

# Network Discovery Vs Understanding

Q: "Is it possible to evaluate a tool to visualise a complex system, like an organisational network, without validated models for how it behaves?"

NATO Network of Experts

5<sup>th</sup> November 2008

Andy Swarbrick

Head ISR Analytics (Defence)



# Question Time



Q:“ Is it possible to evaluate a tool to visualise a complex system, like an organisational network, without validated models for how it behaves?”

# Advanced Analytics Experience And Next Steps

Discovering

Understanding Adversary Networks

Engaging

Transforming

THAT POSE A  
SIGNIFICANT  
THREAT

# Team Round 1: Observation



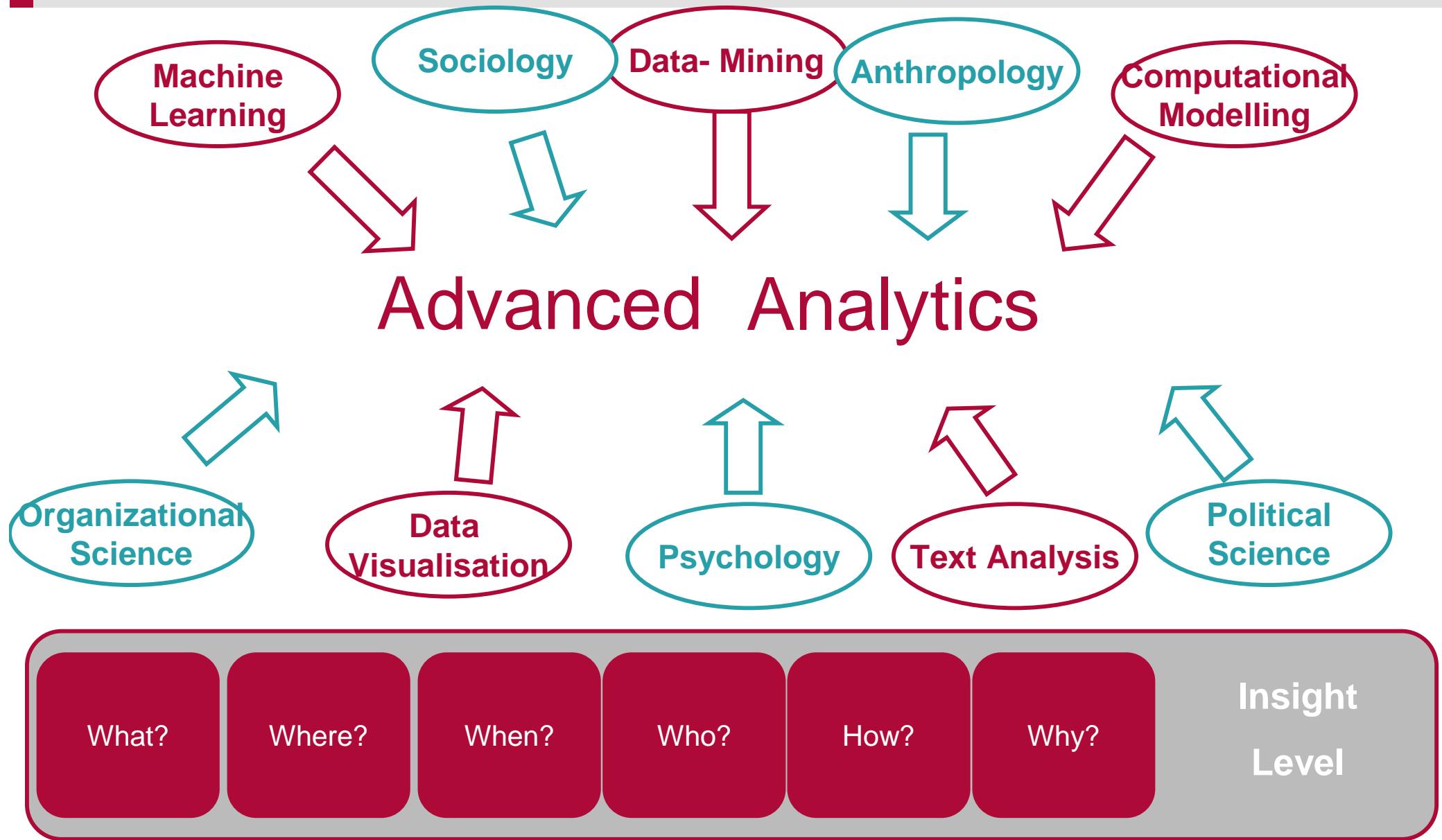
NATONXD002

# What a computer can see?

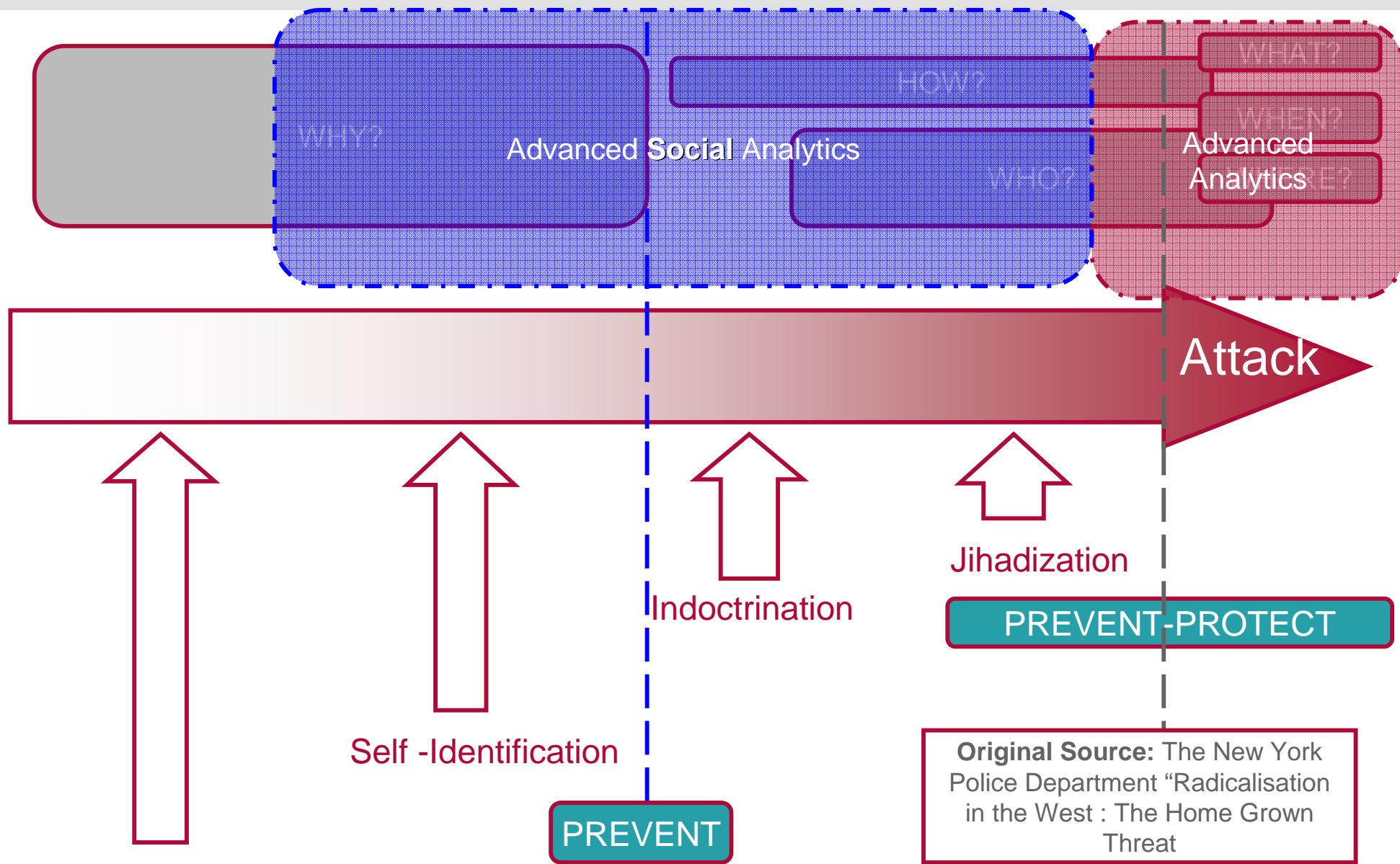


- 1 singular nominal foreground
- 1 nominal group (number unknown <5 =small group) background
- Good light
- =Scene not busy
- 1 singular nominal foreground
- 1 nominal group (number 3 =small group) mid scene
- Good light
- =Scene not busy

# Applying Detica Analytics: Next Level



# Example: Prevent as Radicalisation Process (Social)



**Original Source:** The New York Police Department "Radicalisation in the West : The Home Grown Threat"



Pre-radicalisation

NATONXD002

# Social Network Analysis (in Context)

Discovery

Understanding

## Link Analysis

The actions of individuals can be better explained by understanding the links that exist between them.

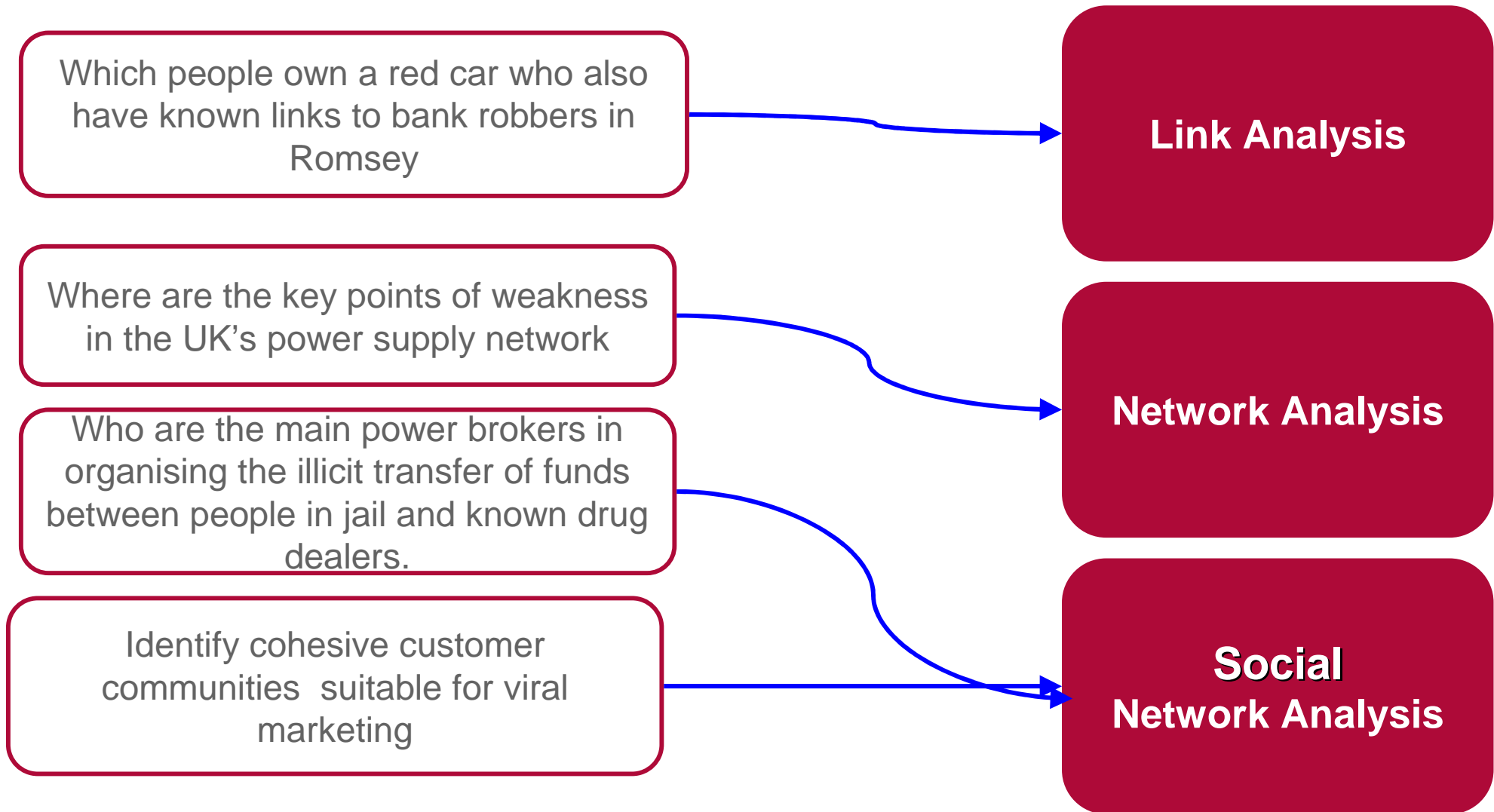
## Network Analysis

+ Adds mathematical concepts of graph centrality, cohesion and group identification to identify key features

## Social Network Analysis

+ Adds social & cultural theories to provide explain and predict changes to network structure and actions

# Team Round 2: Association

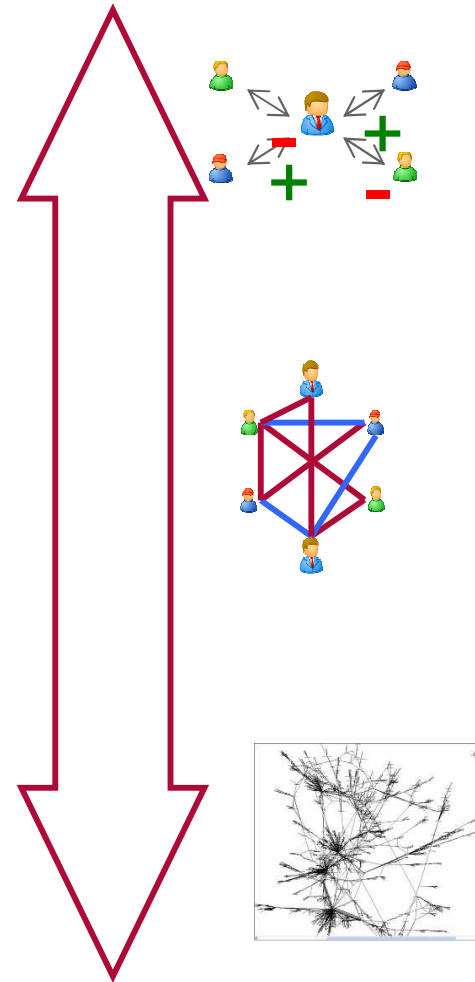


# SNA Measures

## Key Words

- Key players, cut points , brokers, connectors
- Cliques, Communities,
- Cohesion, Density, reciprocity.

Individual



Whole  
Network/Population

## Questions

- Who are the key brokers in the flow of information in Detica?
- Does Detica have communities of experts that cross organisational divides?
- Do NS project teams have more internal cohesion than TMTE project teams?

# Summary

- **Difference between Network Discovery and Network Understanding**
- **Engaging with groups you don't understand may result in less ineffective mitigation , at worst unintended consequences greater than threat being mitigated.**
- **Network measurement **does not** equal network understanding**

# Question Time: Again



Q: "Is it possible to evaluate a tool to visualise a complex system, like an organisational network, without validated models for how it behaves?"

# Contact details

**Andy Swarbrick**

@ [andy.swarbrick@detica.com](mailto:andy.swarbrick@detica.com)

**Tel: +44(0)207 812 4448**

## Head Office

Surrey Research Park

Guildford

Surrey

GU2 7YP

Tel: +44 (0)1483 816000

Fax: +44 (0)1483 816144

## London Office

2 Arundel Street

Arundel Great Court

London

WC2R 3AZ

Tel: +44 (0)20 78124000

Fax: +44 (0)20 7812 3441

## Cheltenham Office

1220 Lansdowne Court

Gloucester Business Park

Gloucester

GL3 4AB

UK

Tel: +44 (0)1452 632400

Fax: +44 (0)1452 632424

