

# Teams in Extreme Environments

## What facilitates effective performance in high-stakes contexts

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### Introduction

Extreme environments are characterised by high-stakes, rapidly changing, and dynamic conditions, wherein ineffective performance has severe, potentially life or death consequences. Despite a large body of literature examining organisational teams, we do not yet know if facets of teamwork (e.g., leadership) will operate in a similar manner in these situations. Specifically we are examining two types of extreme teams: emergency response and expedition teams. This provides a unique opportunity to compare the differences between long-lasting (expedition) and fast-forming (emergency response) teams in extreme environments.



### Rationale and aims of the research

#### Emergency response

Research, along with Government reports (e.g., the Kerslake report) have identified how deficiencies in communication and coordination have impeded effective response to major incidents. Our research involves collecting data at training events with the emergency services, to further understand and improve response to major incidents.

1. What does communication and coordination during a major incident look like?
2. What facilitates effective communication and coordination?

#### Expedition teams

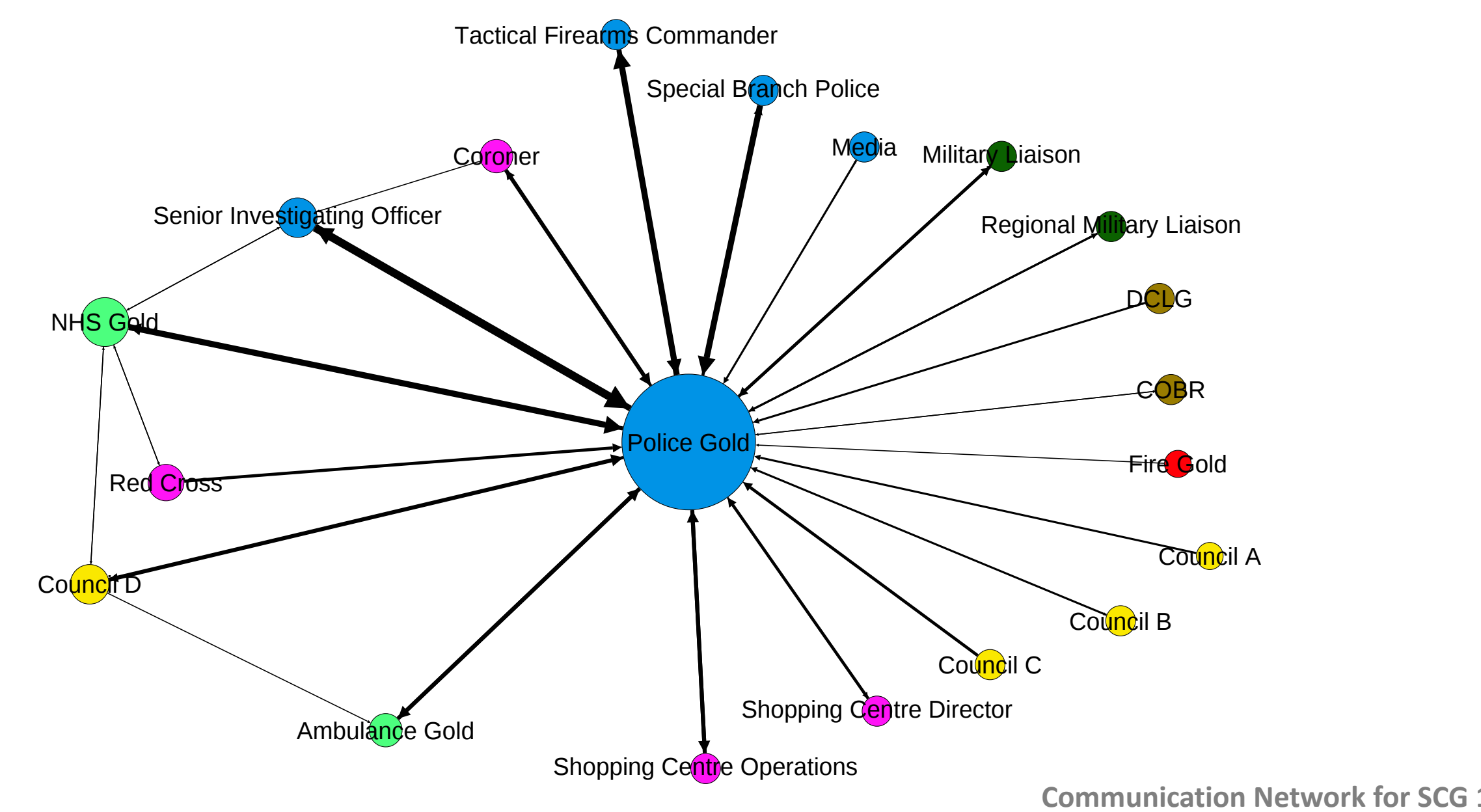
Expedition teams operate in harsh environments, in which they are socially isolated and subject to extreme physical and psychological demands. Understanding how teams work effectively in this environment offers an analogous context to further understand the experiences of special forces and military personnel. In our research we focus on how team composition and cohesion effects team performance and well-being whilst on expedition.

1. How does team composition affect cohesion during expedition?
2. How does individual daily experiences affect perceptions of team cohesion?

### Study 1: Exploring the strategic response to a terrorist incident

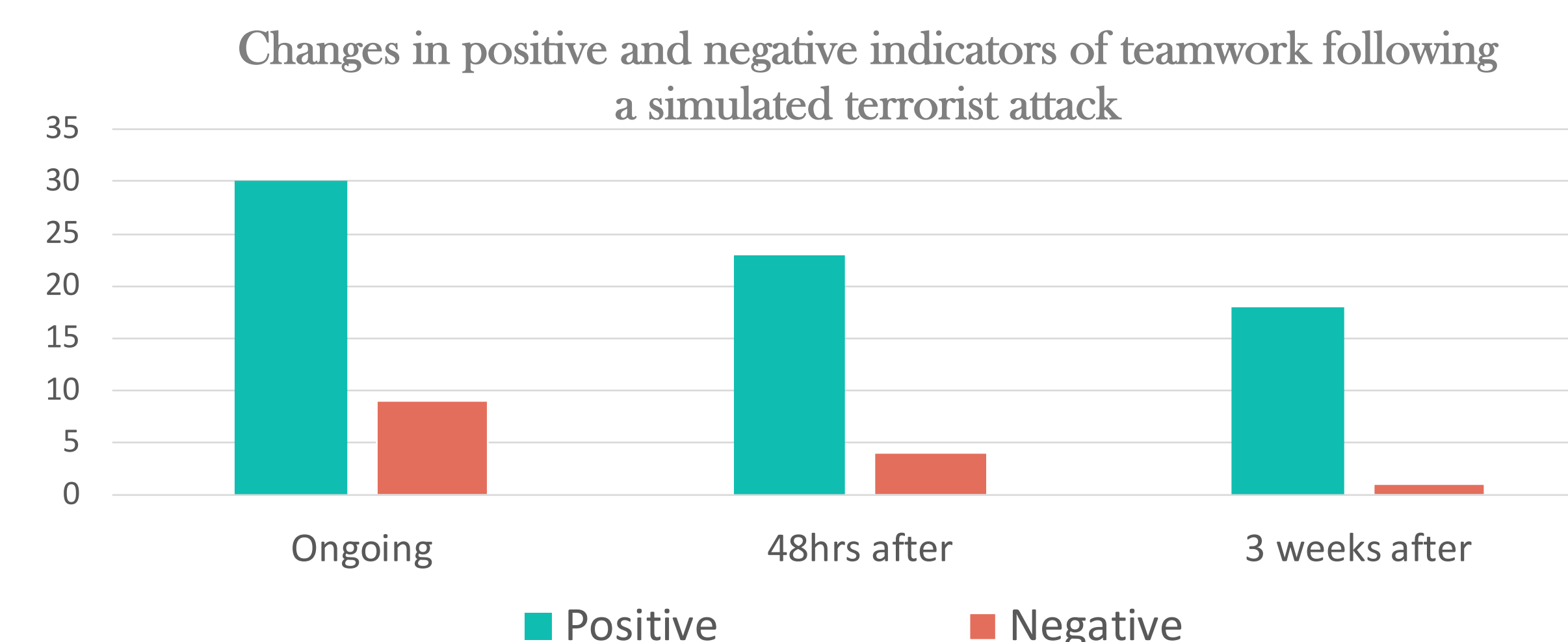
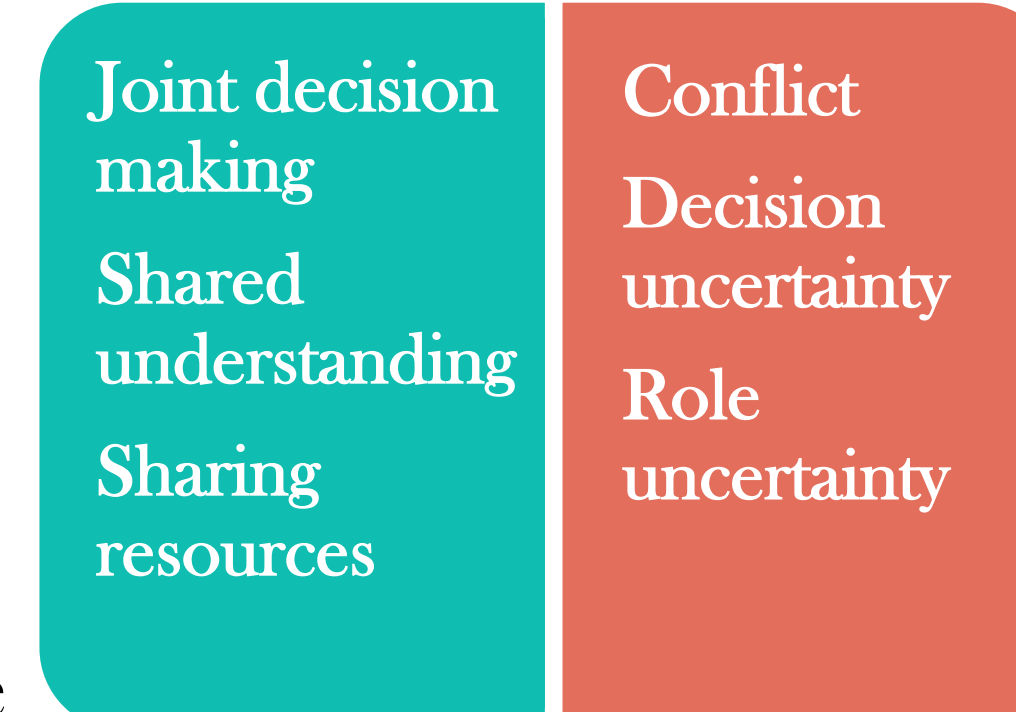
#### Design

We video-recorded the Strategic Command Groups (SCG's) response to a simulated terrorist incident. Three SCG's took place at different intervals following the incident: (i) when the incident was ongoing (SCG 1) (ii) 48 hours following (SCG 2), (iii) 3 weeks after the resolution of the incident (SCG 3).



#### Findings

- **Communication** was more distributed as the time from the incident increased. With the immediate threat of the incident over, team members were more likely to get involved in the decision-making.
- **Coordination.** We identified 6 indicators of team processing. Negative and positive indicators decreased as time from incident increased. We anticipate that with lower levels of uncertainty and complexity, in the time following the incident, negative indicators of team processing would be less likely to occur.



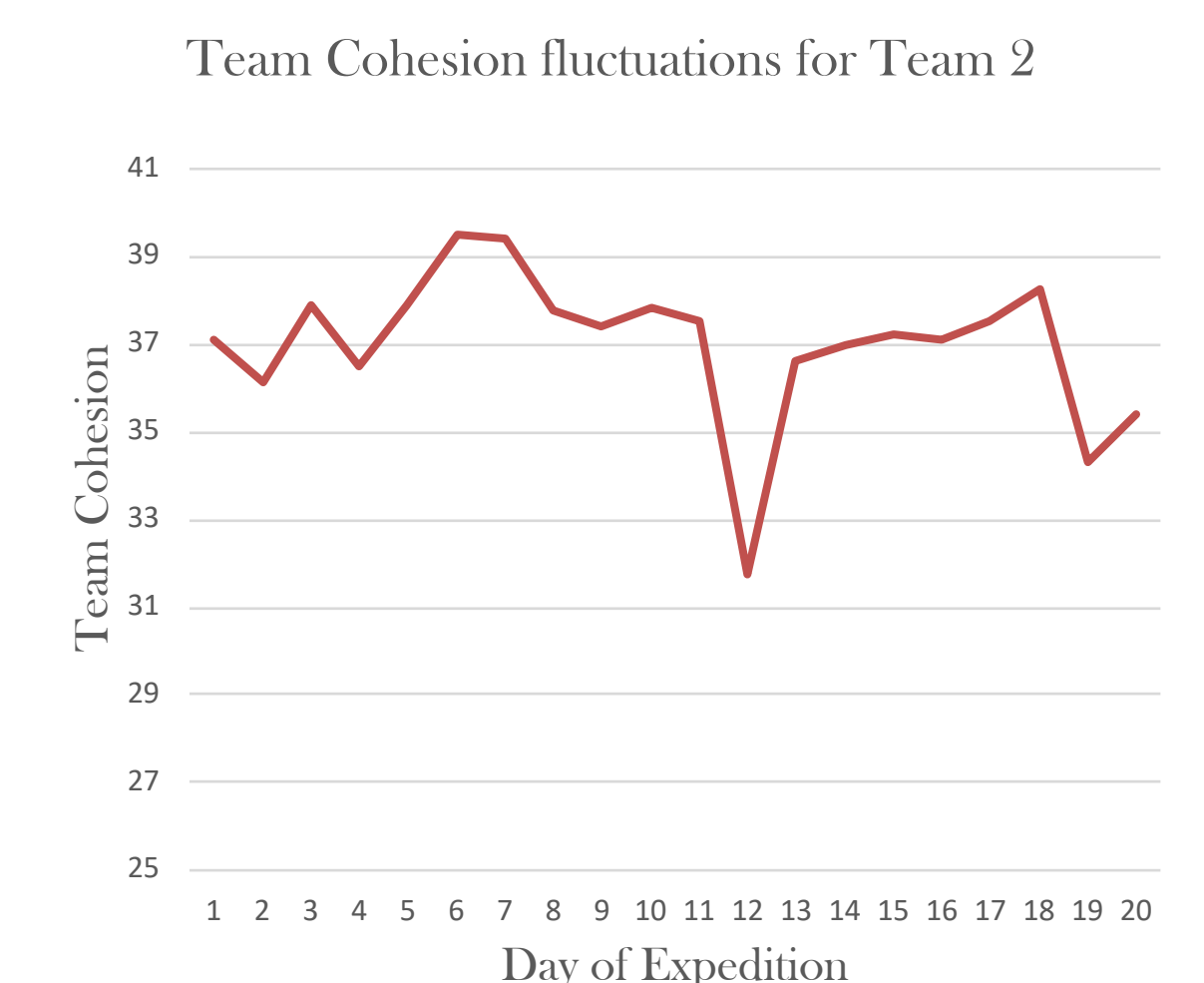
### Study 2: Cohesion over time in expedition teams

#### Design

Five expedition teams of approx. 12 members completed pre and post expedition questionnaires. They also completed a tick box daily diary for the duration of their 20 day expeditions. The daily diary included a performance measure, a cohesion measure and several items about their daily experiences.

#### Findings

- High scores of extraversion within the team had a negative effect on team cohesion.
- Cohesion significantly correlated with perceived performance.
- Fluctuations in cohesion (see figure) were predicted by individual feelings about the expedition (e.g., equipment/weather) and feelings about the team (e.g., satisfaction with leader)



#### Implications

- **Emergency response.** Communication and coordination during a simulated terrorist incident changed as time from incident increased. Future research must seek to identify under what conditions positive/negative instances of team processing are more likely to occur.
- **Expedition teams.** Maintaining team cohesion is significantly associated with team performance. Understanding what might influence team cohesion during expedition could have important consequences for teams working in extreme environments.