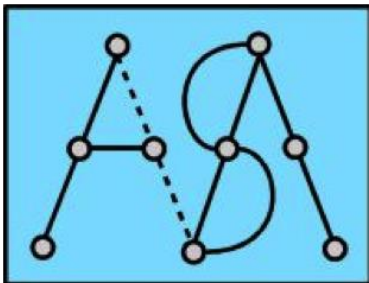# Covert Networks: Theories and Applications of Network Analysis

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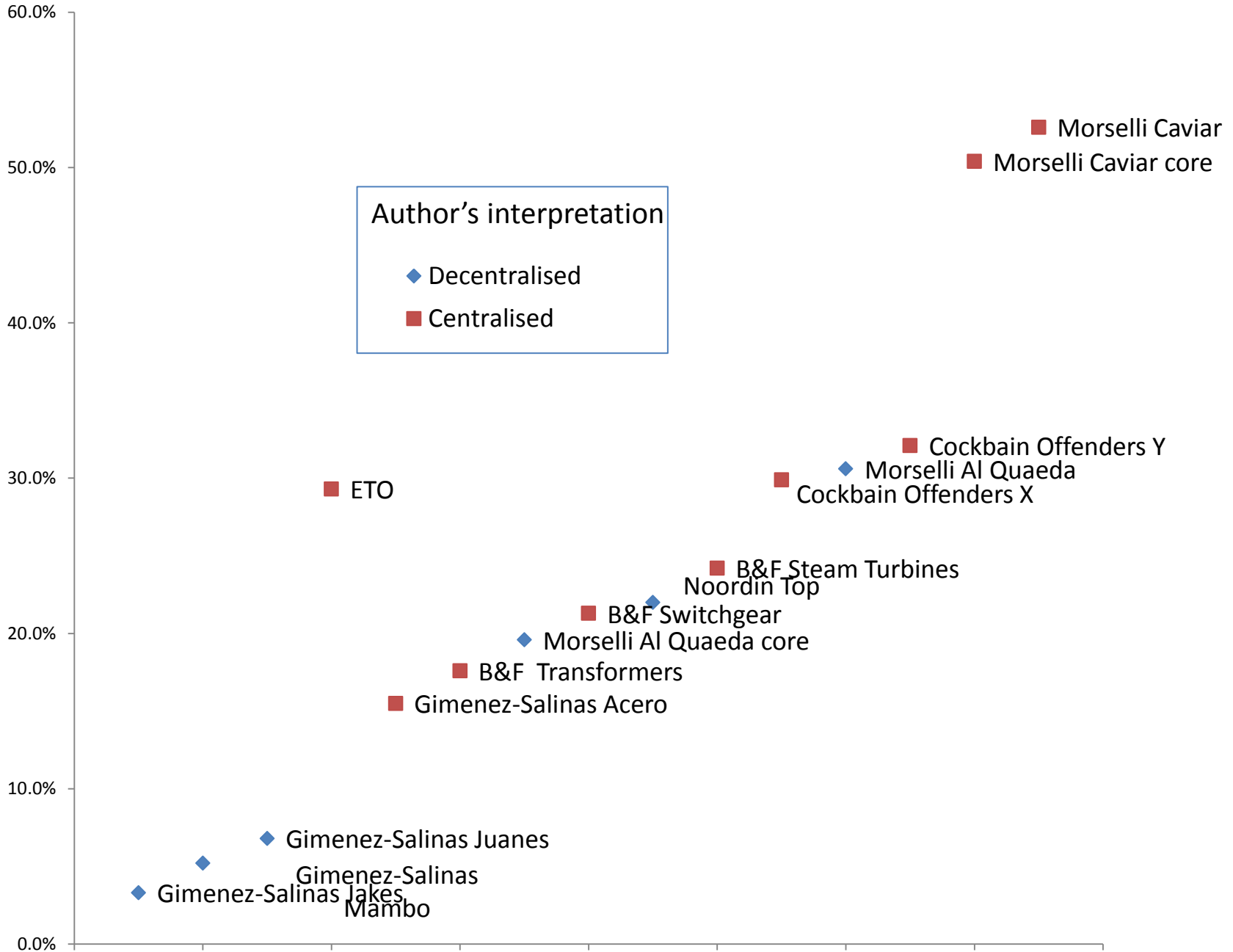# Collecting and Analyzing Covert Social Network Data

(Leverhulme Project, 2013-16)

- Increased interest in studying 'covert networks' (dark, underground, clandestine) using SNA, but many unresolved substantive and methodological questions:
  - Not least questions about the concept itself: 'secrecy' as the defining feature, but secrecy of what? From whom? When?
  - What makes a network 'covert', and how covertness is achieved, varies and demands sociological attention
  - Terrorist networks and criminal networks are prime examples, but many others (from social movements to swingers)
- Aim to create an archive of covert network datasets and then use it for theoretical exploration, empirical analysis, and methodological development

Why?

- Accepted that covertness affects network structure. But lack of empirical evidence for many claims made about the structure and dynamics of covert networks:

– Importance of pre-existing ties

– Networks by design

– A secrecy-efficiency trade off (Crossley, Edwards et al 2012)

- And some of the central structural properties are contended:

– (degree) Centralized or decentralized?

– Dense or sparse?

- The variability of claims also suggests that our ability to generalize about covert networks and interpret results from specific datasets is weak, and that there is a further need for comparison with 'overt' cases

Centralisation

Author's interpretation
- ◆ Decentralised
- ■ Centralised

- ■ Morselli Caviar
- ■ Morselli Caviar core
- ■ Cockbain Offenders Y
- ◆ Morselli Al Quaeda
- ■ Cockbain Offenders X
- ■ ETO
- ■ B&F Steam Turbines
- ◆ Noordin Top
- ■ B&F Switchgear
- ◆ Morselli Al Quaeda core
- ■ B&F Transformers
- ■ Gimenez-Salinas Acero
- ◆ Gimenez-Salinas Juanes
- ◆ Gimenez-Salinas Mambo
- ◆ Gimenez-Salinas Jakes

Density

Author's interpretation
- ◆ Sparse
- ■ Dense
- ▲ Denser over time

◆ Gimenez-Salinas Acero

▲ Bali 1
■ Bali 1 (Koschade)

■ B&F Steam Turbines

▲ ■ B&F Transformers
Australian Embassy

▲ Philippine Ambassador

▲ Bali 2

■ ▲ Christmas Eve bombings
B&F Switchgear

◆ Morselli Al Quaeda

Madrid 2004 ◆ Natarajan NYC Heroin
▲ ◆ Gimenez-Salinas Mambo
Dealers core

◆ Gimenez-Salinas Juanes

◆ Demiroz ETO
◆ Noordin Top
Gimenez-Salinas Jakes

◆ Demiroz ETO periphery

◆ Morselli Caviar

◆ Natarajan NYC Heroin
Dealers

Methodological development and challenges

- A need to address key methodological questions and challenges posed by covert network data:
  - If/how different from 'overt' networks?
  - How can data be collected and quality issues be addressed?
  - Do we need new SNA methods/measures to analyse covert networks?
  - Can covert networks be identified through certain properties?
  - How can we deal with acute problems of boundary specification, partial and missing data?
  - What statistical models could be developed to help academics and practitioners deal with these issues?

  - Hope to provide some answers, but also a useful reflection on, and assessment of, the methodological challenges of working with covert network data

What we have done so far…

- Started to unpack and operationalize 'covertness' as a set of variables that can be used in generating hypotheses about structural properties (absorption, aims, actions, consequences, segregation)

- Identified over 200 hypotheses in existing literature about covert networks

- Collated and cleaned over 50 covert network datasets (some our own, most from other studies freely available / provided by authors)

- SNA on datasets is just beginning…

Thanks!
For more information and resources visit our project website:

http://www.socialsciences.manchester.ac.uk/research/research-centres-and-networks/mitchell-centre/our-research/covert-networks/

The following will shortly be available on the website:

- Working paper: Oliver. K (2014) 'Covert network data: a typology of effects, processes, practices and structures'

- List of the covert network datasets currently in the archive