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 25th, 2017
University of Texas - El Paso
What Science is Learning

Network vs. Supply Chain

Resilience
Resilience

Resilience - the “ability to maintain and replace actors and linkages and make strategic trade-offs between differentiation and integration” (Bakker, Raab and Milward, 2012)

**Network perspective**
- Redundant links
- Replaceable nodes

**Supply-chain perspective**
- Redundant roles
- Replaceable pathways
## Resilience: Role and Operational Redundancy

### Segment of the Supply Chain

<table>
<thead>
<tr>
<th>Case Study</th>
<th>Prod.</th>
<th>Dist.</th>
<th>Trans.</th>
<th>Retail</th>
<th>Consumer</th>
<th>Years</th>
<th>Logistics</th>
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<td>Yes</td>
<td>Yes</td>
<td>15+</td>
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**Prod. = Production**  
**Dist. = Distribution**  
**Trans. = Transportation**
Resilience: Cross-Functionality

• It is more than just network ties; it is the relationships between functions within a network that are also important

• Networks often compartmentalize portions of network operations to reduce the knowledge of network operations among members

• Yet network operations are fluid, and these compartments may be interchangeable between network members

• Relationships between members of different functions can highlight resilient capabilities of the network itself
Moving Forward
Key takeaways

• Target at least 2 “leaders” for removal

• Networks don’t always positively adapt – use for your advantage

• Pursue failure rather than dismantlement

• Failure is more than interdiction; options to encourage failure more than just arrest

• Resilience is both structural and functional; make sure you analyze both

• No one method for failure - no silver bullet
The Science of TCOs is Young

- Most studies involve 1 or 2 organizations
- Few studies are cross-commodity
- Few (if any) studies of interdiction strategies
- Heavy emphasis on qualitative case studies
  - Most quantitative analysis is within a single network
- Few studies analyzing role and operational redundancy
- Most studies originate outside U.S.
International Efforts Advancing

- Efforts to research disruption and dismantlement strategies have primarily originated overseas in the past 15 years
  - Primary driver - Willingness by government agencies to share data
  - Canada (Carlo Morselli, Martin Bouchard, etc.)
  - Italy (Franscisco Calderoni, Ernesto Savona, Diego Gambetta, etc.)
  - UK (Federico Varese, Paolo Campana, etc.)
  - Dutch intelligence organizations embed criminologists
Advancing the Science of Disruption

• A number of criminologists in US (Aili Malm, Gisela Bichler, etc.) already working on disruption/dismantlement questions
  • Limited access to existing data; often have to extract from court records, open sources, etc.

• A number of network scientists in US working on disruption / dismantlement applications
  • Testing methods against available data (Linkedin, Yelp, etc.) rather than valid data (criminal networks, call records, etc.)

• Need: a data warehouse of ground-truth network and operational data on transnational criminal organizations available to researchers, technology developers, and practitioners
Proposal: Project 100

- To collect, code, and make available network and operational data from closed investigations against 100 TCOs in the United States
  - Law enforcement partners will provide case files from closed investigations
  - UAlbany will extract and code structured data from case files
  - Resulting data will be stripped of PII, agency identification will be removed, and data will be geographically and temporally adjusted to prevent identification
  - Final, anonymized dataset will be made publicly-available for global research on disruption, dismantlement, and failure of TCOs
Benefits of Mutual Partnership

• New scientific advances
• New technologies developed
• New operational strategies devised

Moving the fight against TCOs from anecdote-driven to evidence-based
It’s Been Done Before: Predictive Policing

• Origination = Pin Maps
• LEOs shared crime data
• Criminologists develop hotspots concept
• Hotspots leads to revised policing strategies
• Publicly-available crime data leads to other disciplines participating
• Predictive policing algorithms built on publicly-available crime data
• New deployment strategies from predictive policing
Who is willing to partner to advance the science of countering TCOs?

Contact:

Brandon Behlendorf, Ph.D.

bbehlendorf@albany.edu
Q & A
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Graphic from initial centrality slide:
https://www.slideshare.net/tom.zimmermann/changes-and-bugs-mining-and-predicting-development-activities

References

• Agresti, Santa, Salvatore Catanese, Pasquale De Meo, Emilio Ferrara, and Giacomo Fiumara. "Network structure and resilience of mafia syndicates." Information Sciences 351 (2016): 30-47.


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