

CENTRE FOR RESEARCH AND VIDENCE ON SECURITY THREATS

# Abstract

Extreme environments create unique physical and emotional challenges. This PhD research will seek to further understand what allows teams to make effective decisions when working in extreme environments. Specifically it will explore two types of extreme teams: (i) emergency responses teams; and (ii) expedition teams. This research will increase understanding of effective teamwork in extreme contexts and help to improve planning for teams that work in harsh conditions or who deal with major incidents.

## Introduction

Decision-making is defined as the process of choosing an action, to achieve a goal in an uncertain environment. Naturalistic Decision Making (NDM) research explores how experts use knowledge to make decisions in complex, real-world settings. This PhD research will adopt an NDM framework, to explore the decision-making of teams operating in extreme environments; complex, dynamic, high-stake settings wherein success is reliant upon effective teamwork. Specifically, it will involve research with two types of extreme teams: (i) the emergency services responding to major incidents; and (ii) expedition teams who are trekking across harsh landscapes (e.g., arctic, desert).

## Reviewing the literature





Research aims:

(i) Contribute to the psychological literature of effective teamwork in extreme environments.

(ii) Develop a scale to measure perceived effectiveness of Team Processes (communication, coordination and cooperation).

(iii) To explore teamwork in emergency response teams, allowing us to provide recommendations to help improve training and planning for future major incidents.

(iv) To explore how expedition teams are able to cope in harsh conditions for prolonged periods of times and provide recommendations for the future.

# Team Decision-Making in Extreme Environments Olivia Brown





## **MEDIATORS**



## Effective team performance during Emergency Response

During emergencies, the Police, Fire and Rescue and Ambulance services must come together quickly to produce a coordinated response. Our research seeks to explore and improve teamwork during emergency response.

#### Study 1: A pilot

We collected data from a live training event emulating a 'Marauding Terrorist Firearms Attack' (MTFA) at a shopping centre in the North of England.

- We aimed to pilot the Team Processing scale. We found that team members perceived communication to be worse than coordination and cooperation. (See fig.1)
- We also found that cohesion correlated with perceived effectiveness.

### Study 2:

Data will be collected from a Strategic Command Group, responding to a simulated MTFA. We intend to collect video-recorded data to allow us to perform a social network analysis. This will allow us to explore communication networks at the strategic level.

# Exploring how expedition teams function

When on expedition, teams must work effectively in environments characterised by danger, difficult conditions and interpersonal challenges. The research will collect data from expedition teams for a period of weeks, focusing on how team cohesion emerges over time, particularly in response to situational and interpersonal challenges, identified by the use of daily diaries (See fig. 2). It is hoped that the findings will be applicable to other contexts, such as Special Forces teams and those involved in long distance space travel.

#### Study 1:

- Six student teams travelling to either Greenland, Kyrgyzstan or Mongolia for three weeks.
- Team members will complete a questionnaire, pre and post expedition.
- During the expedition they will complete a daily diary (See fig.2)

#### Study 2:

Will seek to build on study 1 with adult participants

Daily event	Daily event
Problems with gear and equipment e.g., clothing, tools, communication, navigation equipment etc.	Feeling of camaraderie/closeness with team mates
Fear of being injured	Worried about family/friends
Concern about the well-being of my team mates	Concern about how effectively my team mates and I are working together
Enjoyment of the environment	Personal hygiene (wanting to be cleaner)
Loneliness, homesickness	Lack of privacy, personal time
Satisfaction in making good progress today	Tension or argument with my team mate(s)





Figure.2