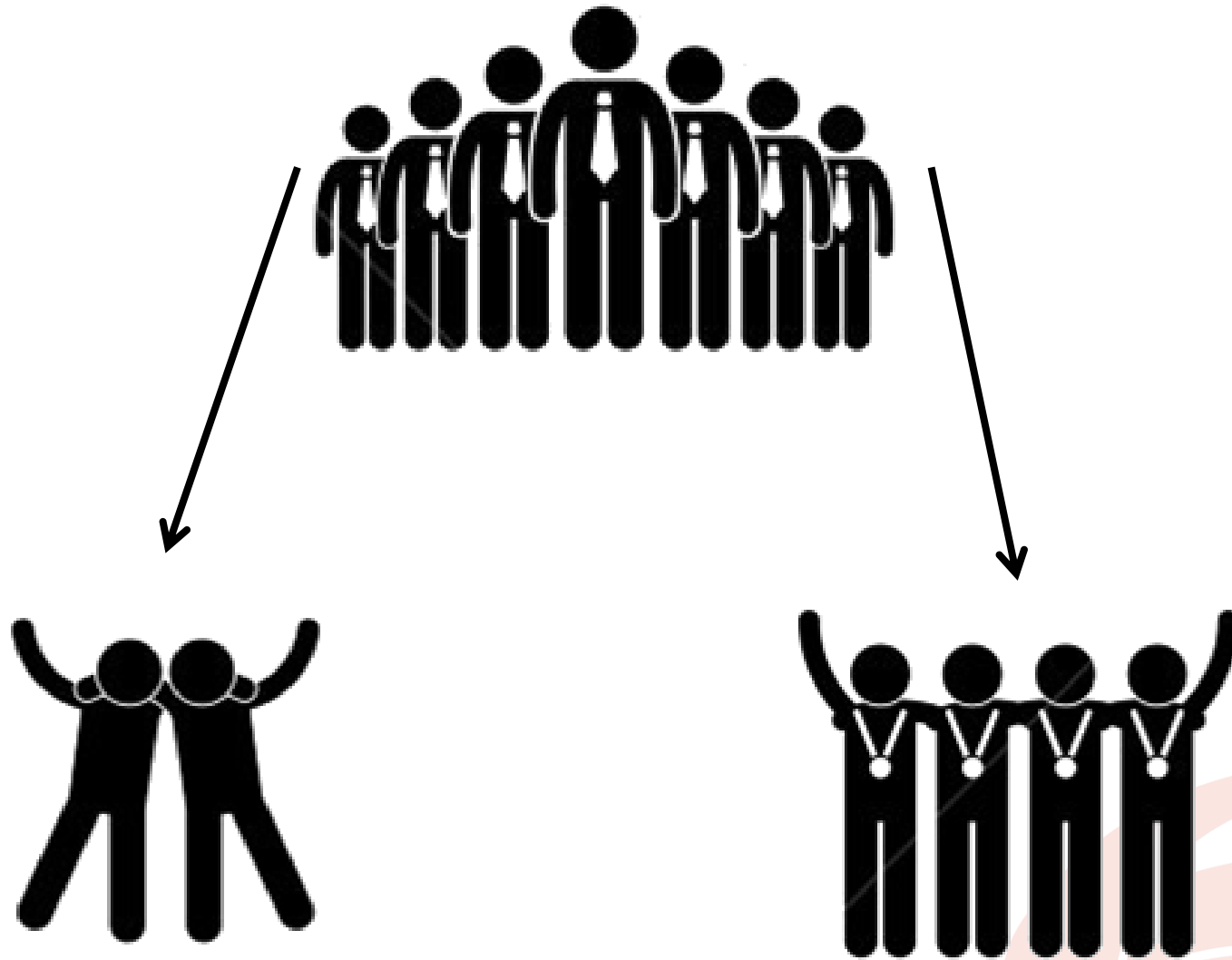


The Use of Social Network Analysis (SNA) to Drive Interventions in Team Sports

Eesha J Shah
Associate Sports Psychologist



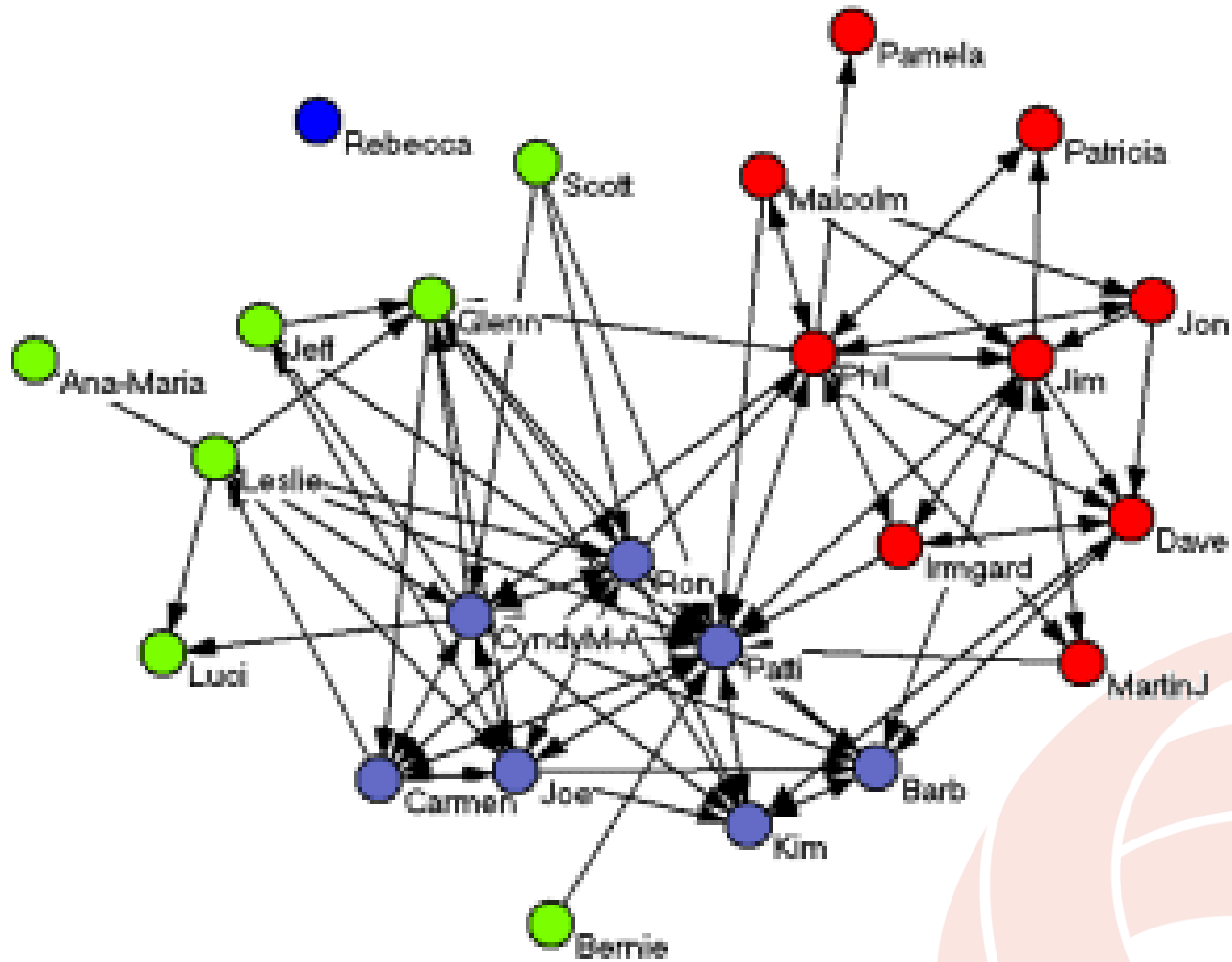


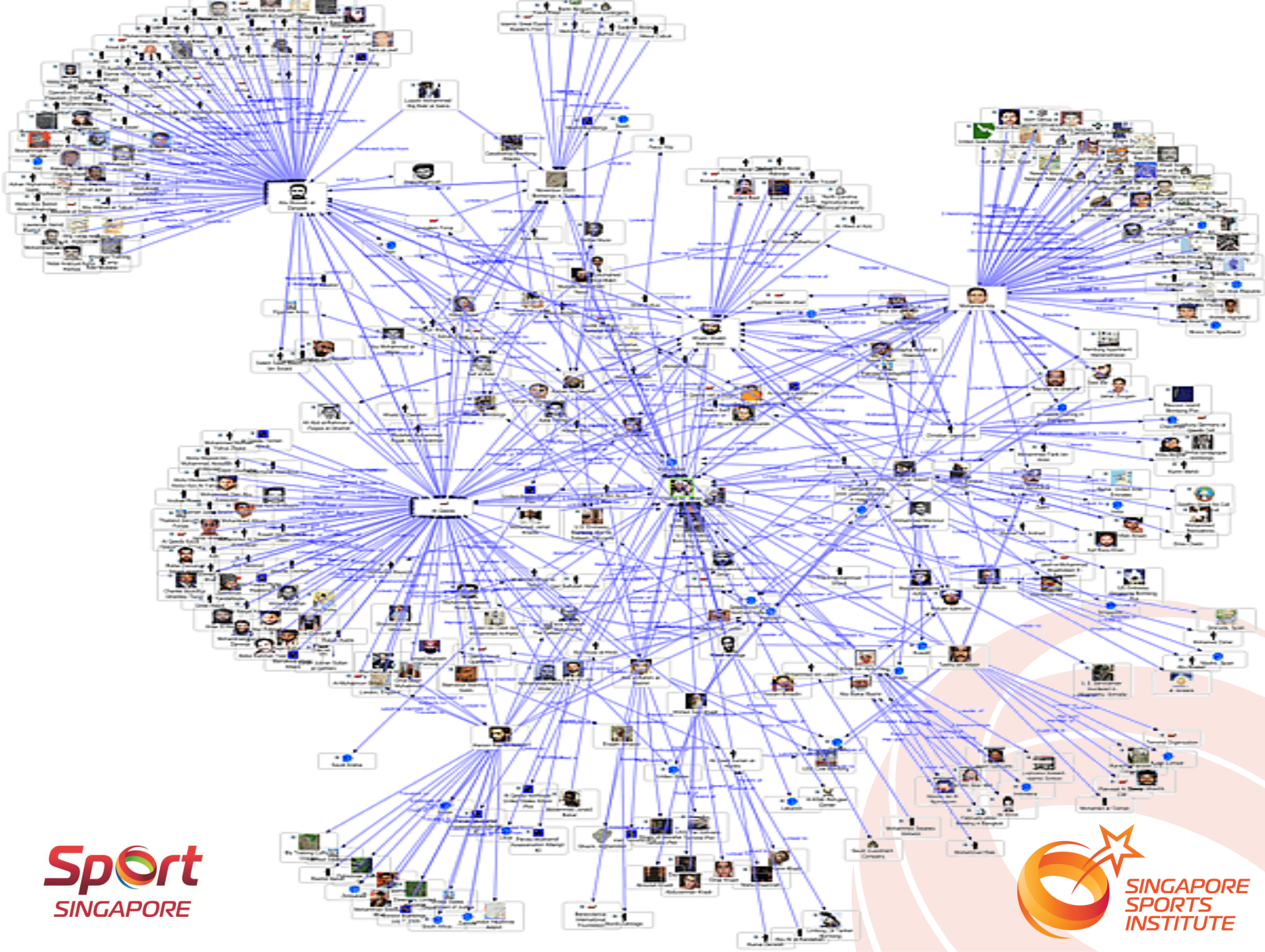
What is Social Network Analysis (SNA)?

It is a set of methodological tools to:

- i. Create maps of human relationships that can be quantified and measured (Freeman, 2004)
- ii. Reveal group structure and underlying patterns of interaction (Paxton & Moody, 2003)

A simple illustration..





Where has SNA been used thus far?



Terrorist networks, drug cartels,
gang violence



Spread of HIV, contagions,
mental health support



Leadership, post-merger
integration, information sharing



Alliance formation, social
movements, voting behaviour

What is the role of SNA in the psychology of Sporting Teams?



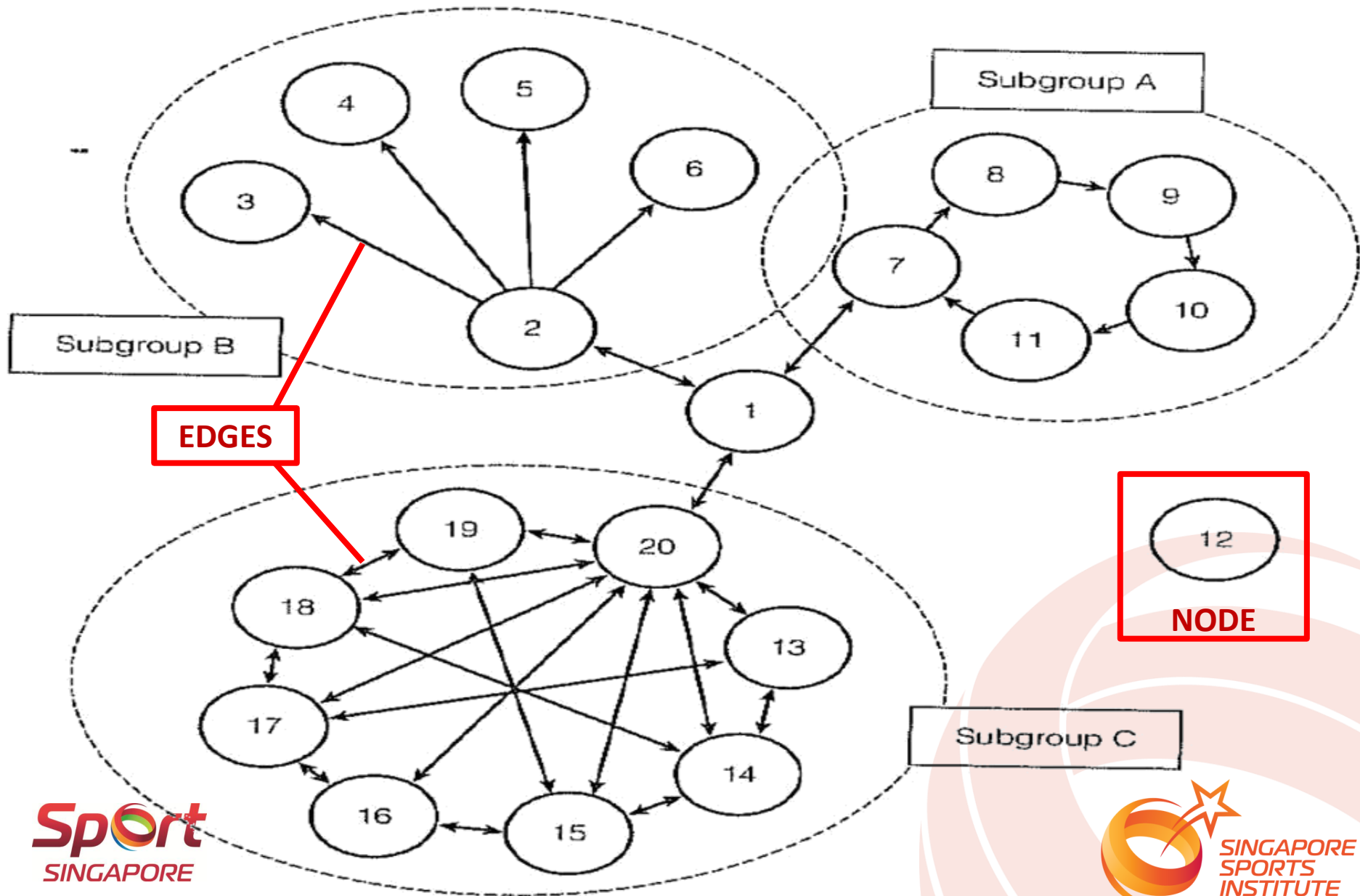
“A whole is greater than the sum of its parts”



- ❑ The dependencies and systemic elements of team behaviour cannot be well understood by aggregated analyses of the team's individual members. (Carron, Colman, Wheeler & Stevens, 2002)

Nuts & Bolts of SNA

Social Network Map - Components



Social Network Map – Quantitative Concepts

Density

$$\left\{ \frac{\text{Actual Connections}}{\text{Maximum Possible Connections } (n)(n-1)} \right\}$$

In-degree Centrality

{ the number of incoming edges }

Out-degree Centrality

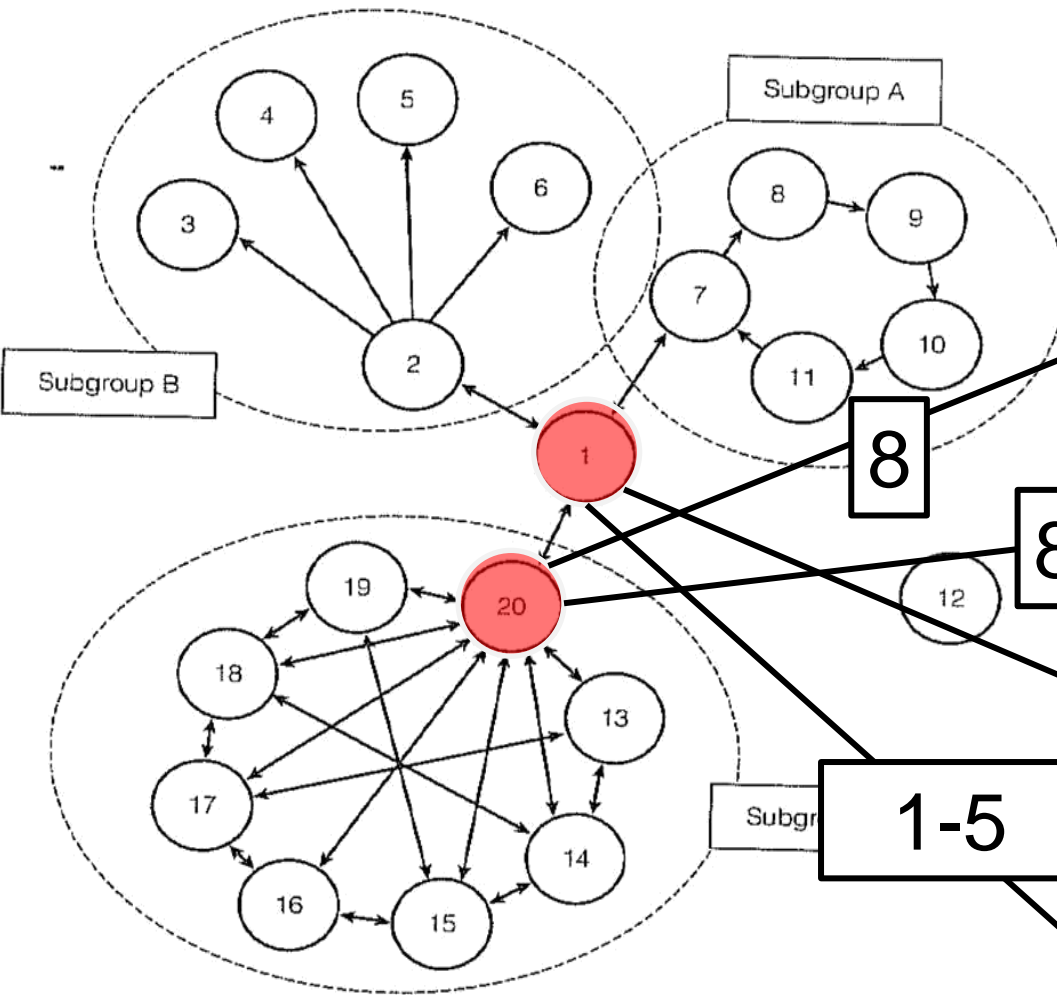
{ the number of outgoing edges }

Betweenness

{ how well-placed a node is between others }

Closeness

{ distance to all members in group }



Social Network Map – Qualitative Concepts

Bridge

{ critical to cohesiveness
of network }

Structural Hole

{ breakdown in cohesiveness }

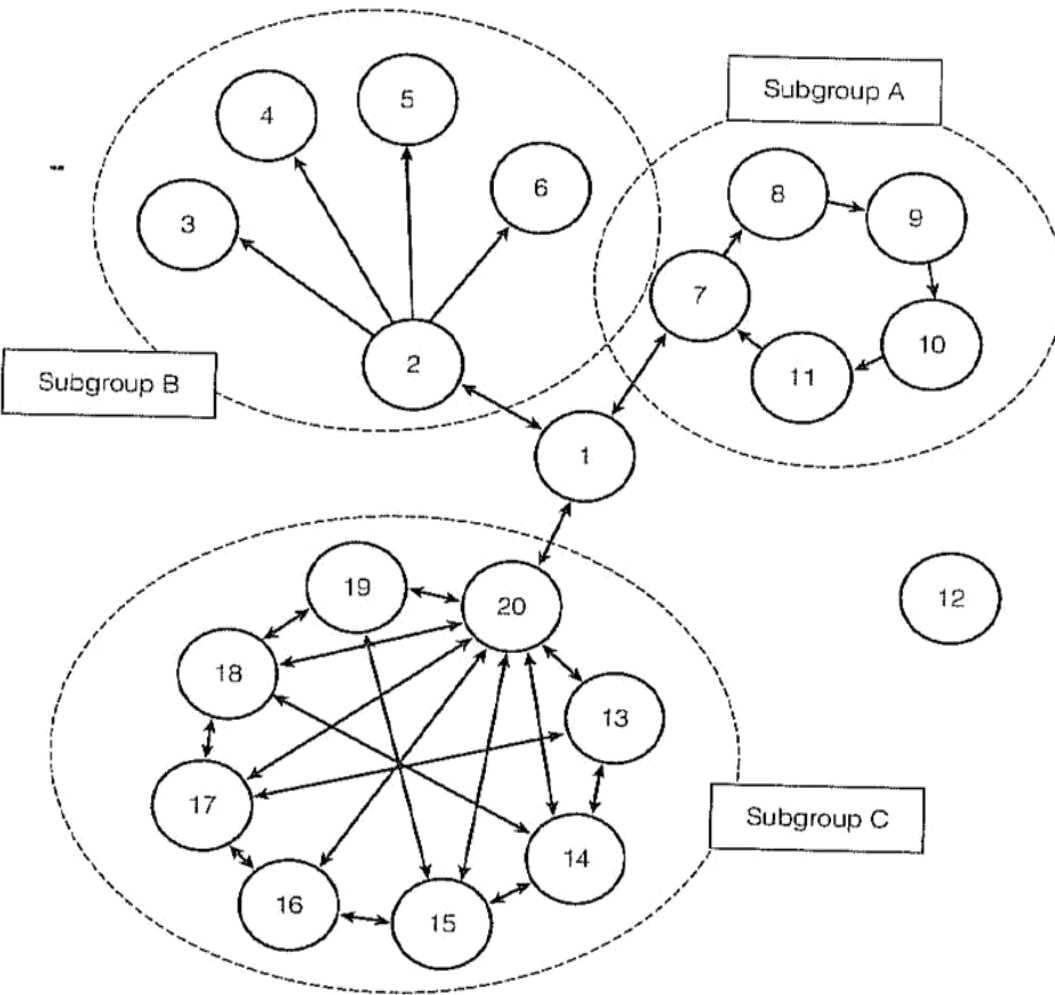
Reciprocity

{ mutuality in relations }

Transitivity

{ tendency to form
triadic relations }

Clustering



Case Studies



SINGAPORE
Hockey



SINGAPORE
WATERPOLO

Use of SNA to Drive Interventions

- i. Group-level interventions
- ii. Between-players interventions
- iii. Individual-level interventions