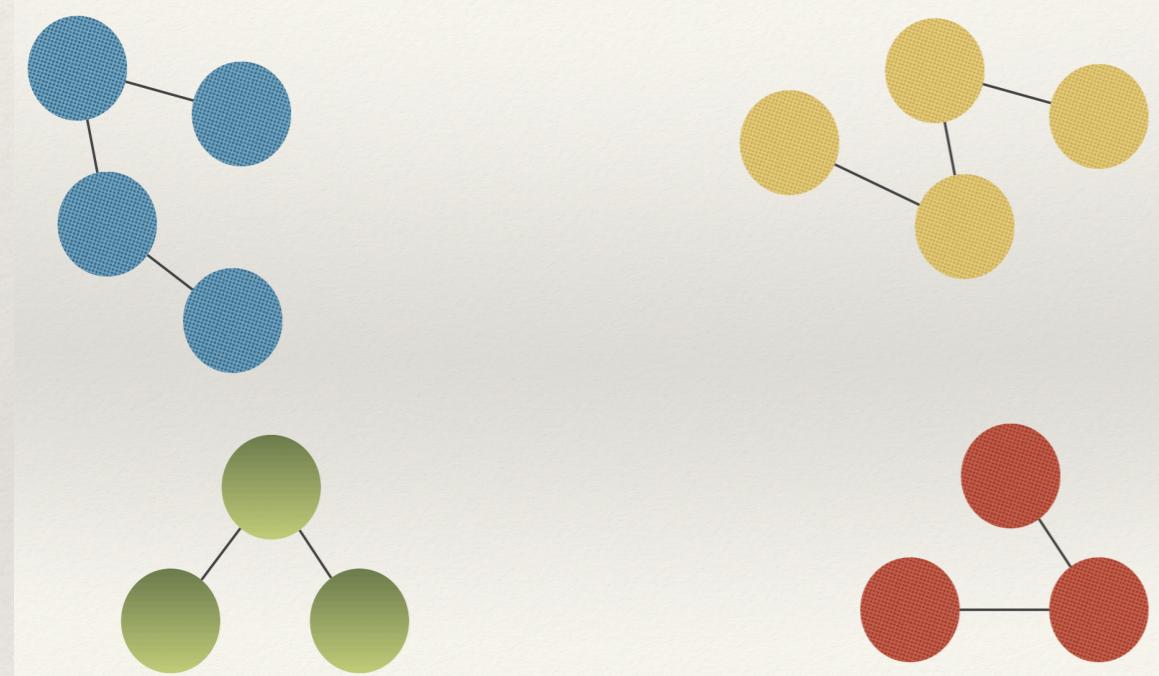


Example: Criminal Organization in Italy

The **structure of the network**
influenced what should be done

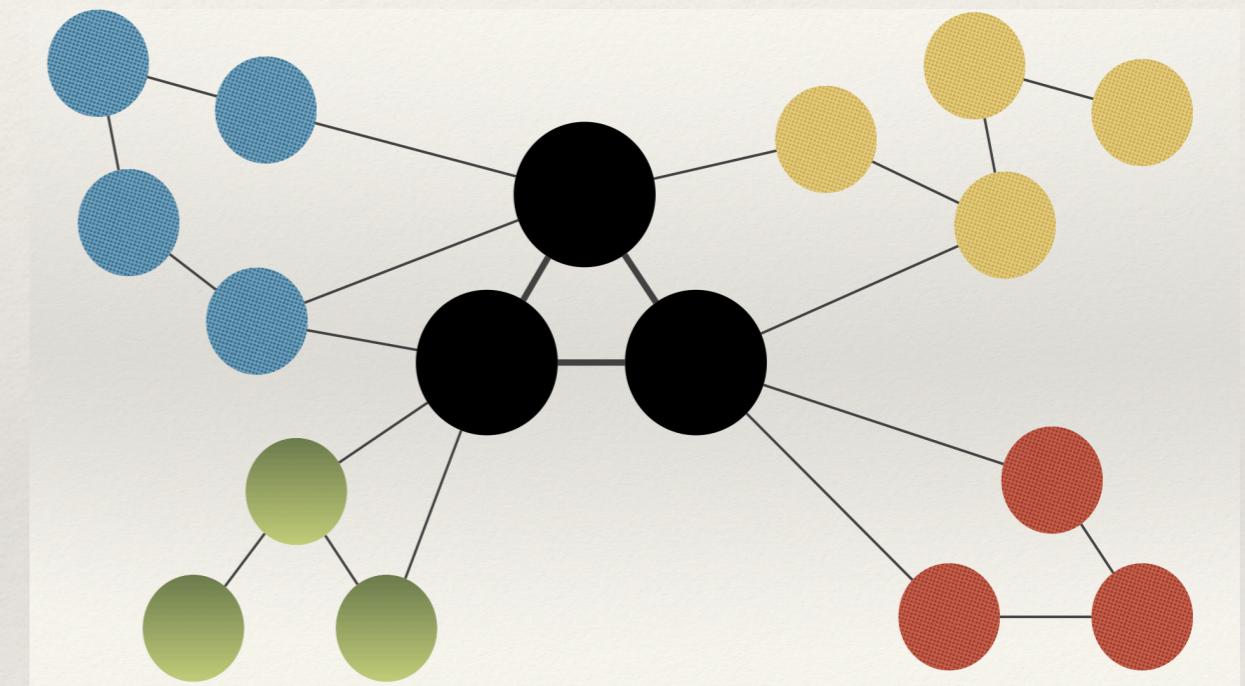
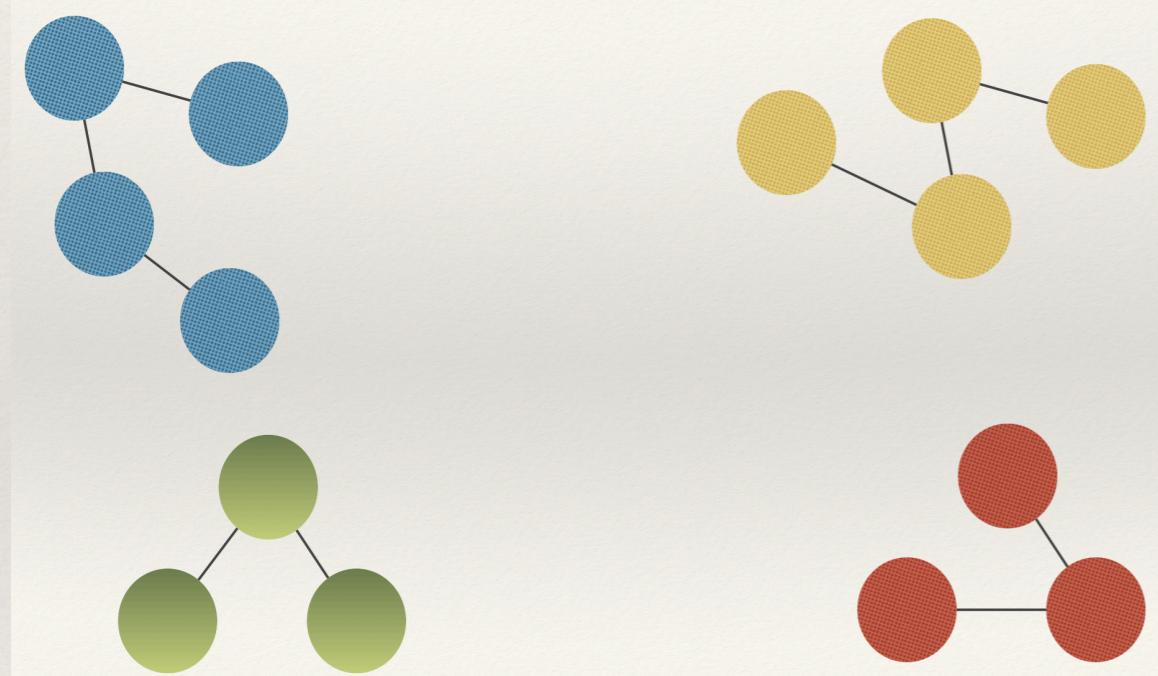
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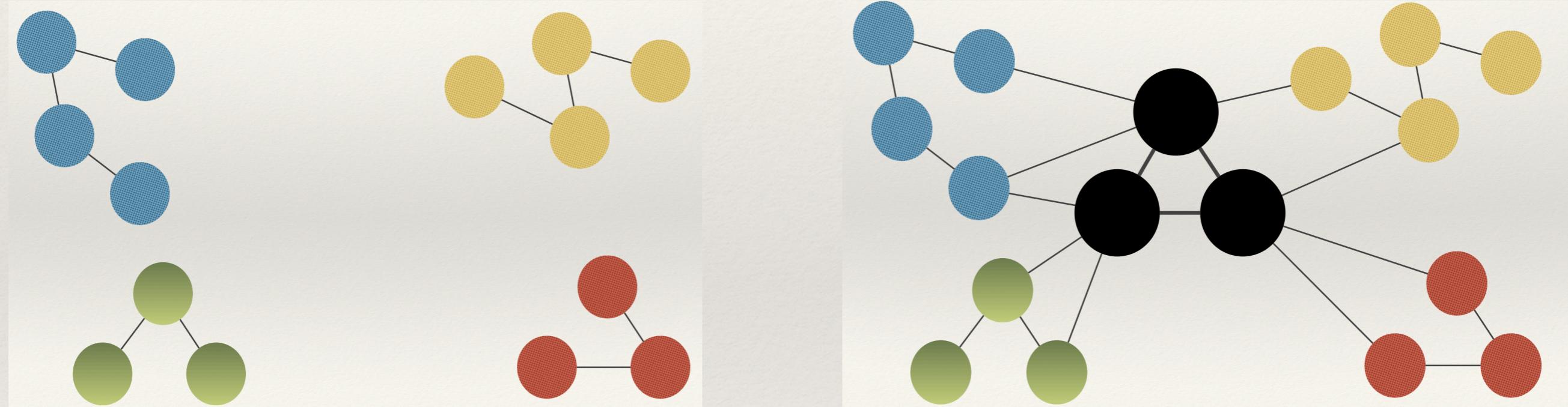
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The structure of the network
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Example: Criminal Organization in Italy

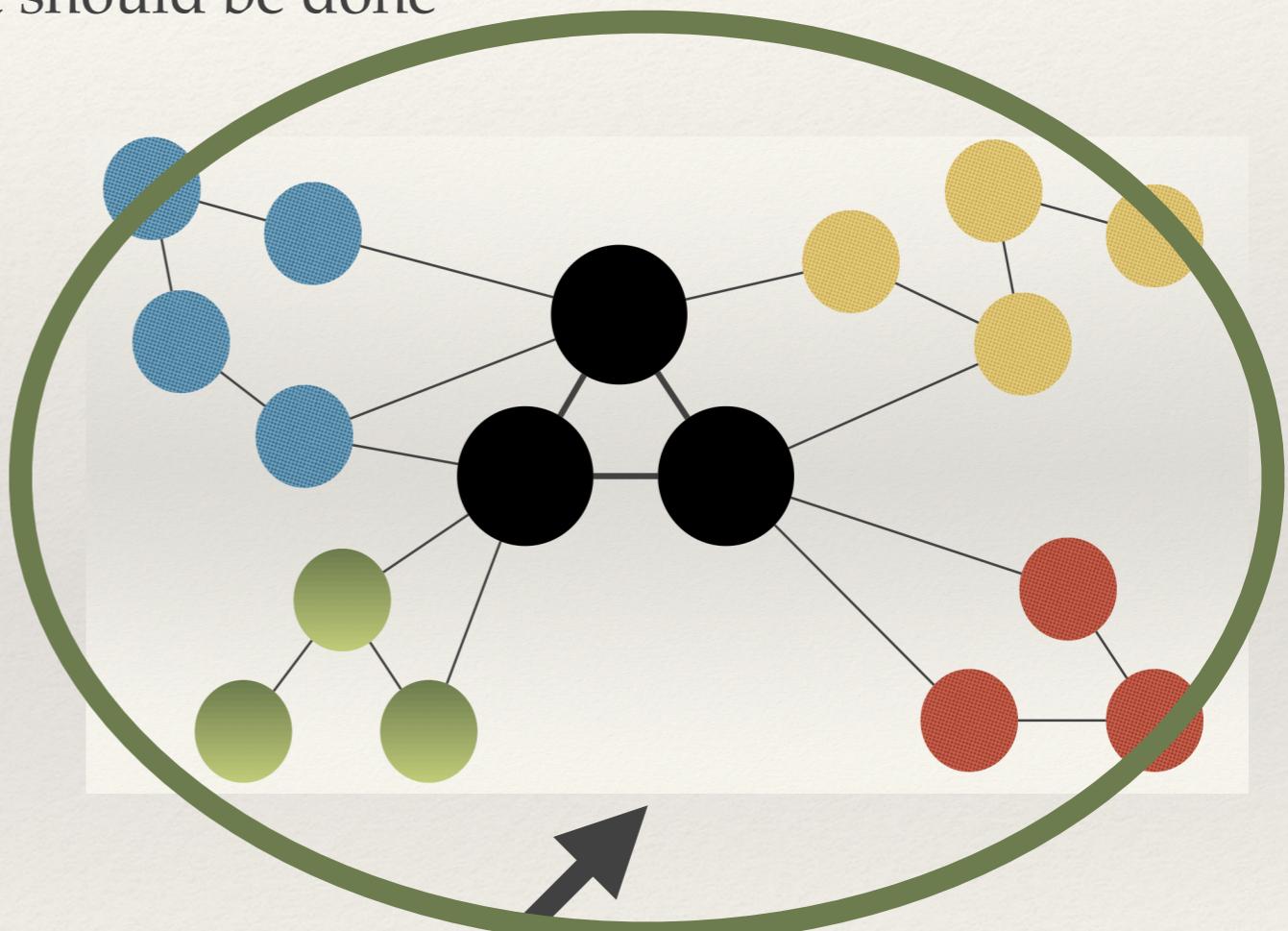
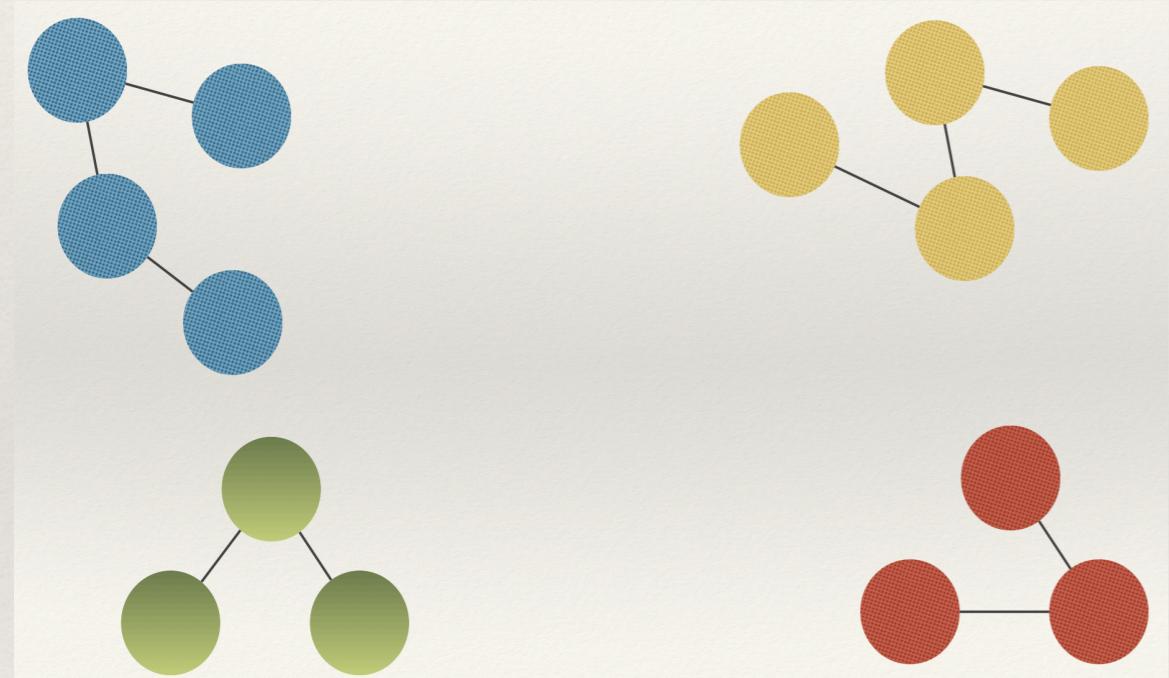
The structure of the network
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These networks require
separate approaches

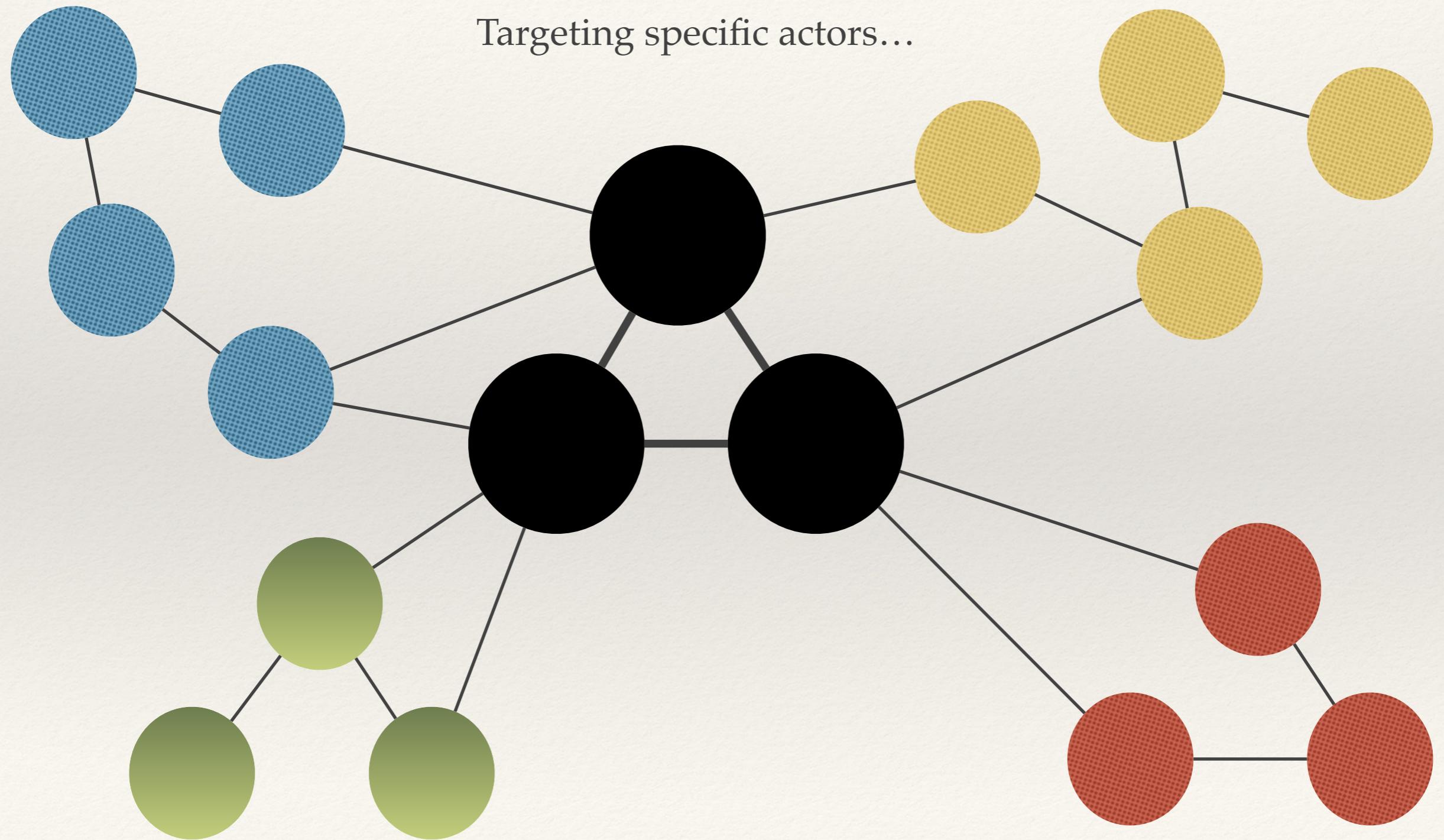
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The structure of the network
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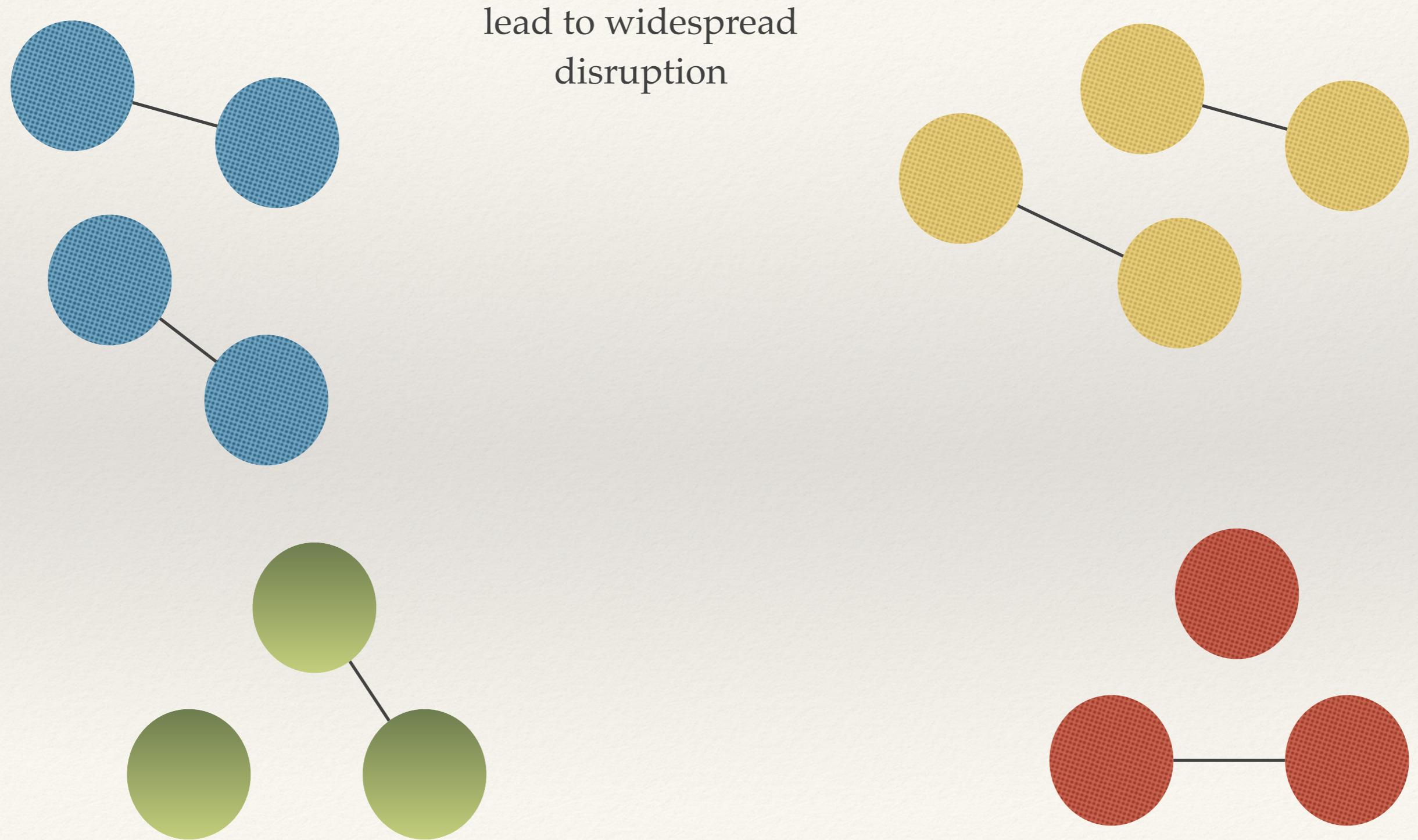


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separate approaches

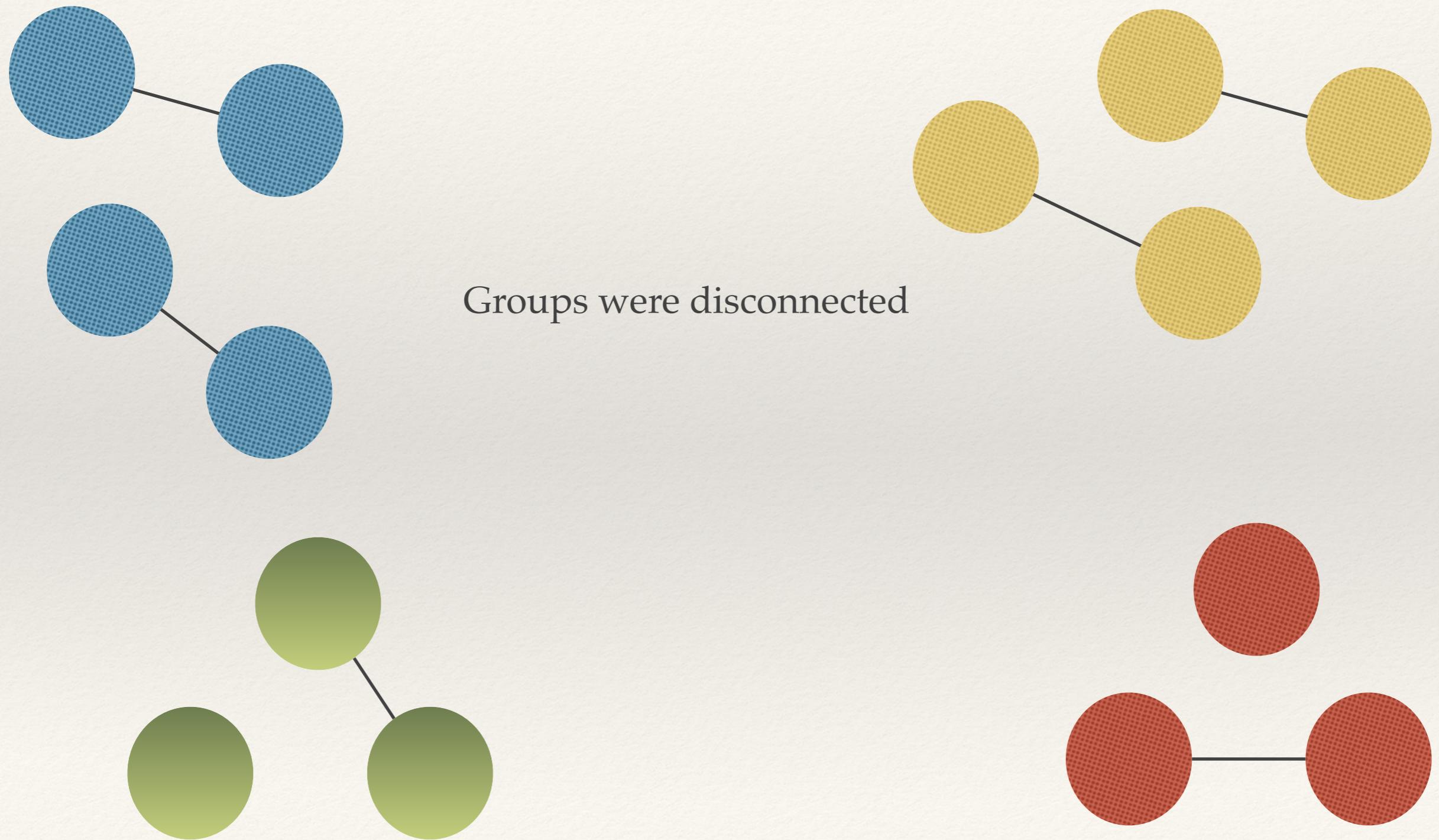
Example: Criminal Organization in Italy



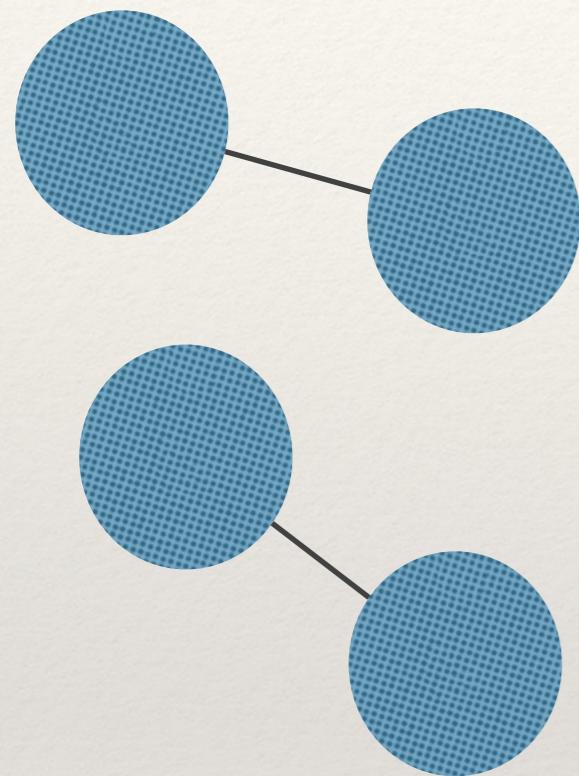
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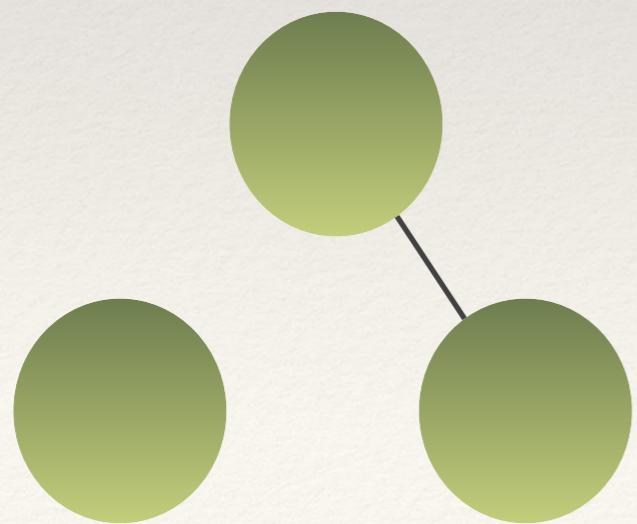
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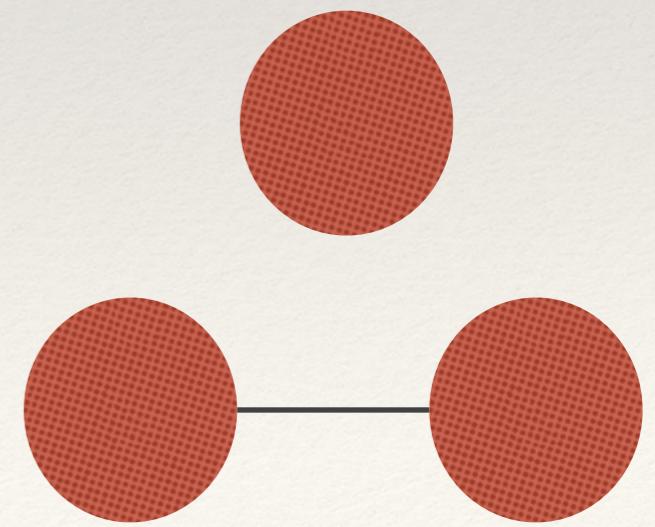
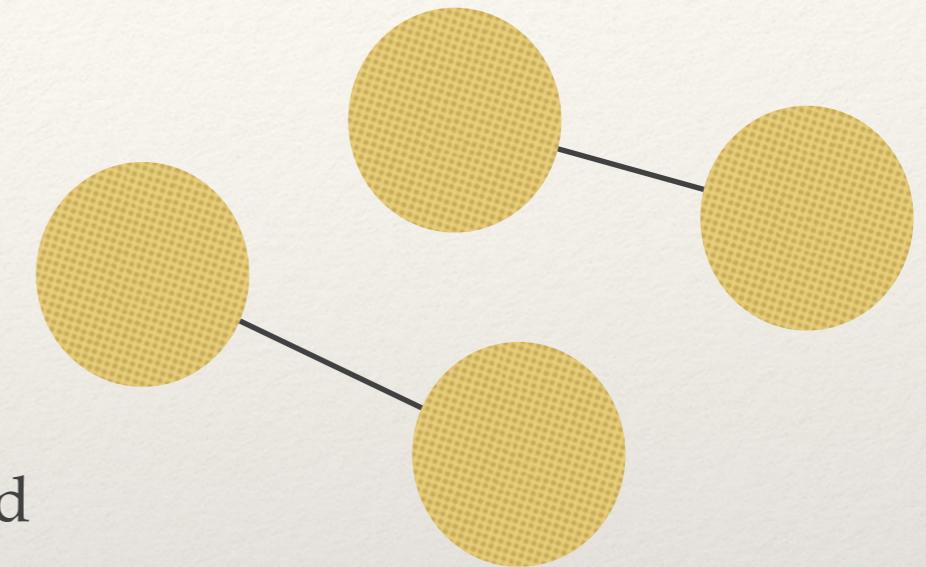
Example: Criminal Organization in Italy



Groups were disconnected

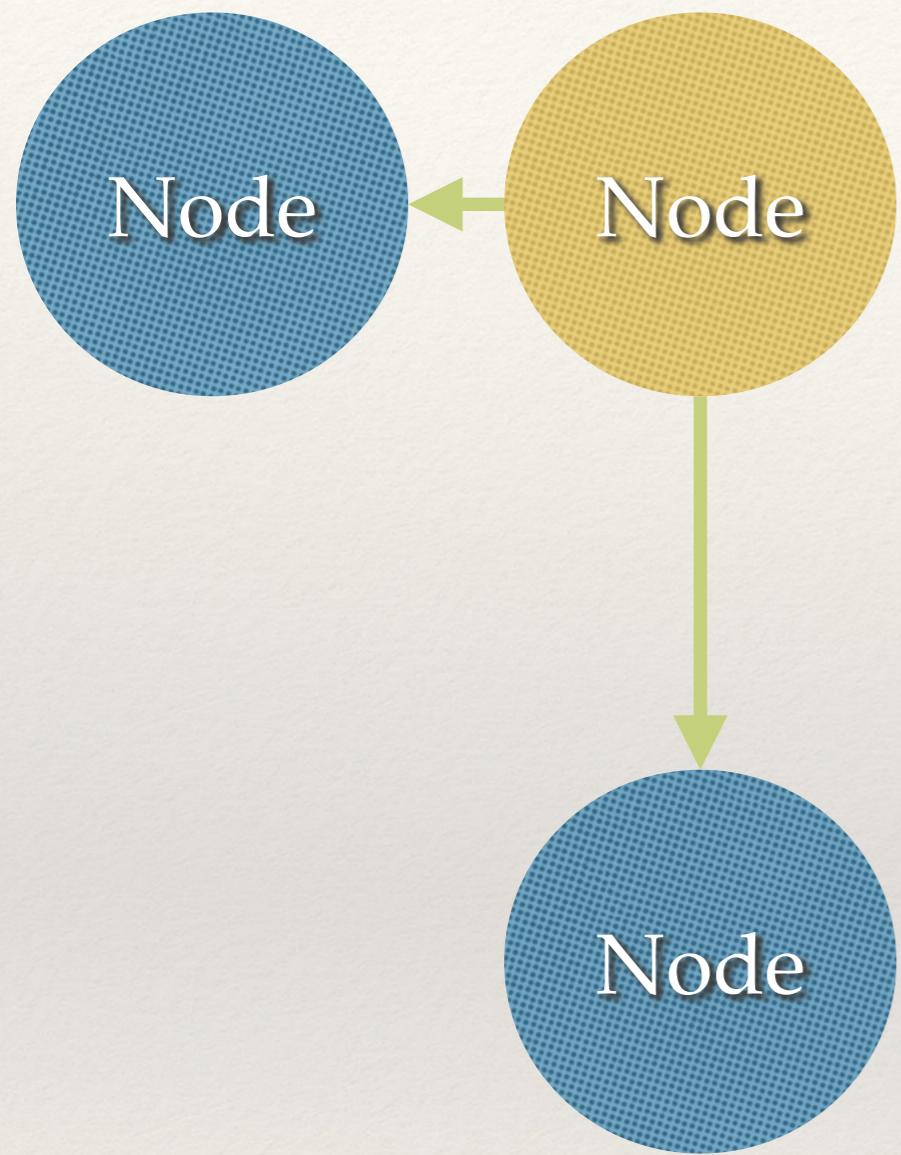


BUT, local activity was also impacted

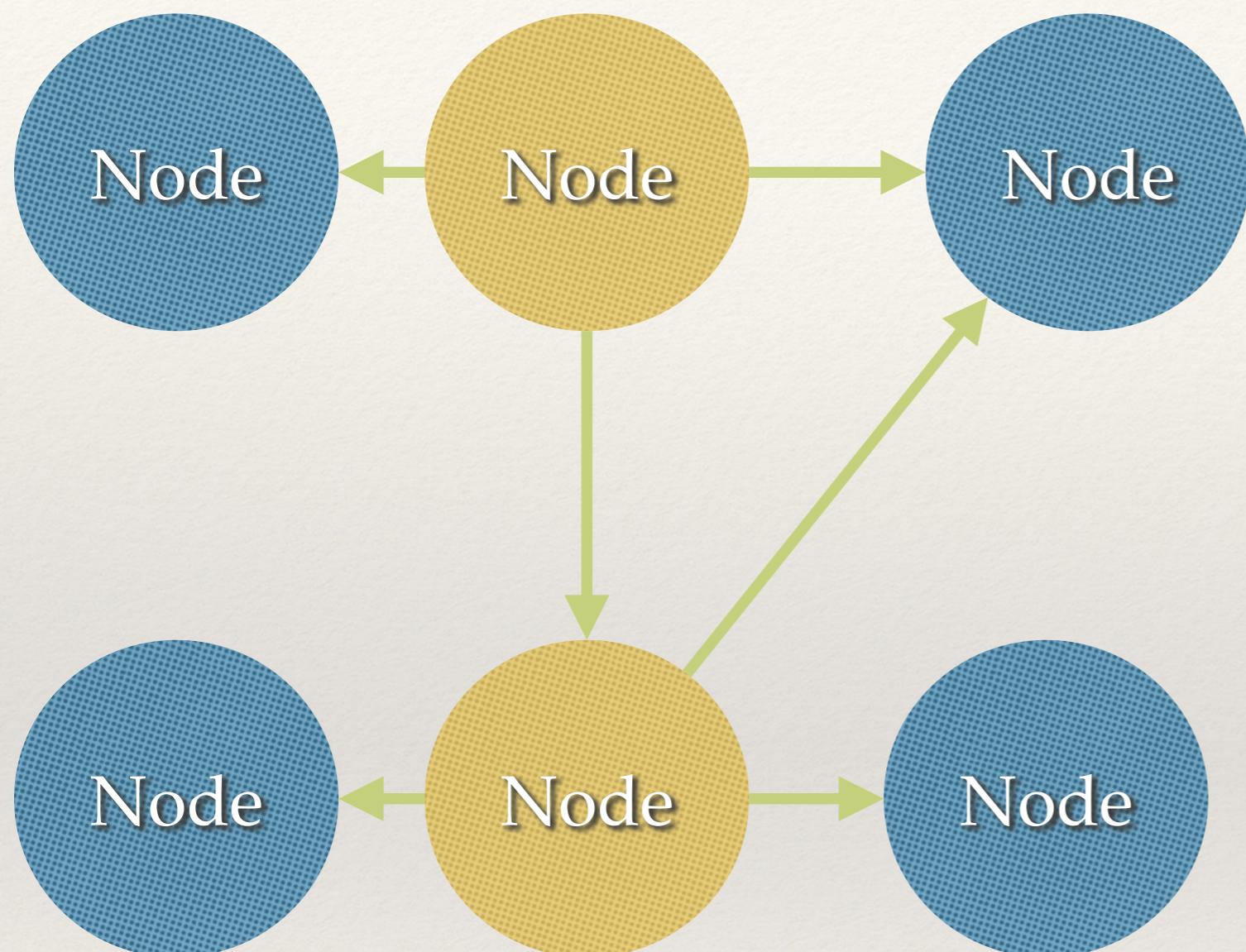


Addiction as a Network Phenomenon

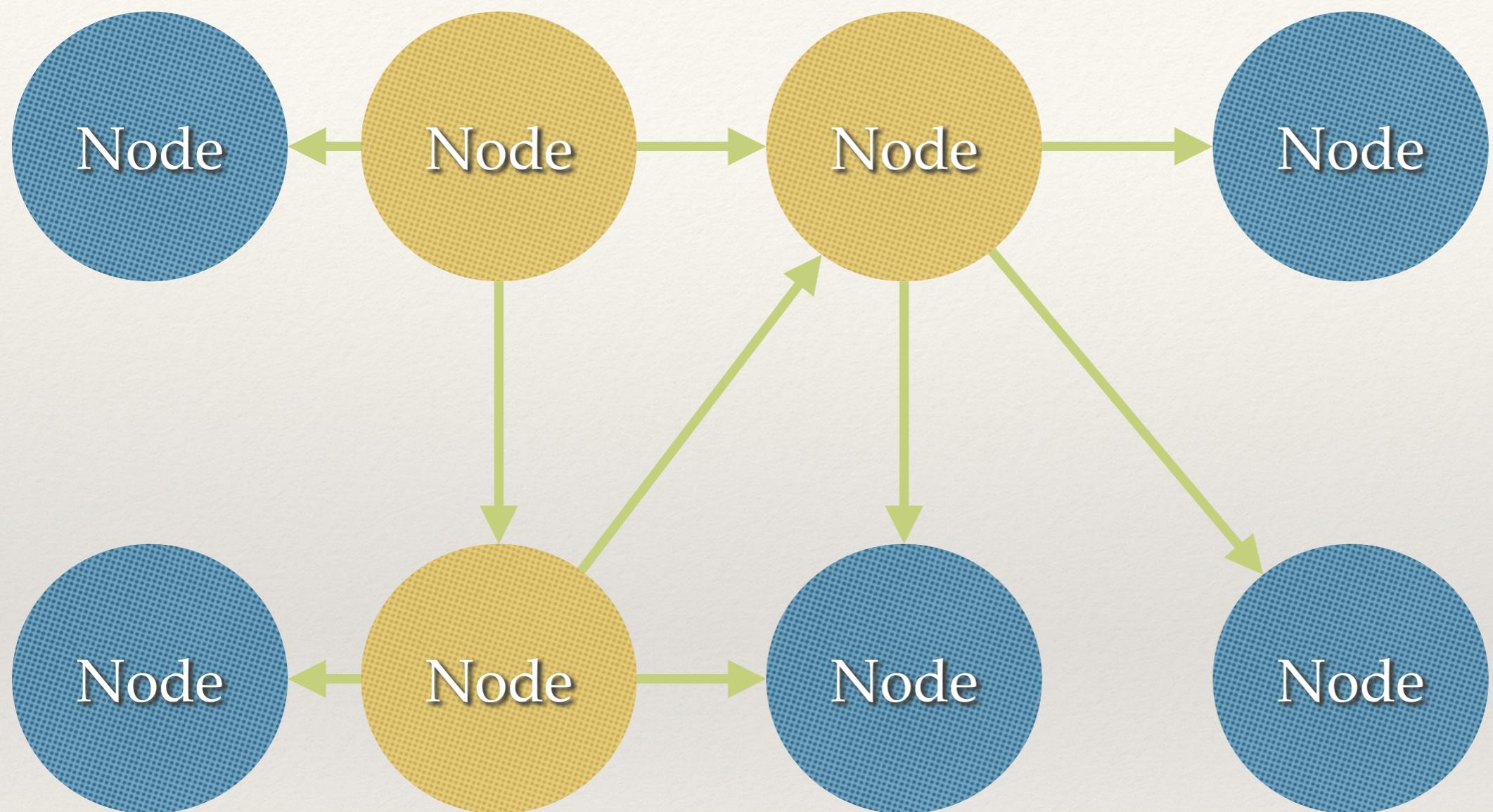
- ❖ How did the widespread abuse of prescription drugs in the United States occur?
 - ❖ Were more people in pain?
 - ❖ Were doctors actively seeking new patients?

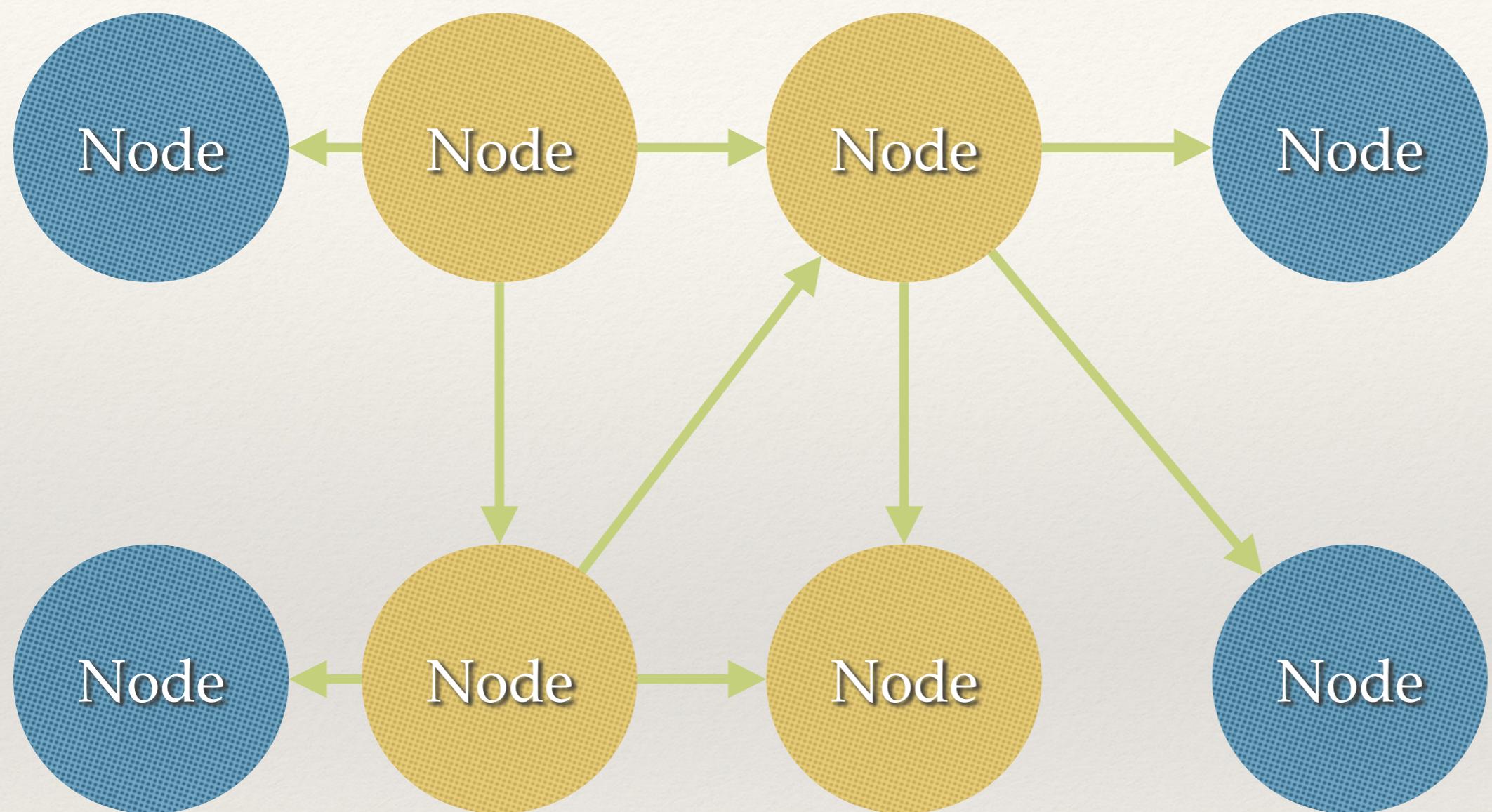


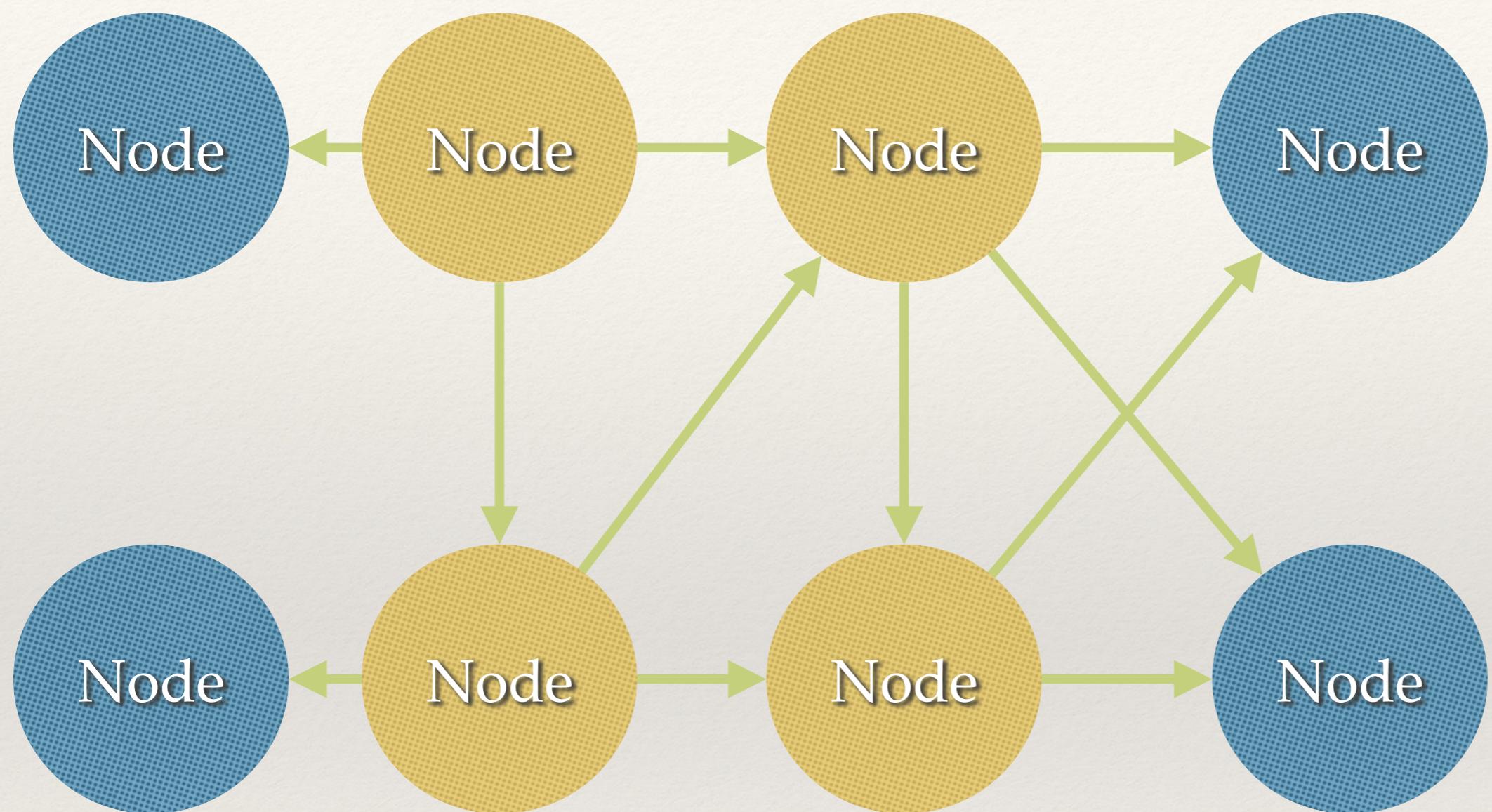
Information about opioids diffused through workplaces, friendships, but also through social media communities

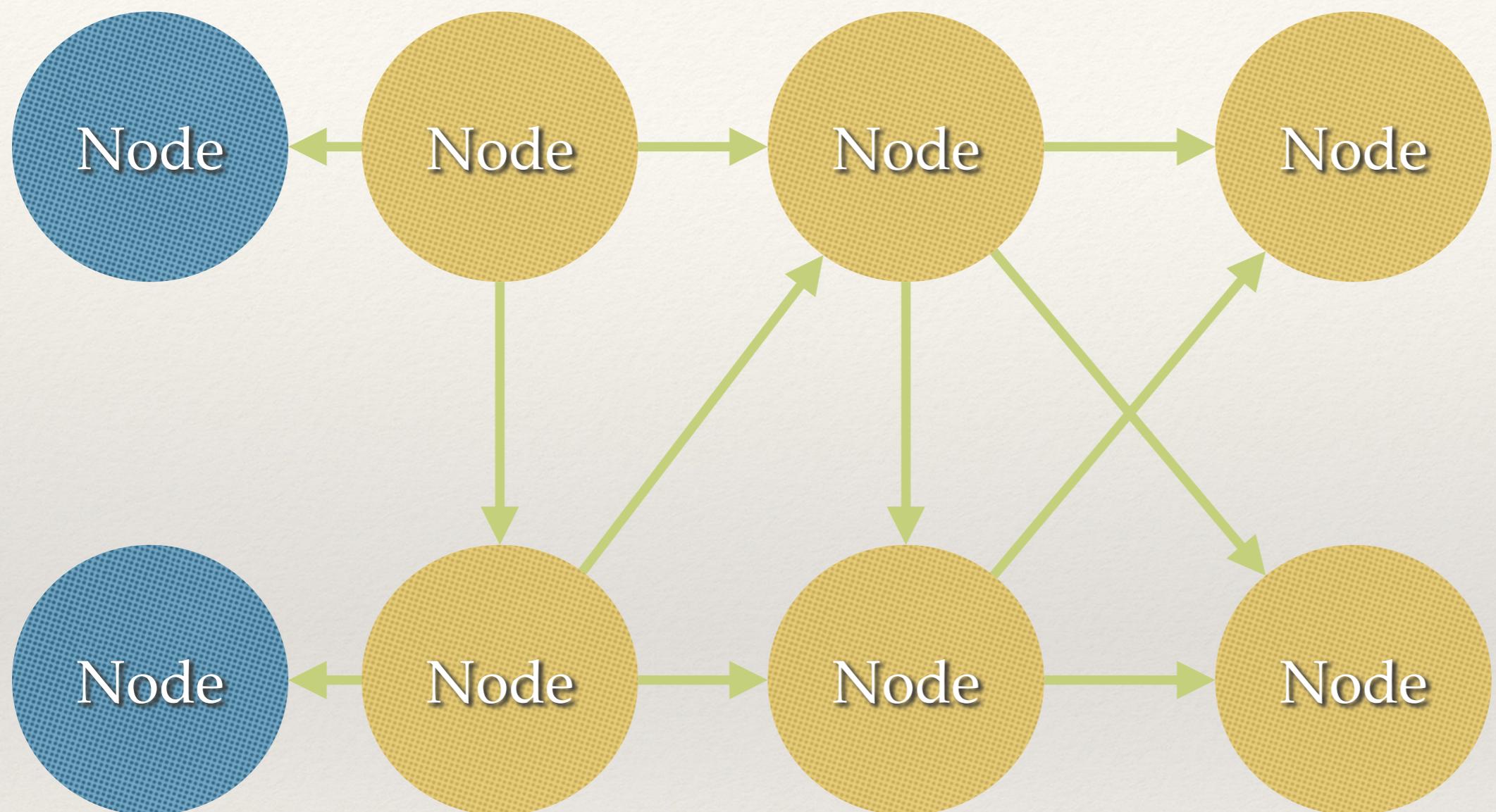


Individuals exposed to this information sought out prescriptions and diffused that information to others

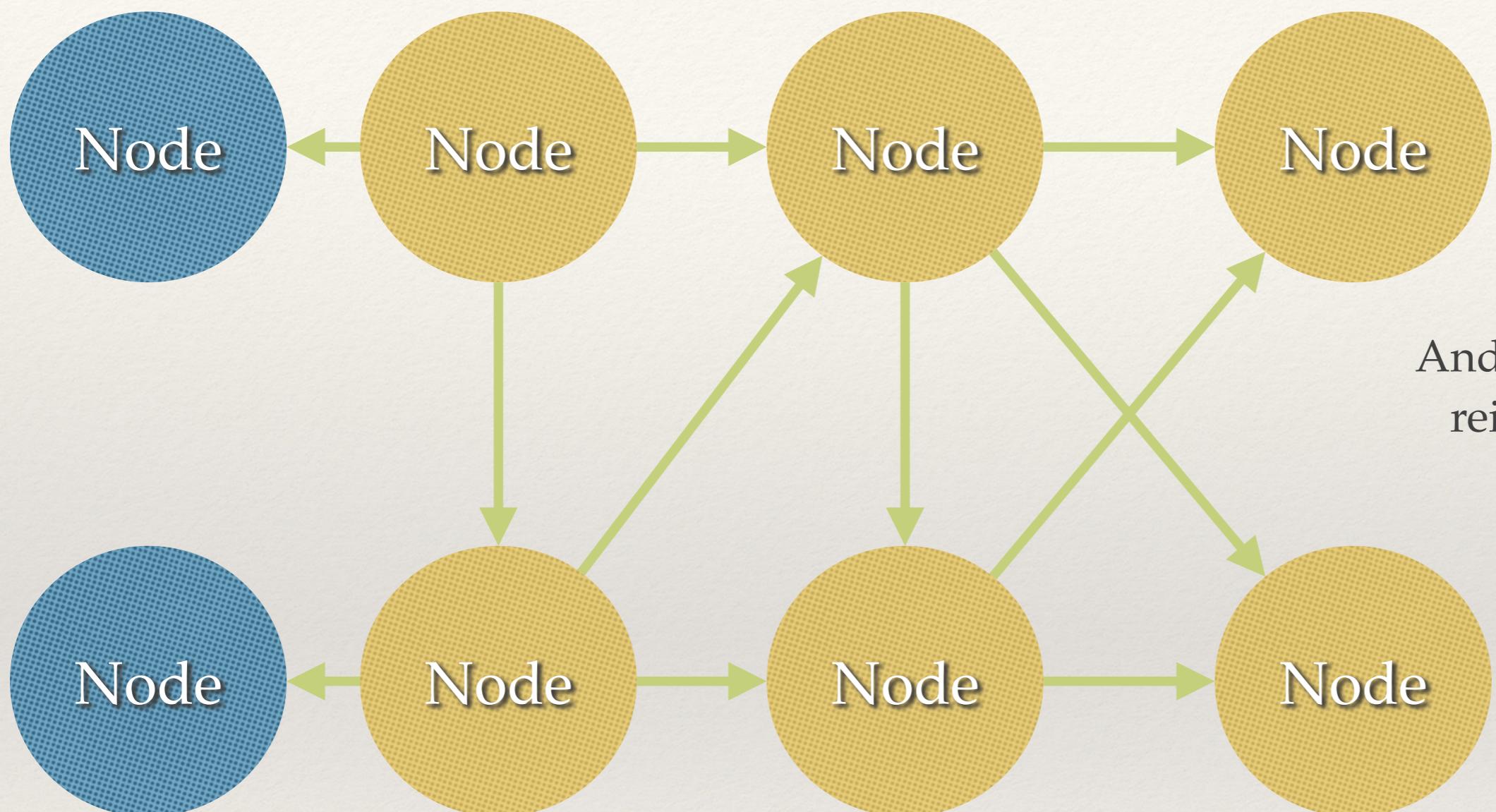








Widespread knowledge
about the access to opioids
spread through networks



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about the access to opioids
spread through networks

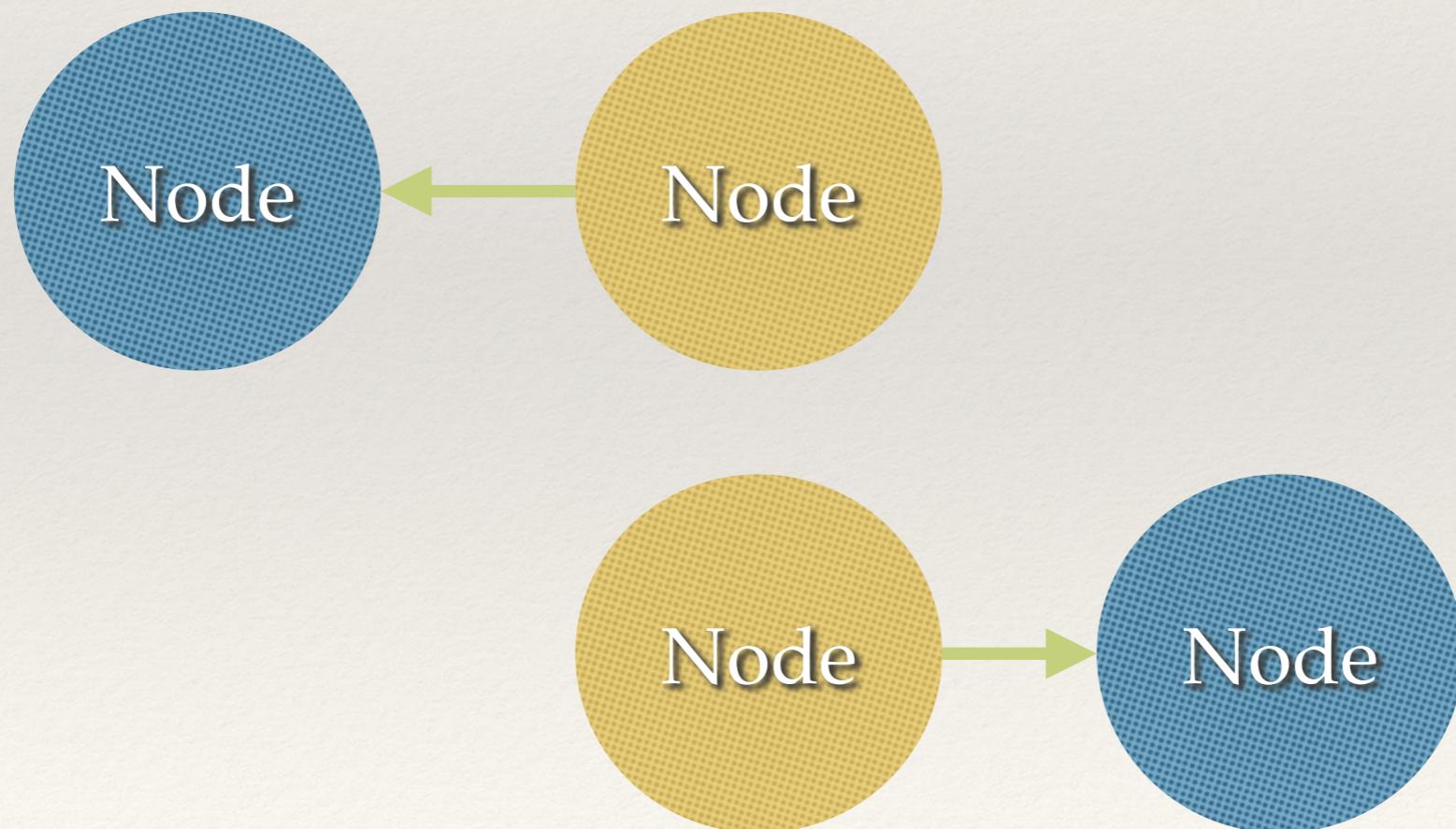
And relationships
reinforced this
behavior

Example: Focused Deterrence

Focused deterrence is built on
the idea that information can
be diffused through networks

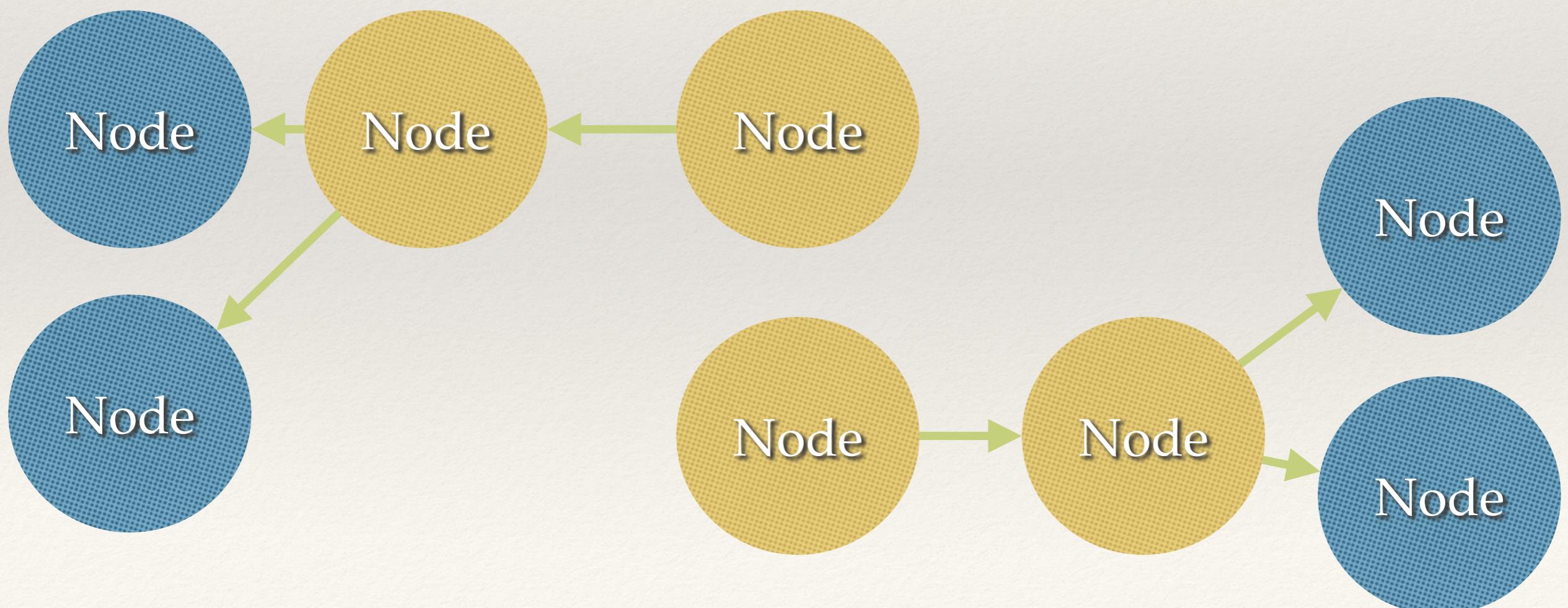
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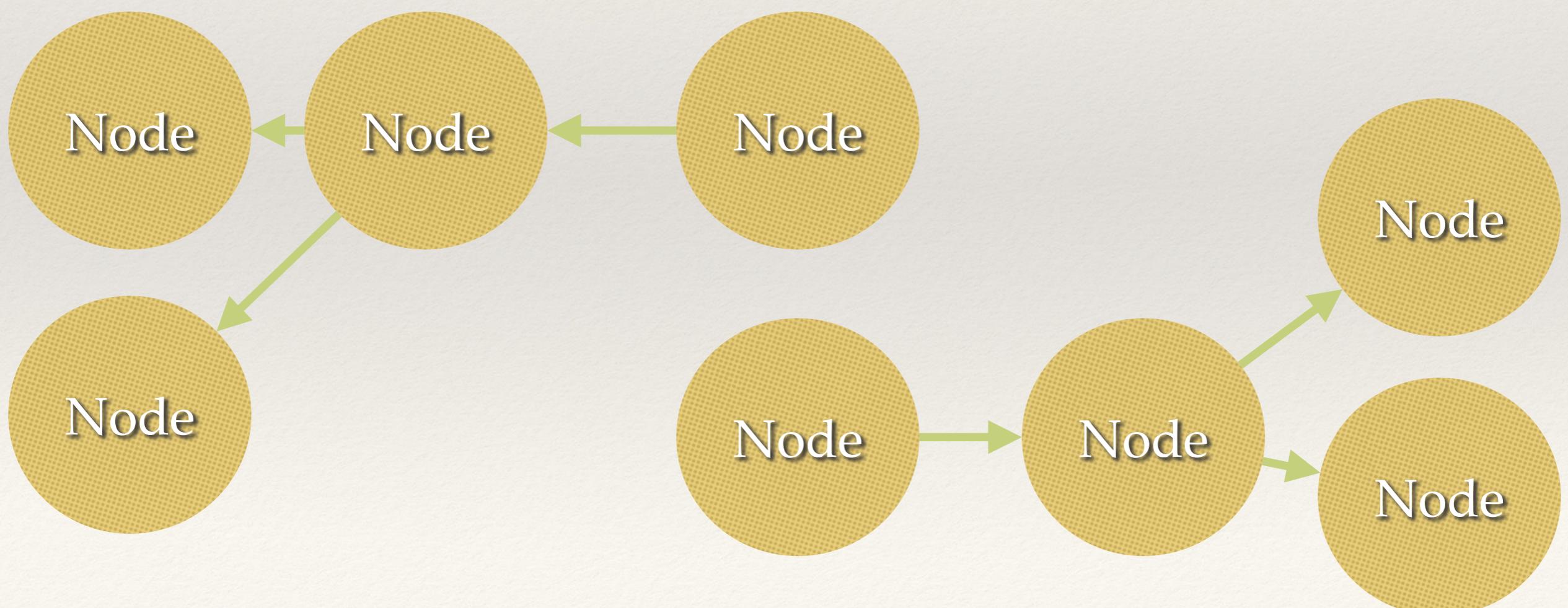
Example: Focused Deterrence

Nodes spread information
about a program
throughout the network



Example: Focused Deterrence

The existing network of relationships is used to spread the message



Why Networks Matters

- ❖ Criminal justice agencies often face situations that involve networks.
- ❖ By leveraging the tools of network analysis, agencies can gain new insights and develop novel approaches and solutions.

Network Science Applications

- ❖ **Youth Justice Workers and Probation:** uncovering hidden links
- ❖ **Law Enforcement:** Targeting influential individuals
- ❖ **Agency Management:** Identify those who may benefit most from intervention
- ❖ **Prisons:** Anticipating potential escalation among conflicting groups
- ❖ **Crime Prevention:** Enhance intelligence gathering, build trust, cooperation, and support from community

What is my stake?

What is my stake?

Two things...

1: Subject Matter Expertise



Online Master of Science in Crime Analysis

Help law enforcement solve crimes and learn to lead a crime analysis unit in the online crime analysis graduate program. You'll gain a strong understanding of the fundamental issues, strengths and limitations associated with crime analysis.

[Learn more](#)

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Program Info

Program Title [Online Master of Science in Crime Analysis](#)

Course Info

Course Title	<u>Social Network Analysis</u>
Course Number	CRJ 507
Canvas Shell	https://canvas.asu.edu/courses/170143
Course Level	Graduate
Course Start-End	January 8 - February 27, 2024
Class Meeting Times	Asynchronous
Class Location	Online

Course Instructors

[Jacob T.N. Young](#) Associate Professor



Office Location: UCENT 649

2: A Responsibility of My Position

Introduction to Social Network Analysis – Online Course



A 3-Day Livestream Seminar Taught by
FILIP AGNEESSENS

UCDAVIS

Social Network Analysis

This course is part of [Computational Social Science Specialization](#)

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Instructor: [Martin Hilbert](#)

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2: A Responsibility of My Position

ASU Charter

“ ASU is a comprehensive public research university, measured not by whom it excludes, but by whom it includes and how they succeed; advancing research and discovery of public value; and assuming fundamental responsibility for the economic, social, cultural and overall health of the communities it serves.

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It is my job to put my subject matter expertise into practice with community partners

Thank you!

Questions?

(A link to the slides will be sent after our meeting concludes)