

# Disrupting & Dismantling Transnational Criminal Organizations

Brandon Behlendorf, Ph.D.

College of Emergency Preparedness,  
Homeland Security, and Cybersecurity  
University at Albany (State University of New York)

October 25<sup>th</sup>, 2017  
University of Texas - El Paso

# Briefing Outline

- Introductions
  - Purpose and Definitions
  - Overview of the Failure Points Project
- What science knows & mostly knows
  - Leadership targeting
  - Organizational adaptation (and its limitations)
- Q&A
- Break
- What science is learning
  - How organizations fail
  - Network vs. supply chain resilience
- How we move forward
- Q&A

# Purpose & Definitions

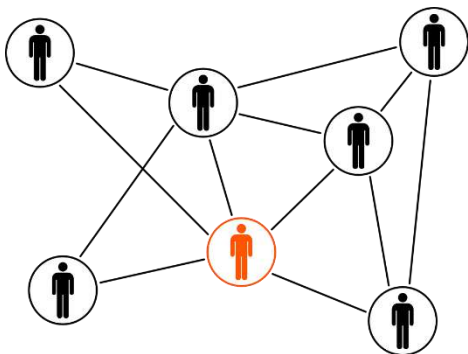
# Purpose

- Short course on disruption & dismantlement in Transnational Criminal Organizations (TCOs)
- Socialize the science of disrupting / dismantling networks
- Bring awareness to key findings and key limitations
- Advance future efforts to improving practice & science through mutual partnerships

# Definitions

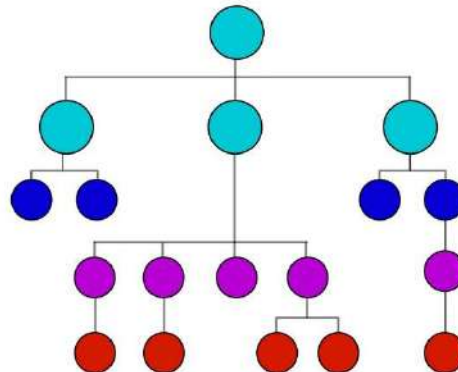
## Illicit network

a network engaged in criminal activity



## Illicit organization

an enterprise defined by criminal activity



## Illicit market

an arena of transaction whose products or methods are criminal



# Definitions

**Disruption** – “to interrupt the normal course or unity of...”<sup>a</sup>

**Interdiction** – “to intercept and prevent the movement of (a prohibited commodity or person)...”<sup>b</sup>

**Dismantlement** – “to disconnect the pieces of...”<sup>a</sup>

**Failure** – “a state of inability to perform a normal function...”<sup>a</sup>

<sup>a</sup>Merriam-Webster, Inc. *Webster's ninth new collegiate dictionary*. Merriam-Webster, 1983.

<sup>b</sup>Dictionary, Oxford English. *Oxford English dictionary online*. (2007).

# Overview of Failure Points Project

# Failure Points in Smuggling Networks

## Project Objectives:

- Analyze strategic behavior and multiplex relationships of actors within smuggling networks
- Document key factors about how smuggling networks have failed
- Identify critical nodes, relationships, and processes which could have led to network failure

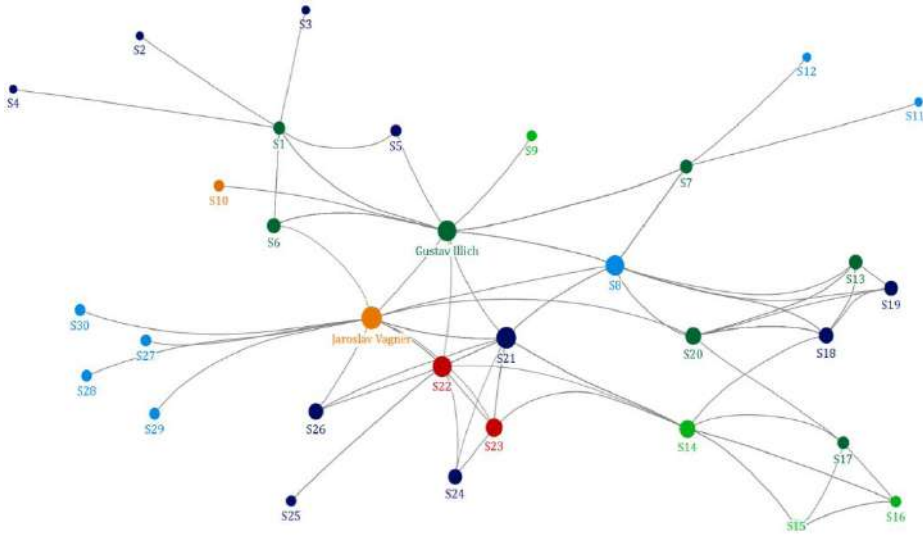


## Case selection

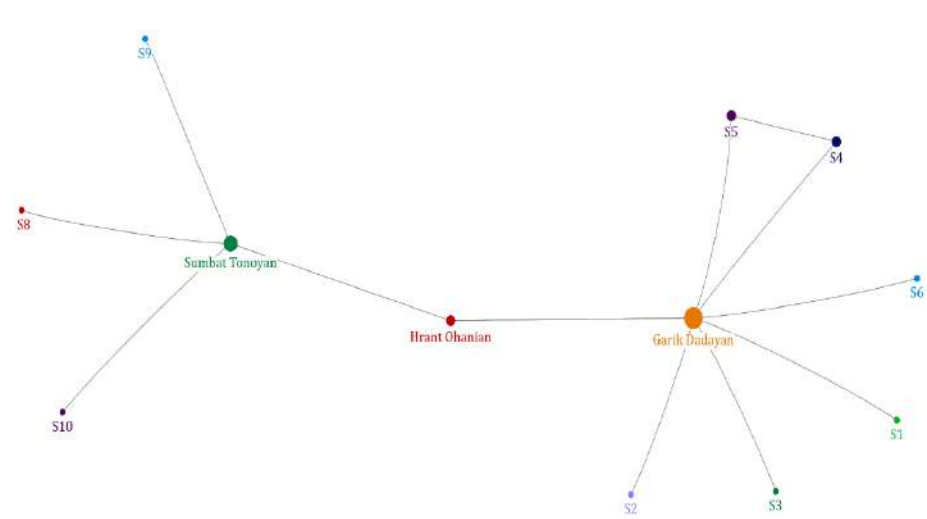
- Analysis of *eight* transnational trafficking networks that differ in terms of:
  - Size (small vs. large);
  - Commodity (drugs, humans, exotic wildlife, arms, and radiological/nuclear material); and
  - Geographic reach of operations (single vs. multi continent).
- Sources came from court records, open source media, government reports, and other unclassified documentation

# The examined networks

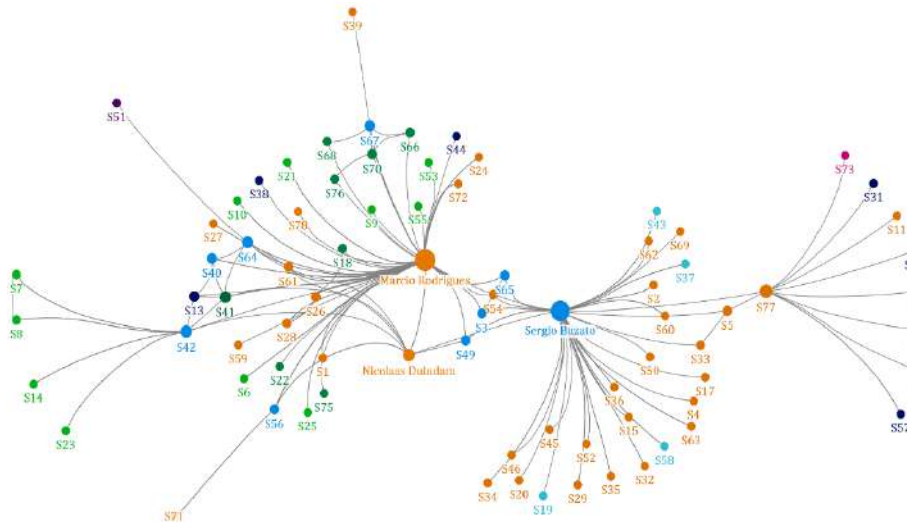
<b>Network Name</b>	<b>Primary Trafficking Route(s)</b>	<b>Commodity</b>	<b>Time Period</b>
<b>Hernan Prada</b>	South America to USA and Europe	Drugs	1988-2006
<b>Jacob Stuart</b>	Canada to USA	Drugs	2006-2011
<b>Sister Ping</b>	China and SE Asia to USA	Humans	1980s-1994
<b>Soto-Huarte</b>	Mexico to US	Humans	2002-2003
<b>Rodrigues / Duindam</b>	South America to USA and Europe	Exotic Wildlife	1998-2010
<b>al-Kassar</b>	Global	Arms	1970s-2007
<b>Dadayan</b>	Eastern Europe	Radiological / Nuclear	2003 & 2010
<b>Vagner-Illich</b>	Eastern to Western Europe	Radiological / Nuclear	1994



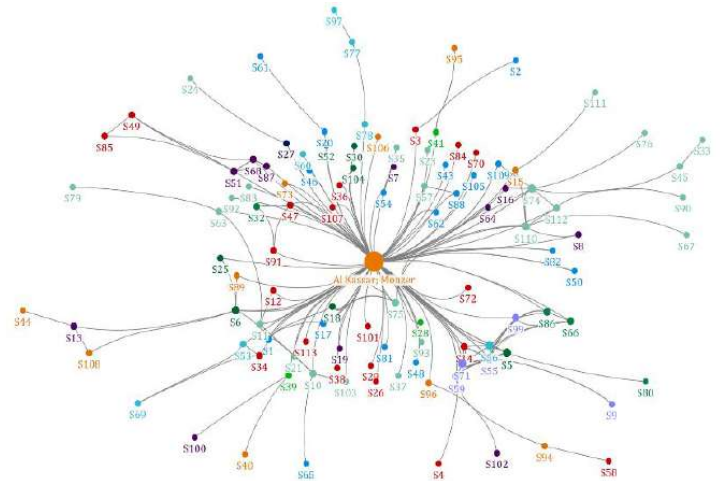
**Vagner / Illich Network  
Nuclear Smuggling**



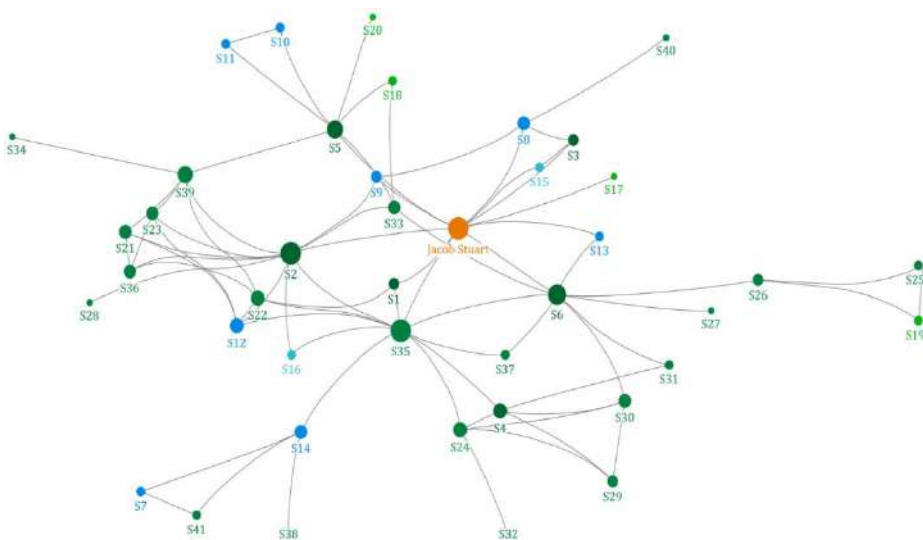
**Dadayan Network  
Nuclear Smuggling**



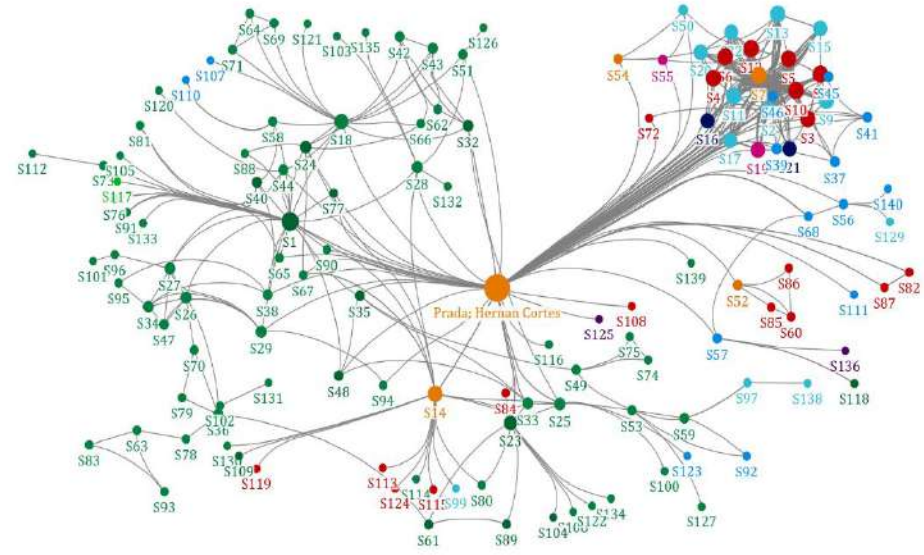
**Rodrigues-Duindam Network  
Wildlife Trafficking**



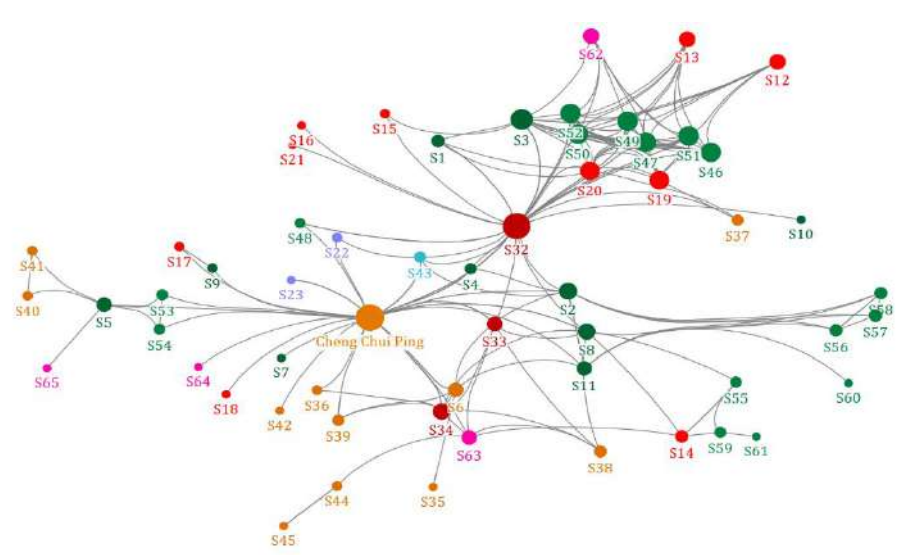
**Al-Kassar Network  
Arms Trafficking**



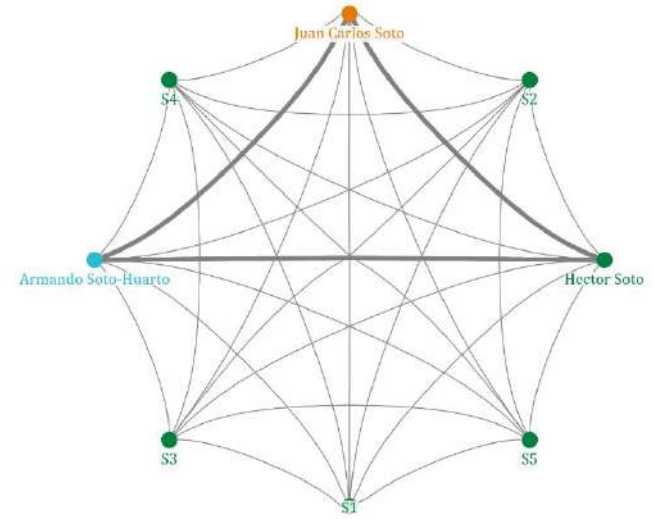
**Jacob Stuart Network  
Drug Smuggling**



**Hernan Prada Network  
Drug Smuggling**



**Sister Ping Network  
Human Smuggling**



**Soto-Huarto Network  
Human Smuggling / Trafficking**

# Q & A

# What Science Knows:

## Targeting Leadership to Disrupt Networks

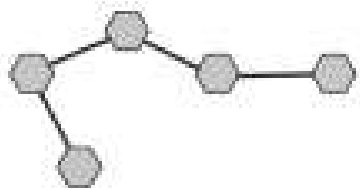
# Targeting Leadership

Targeted removal involves the coercive (i.e., arrest or killing) of key actors within illicit networks in order to disrupt or dismantle operations.

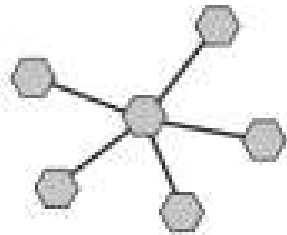
Lots of Questions:

- Who to target (leaders, brokers, etc.)?
- How to target (sequentially or simultaneously)?
- Is it applicable in all situations?
- How will networks respond?

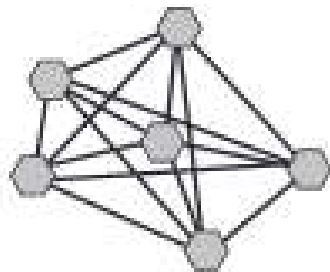
# Network Configurations



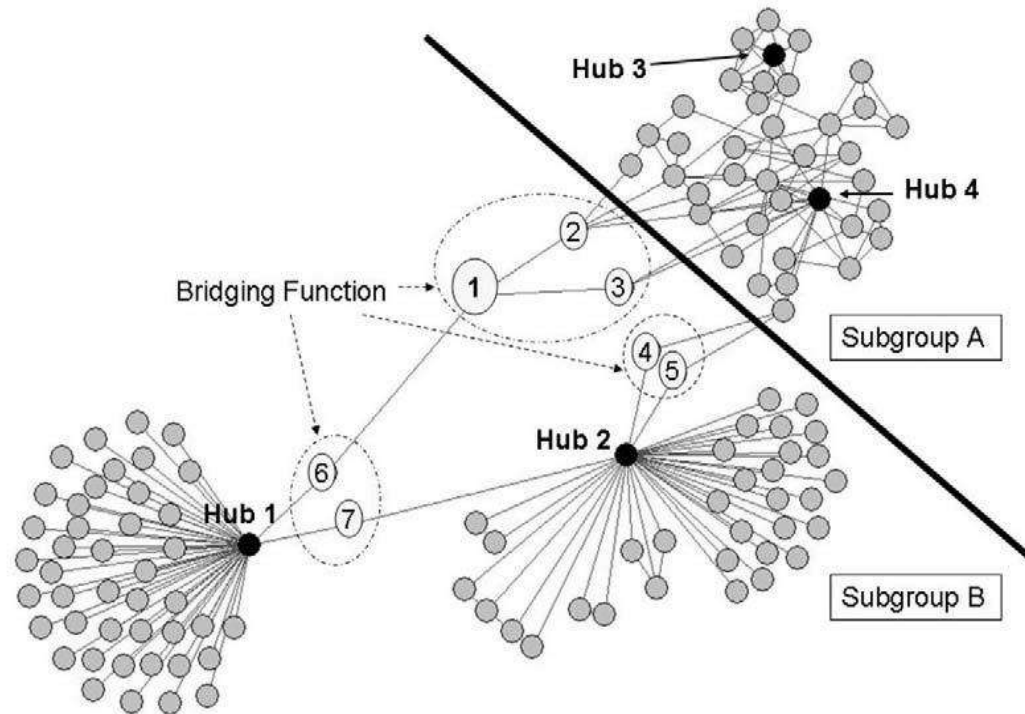
Chain network



Star or hub network



All-channel network

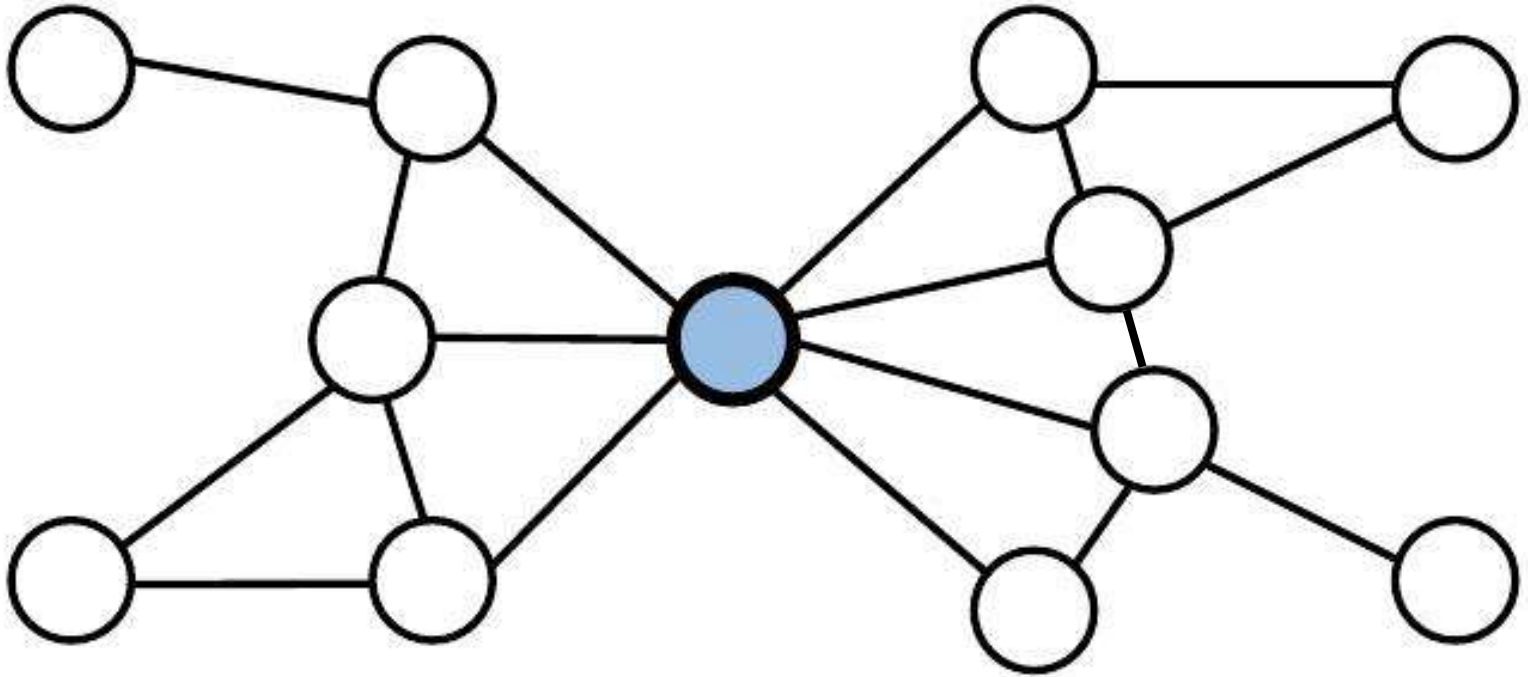


John Arquilla and David Ronfeldt, "The Advent of Netwar (Revisited)." In, John Arquilla and David Ronfeldt (eds.), *Networks and Netwar: The Future of Terror, Crime, and Militancy* (Santa Monica, CA: RAND Corporation, 2001): 8

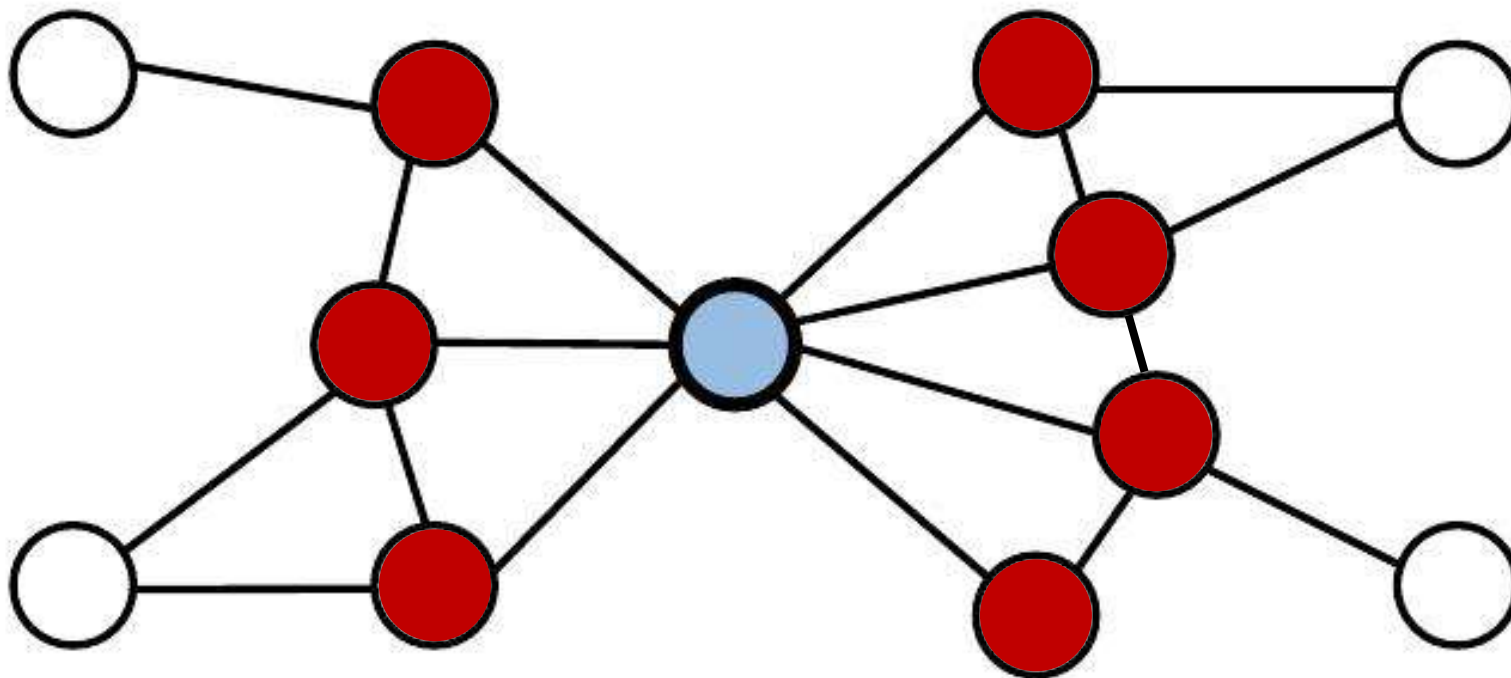
Aili Malm and Gisela Bichler. "Networks of Collaborating Criminals: Assessing the Structural Vulnerability of Drug Markets." *Journal of Research in Crime and Delinquency* 48, no. 2 (February 7, 2011): 276



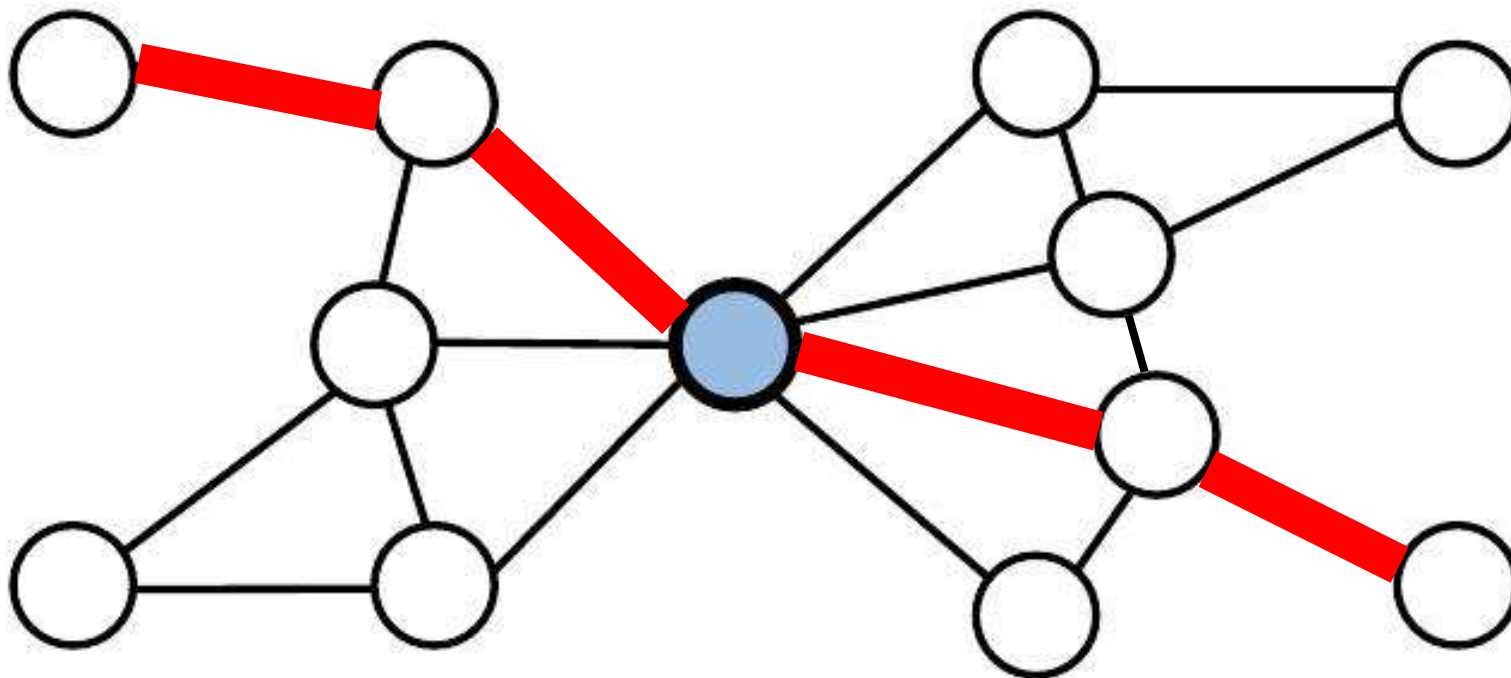
# Centrality



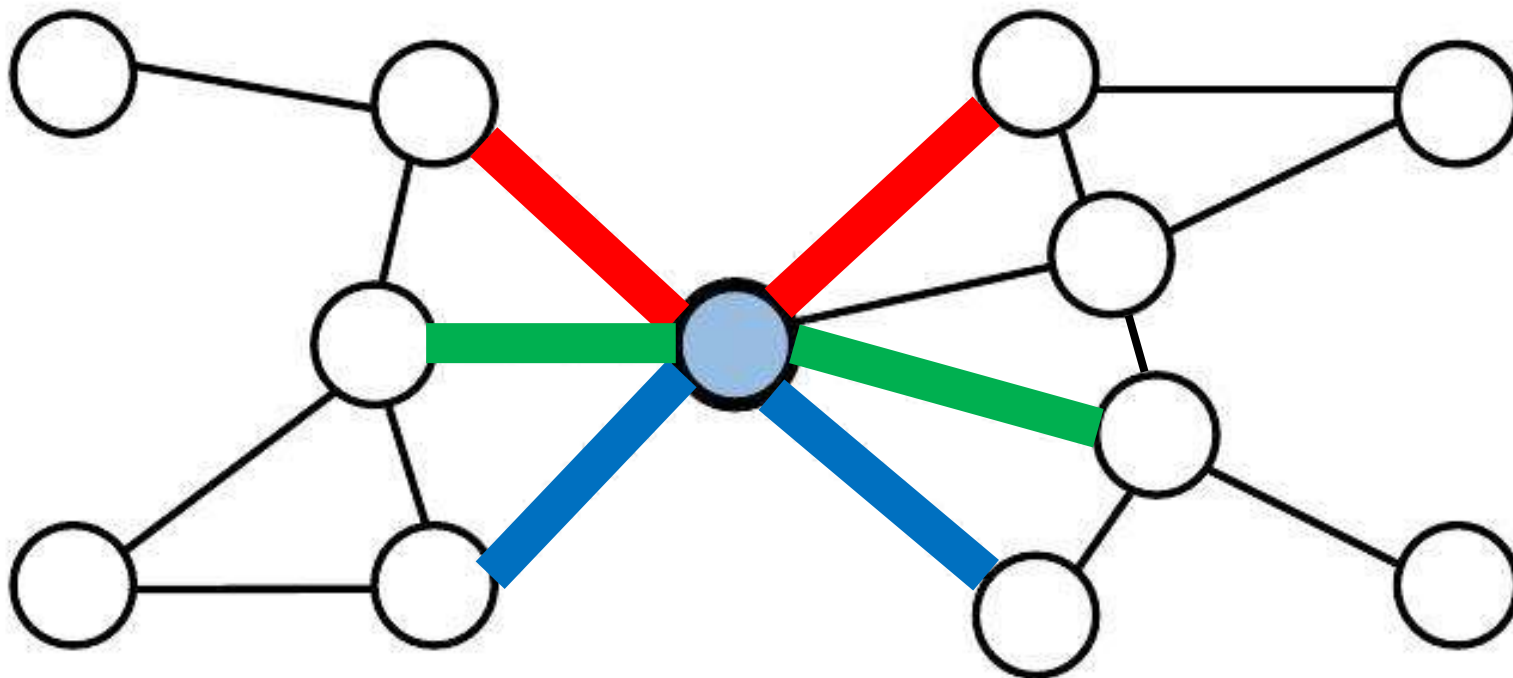
# Centrality: Degree



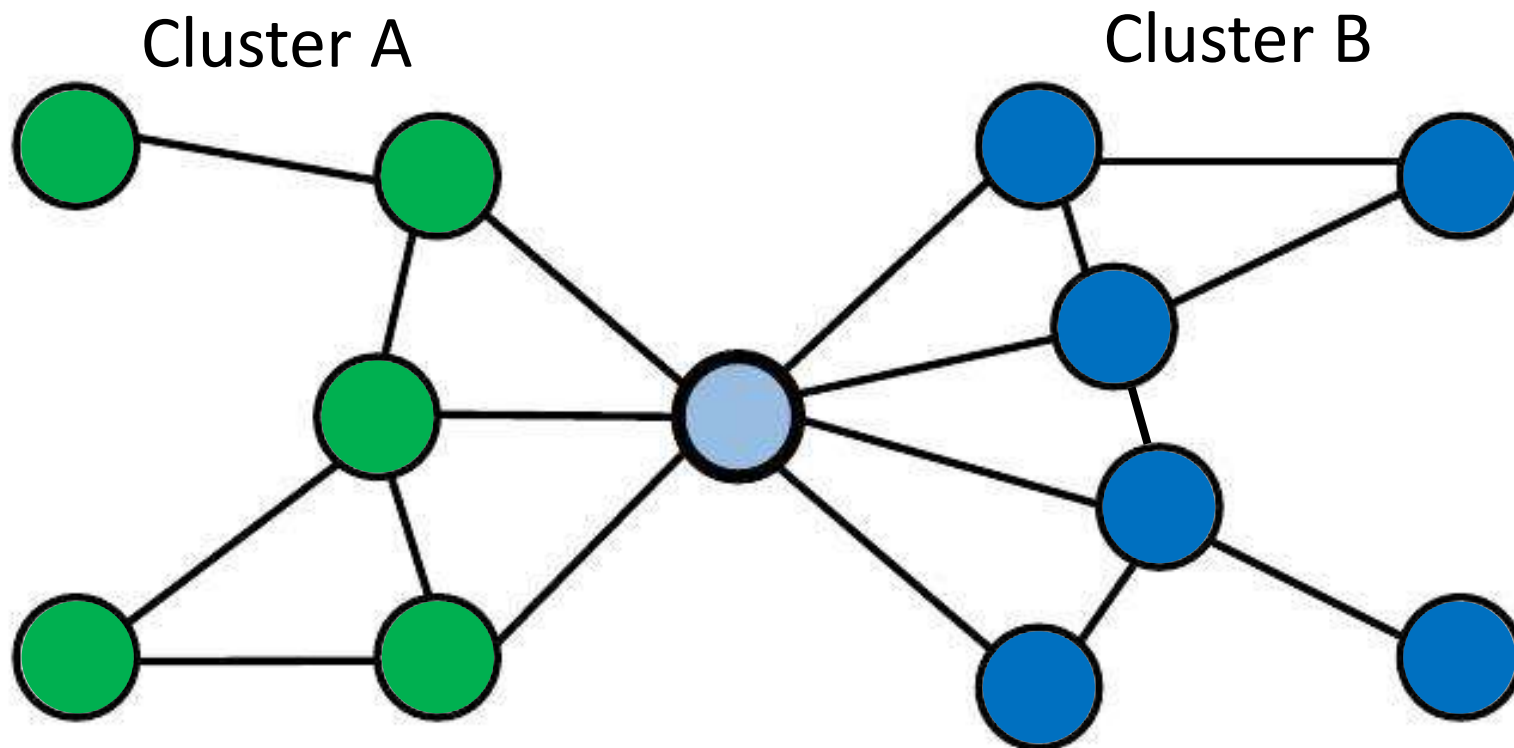
# Centrality: Closeness



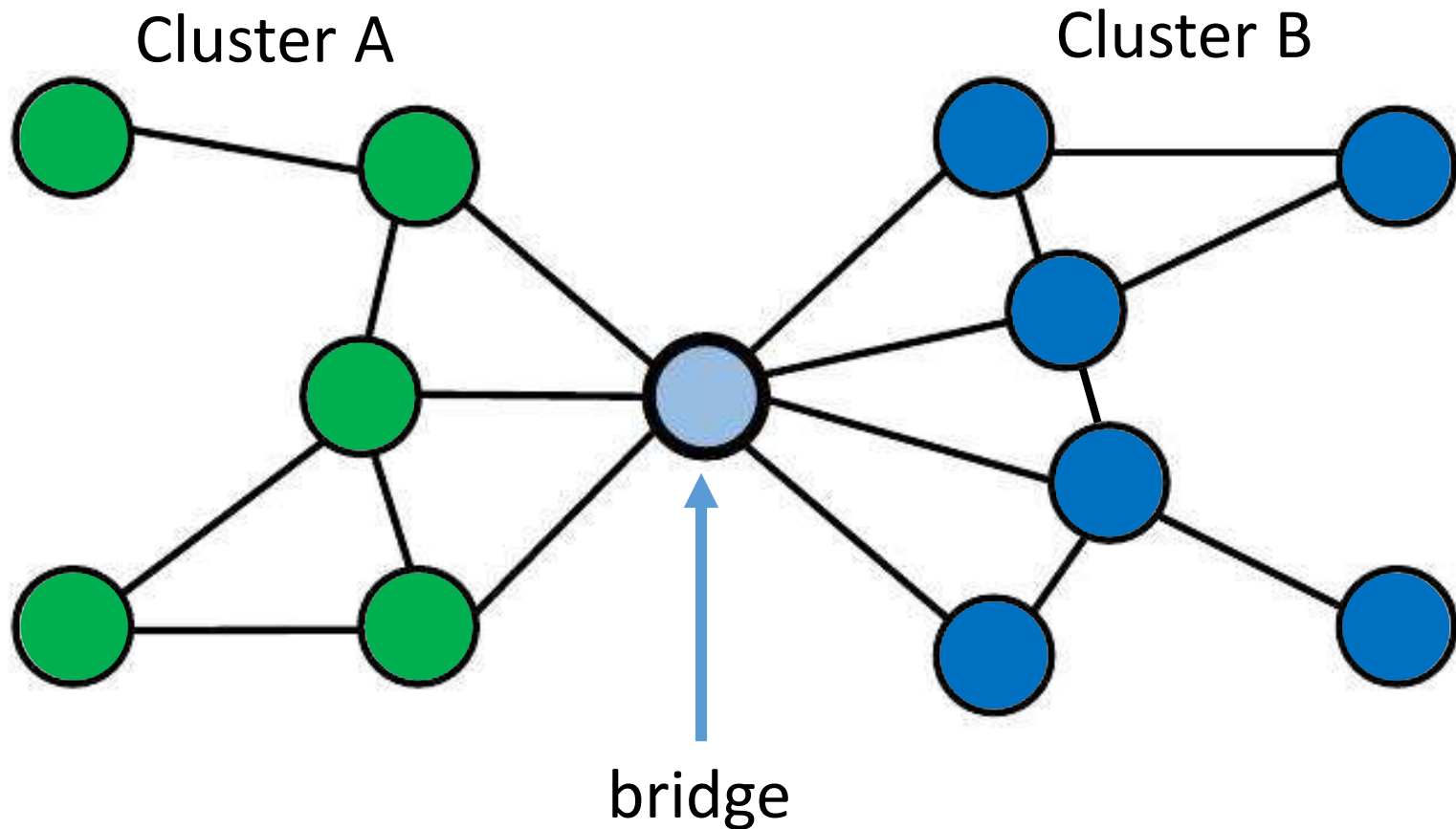
# Centrality: Betweenness



# Clustering

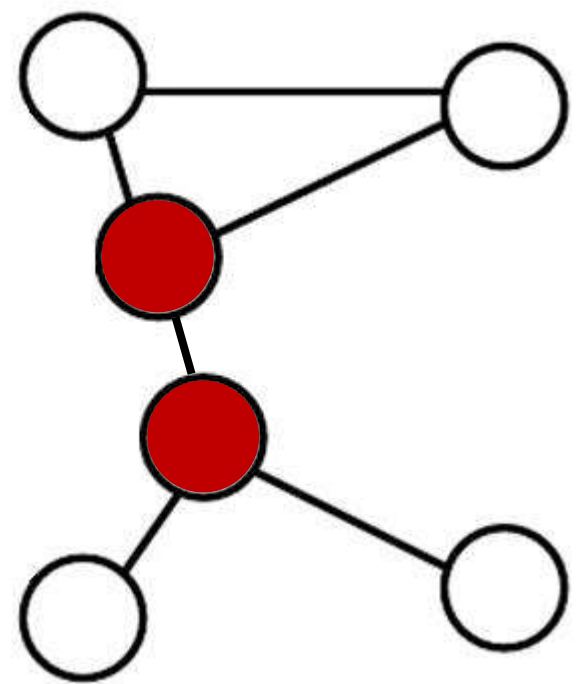
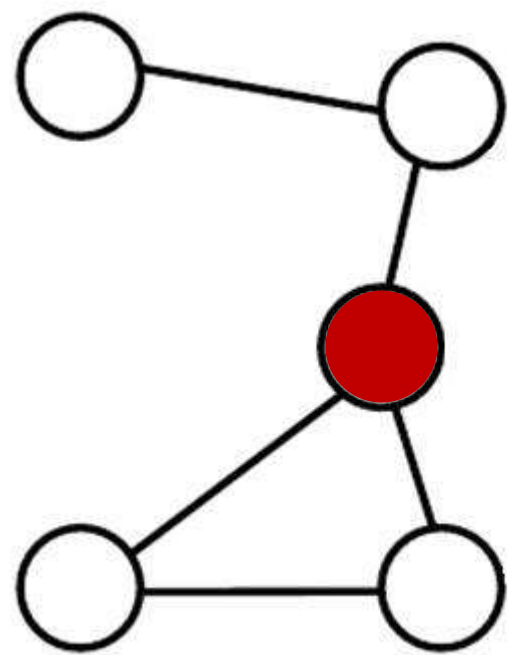


# Small Worlds



**Think six degrees of separation**

# Key Player Problem



# Who to target?

- Depends on who you consider a “leader”?
  - Manager?
  - Broker?
  - Facilitator / Coordinator?
  - Prioritize connections (social capital) or role (human capital)?
- Depends on how you construct the network
  - Among organizational relationships, group leaders were the most central actors (Calderoni 2014, Duijn et al, 2014)
  - When mapped against communication networks, group leaders were peripheral to the network (Morselli, 2010; Agreste et al, 2016)



# Who to target?

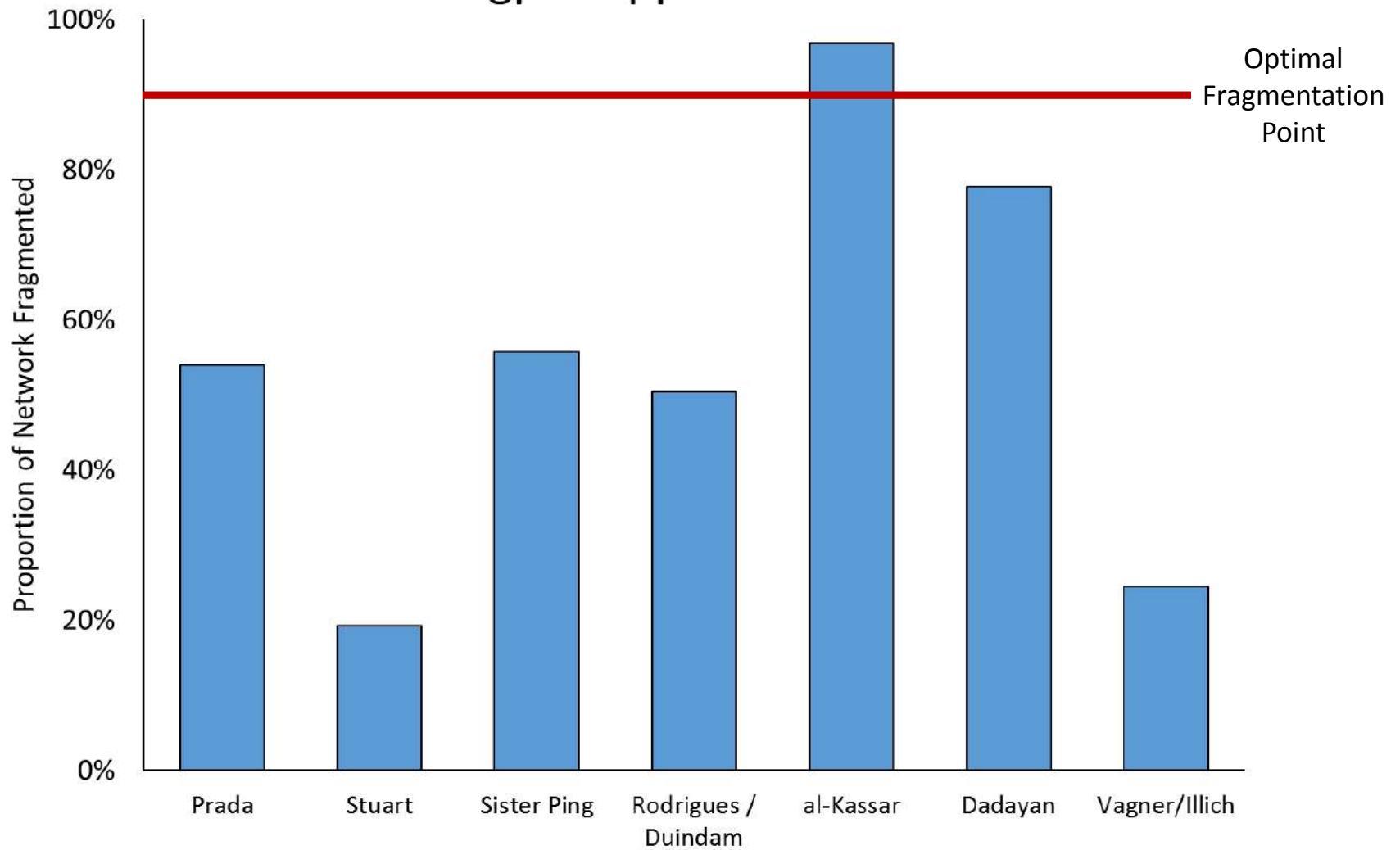
- Not all networks are the same
  - Many studies have found drug trafficking networks to be highly centralized around a few key leaders and loosely organized among other members
    - Can scale
    - Can adapt quickly
    - Can replace [to some degree]
  - In some cases, large networks persisted for years; in other locations, networks comprised small, temporary coalitions among transporters, brokers, and dealers (Eck and Gersh, 2000; Tenti & Morselli, 2014)

# Addressing “Who” to Target

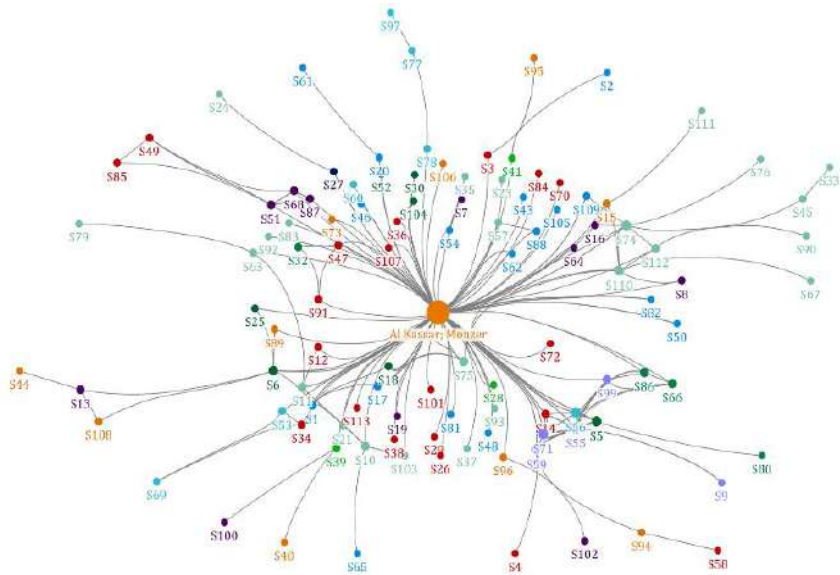
- Comparative analysis of the effects targeted removal of key-actors using four different methods of measuring nodal importance:
  1. “Kingpin” – target the **key leader**
  2. Degree centrality – target the **most connected**
  3. Betweenness centrality – target **brokers**
  4. Key-player measure – target those who most **connect the network**
- Sequential and simultaneous removal of key-actors occurred for each network until they achieved optimal disruption (90% fragmentation).

# Results

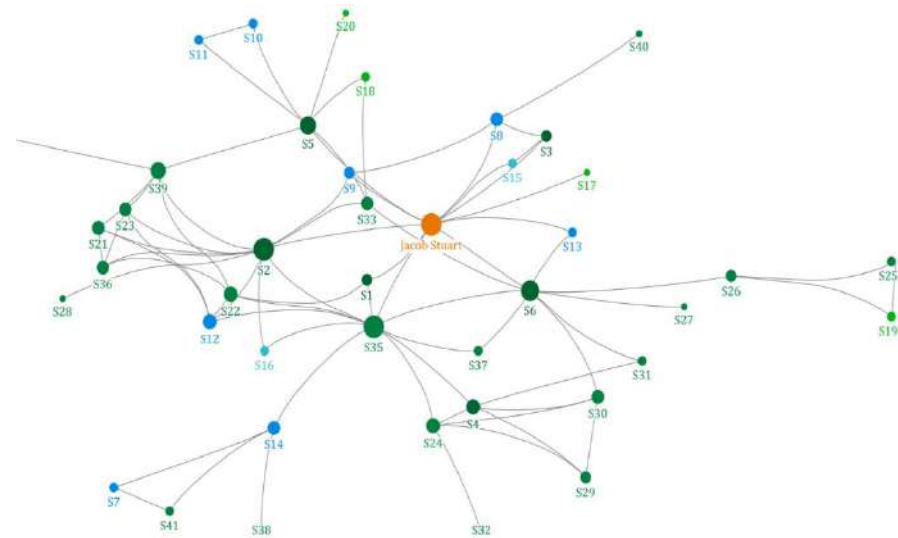
## Kingpin Approach



# Results

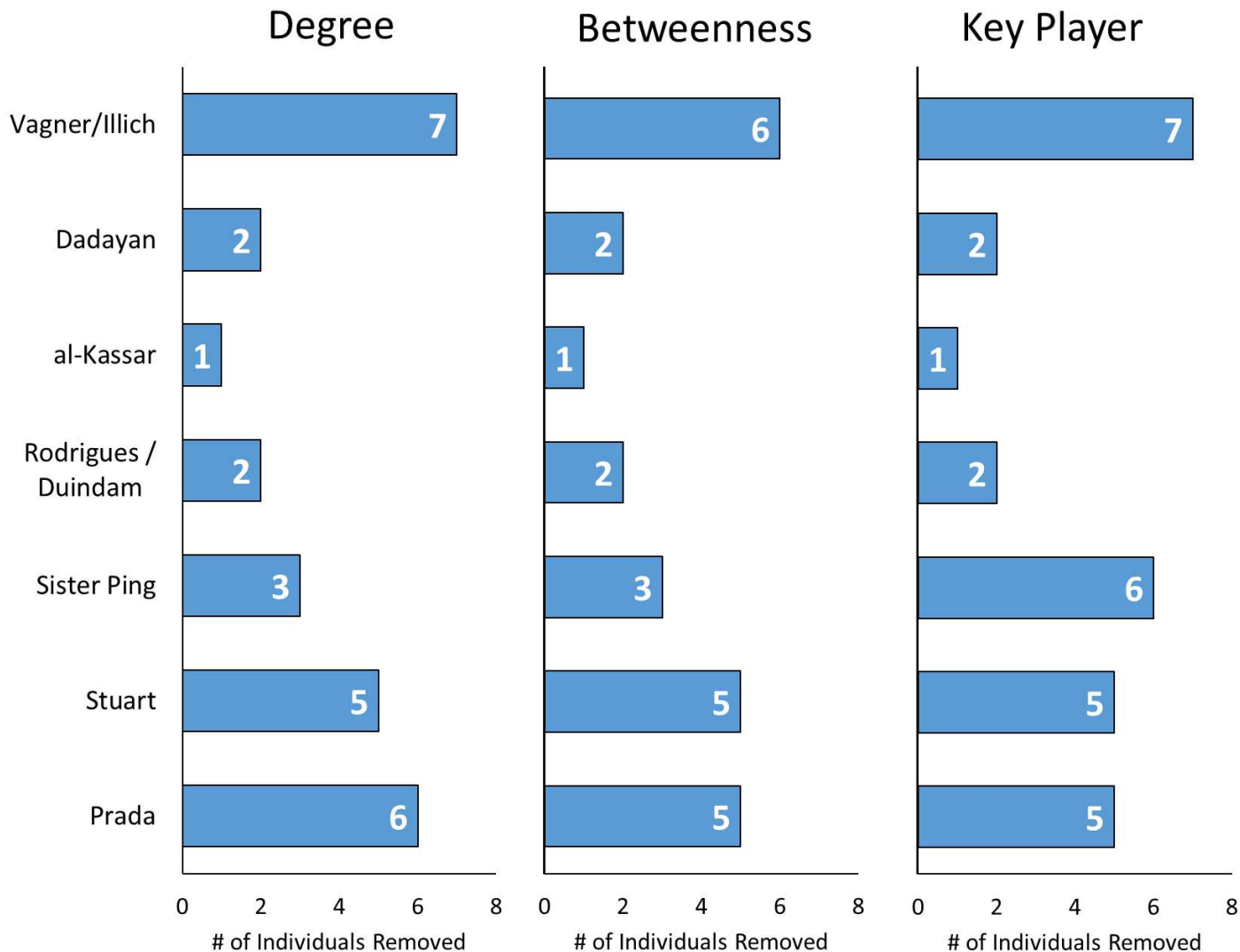


**Al-Kassar Network**  
Arms Trafficking



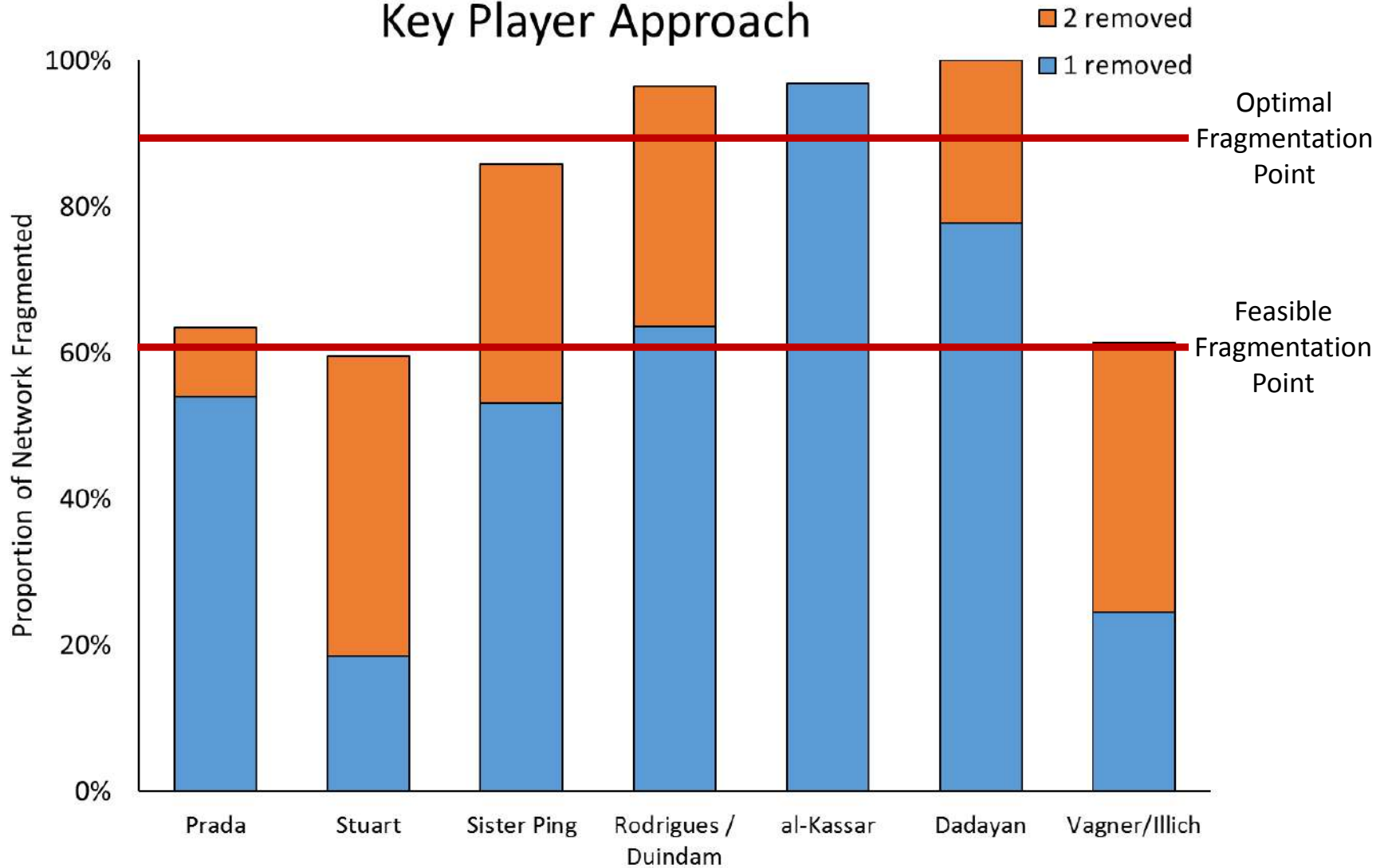
**Jacob Stuart Network**  
Drug Smuggling

# # of Individuals Removed to Reach 90% Frag



# Results

## Key Player Approach

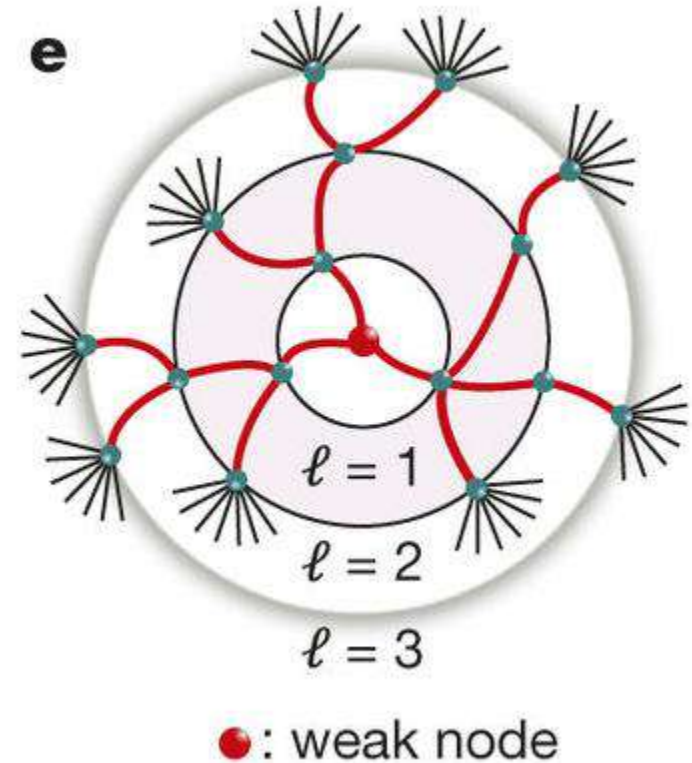


## Results: Moving beyond kingpins

- To maximize the fragmentation of complex networks, need to remove more than the nominal (i.e., “kingpin”) leader.
- Different network structures and characteristics means there is no “one approach fits all” for optimizing targeted removal strategies.
- More complex networks required the removal of up to seven key-actors to become optimally fragmented.

## Results: Moving beyond kingpins

- Find “weak nodes” (Morone & Makse, 2015)
- Markets are more resilient to disruption (Duijn et al 2014; Duxbury and Haynie, 2017)
  - splinter and monitor
- Re-assess the assortative nature of criminal networks (Wood, 2017)
  - Highly-connected linked with weakly-connected





# What Science Mostly Knows

## Organizational Adaptation (and Limitations)

# Ability to Adapt

- Illicit organizations are constantly **balancing security & efficiency** (Morselli and Petit, 2007)
- In response to intervention, they **optimize activities and avoid/coopt detection**
- Optimization requires **recurring adaptation**

# Ability to Adapt

- Adaptation is essential part of illicit network / organization operations
  - Shipments are interdicted
  - Demand escalates
  - New markets open and other close
- Depending on law enforcement interdiction, limited mechanisms for adaptation
  - Arrest an individual – replace them
  - Interdict a shipment – send another / multiple
  - Close a route – find an alternative path

# Positive Adaptations

- Strategic and technological improvements
  - New concealment methods
  - Improved security protocols
- Differentiated operations and structure
  - Compartmentalized functions
- Shifted operations to new routes
- Shifted operations towards new priorities
  - E.g. Moving from trafficking to money laundering

# Limitations of Adaptation

- Problems of Capacity or Capability
  - Structural inability to adapt
  - Temporal incapacity to adapt
- Strategic Miscalculation
  - Choice of new locations / pathways
  - Choice of new partners

# Q & A