



University of
Zurich^{UZH}

Department of Psychology | Applied Team Research




Swiss National
Science Foundation

Teamwork at world's end: What makes an effective polar team?

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 @TeamSchmutz



Think back to the ***WORST*** team you
ever worked with

Think back to the ***BEST*** team you
ever worked with

ISOLATED

CONFINED

EXTREME





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NEWS

French expeditioners stuck in Antarctica after icebreaker stranded in Hobart



Dozens of French crew members stuck in Antarctica are growing frustrated as they wait to hear from families and leave the frozen continent.

TECHNOLOGY

The Time I Got Stranded in Antarctica

We expected to wait 15 minutes for weather to improve enough that we could make our escape. Instead, we waited for days.

DOUGLAS FOX JANUARY 7, 2014





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TEAM ADAPTATION

Mixed-Methods Approach



Antarctica summer campaign 2017-18, 2019-20



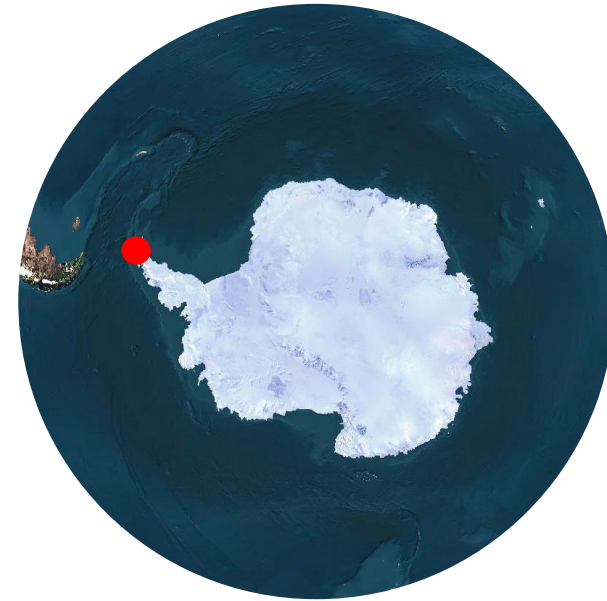
62 Interviews – 6 stations – scientists, management, staff (glaciologists, guides)



7 Field trips (video recordings, notes)



56 Surveys





Challenges

Environment

42 (43.8)

Climbing to main study site

3 (3.5%)

Deterioration of living conditions

5 (5.8%)

Dangerous shipment

1 (1.2%)

Weather change

33 (33.7%)

Task

45 (46.8)

Forgot equipment

1 (1.2%)

Loss or malfunction of technical equipment

2 (2.3%)

Sample or data loss

9 (10.5%)

Task overlap

1 (1.2%)

Technology failure

22 (25.6%)

Team

9 (9.4)

Conflict with other teams or other people

4 (4.7%)

Conflict within the team

2 (2.3%)

Work overload

1 (1.2%)

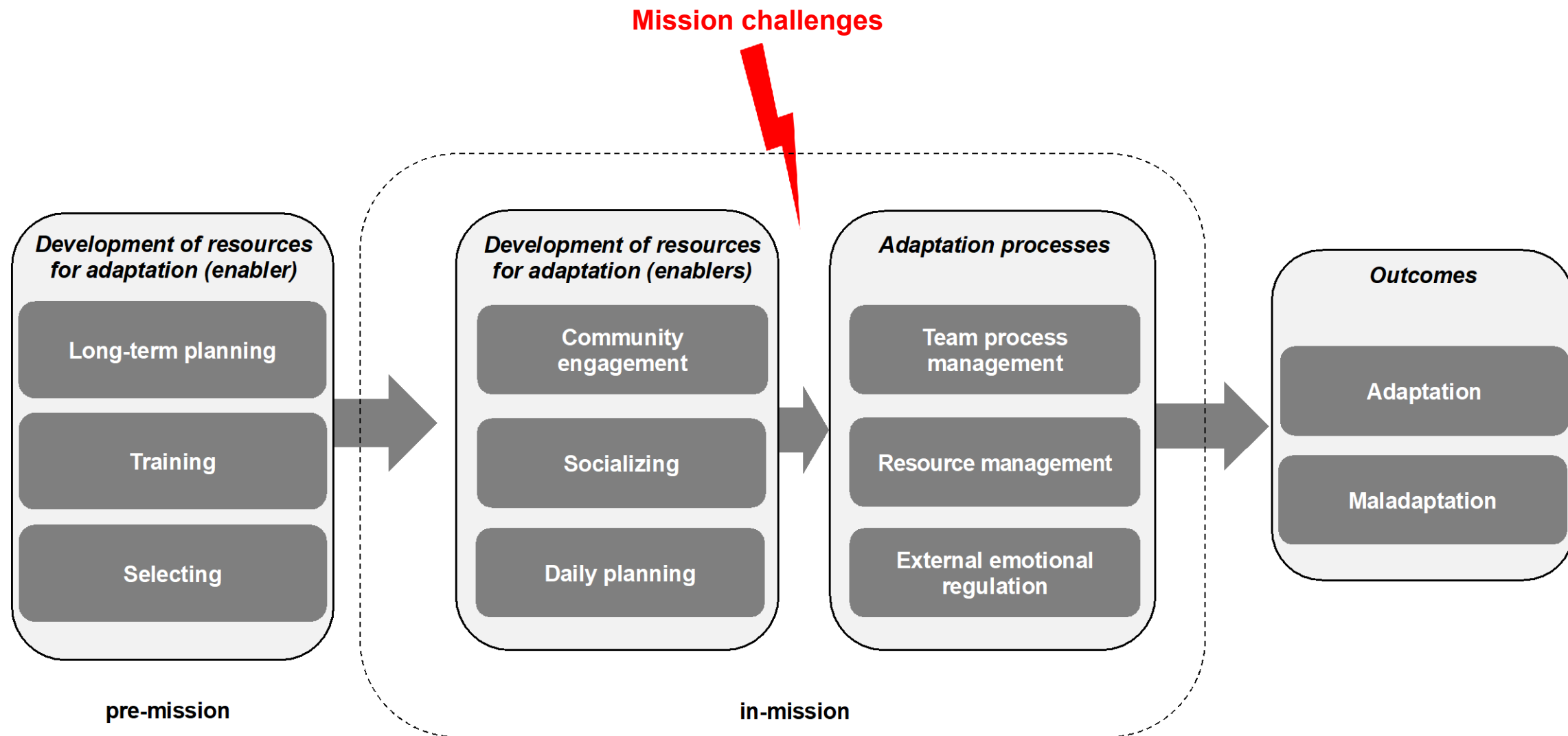
Managing new groups

1 (1.2)

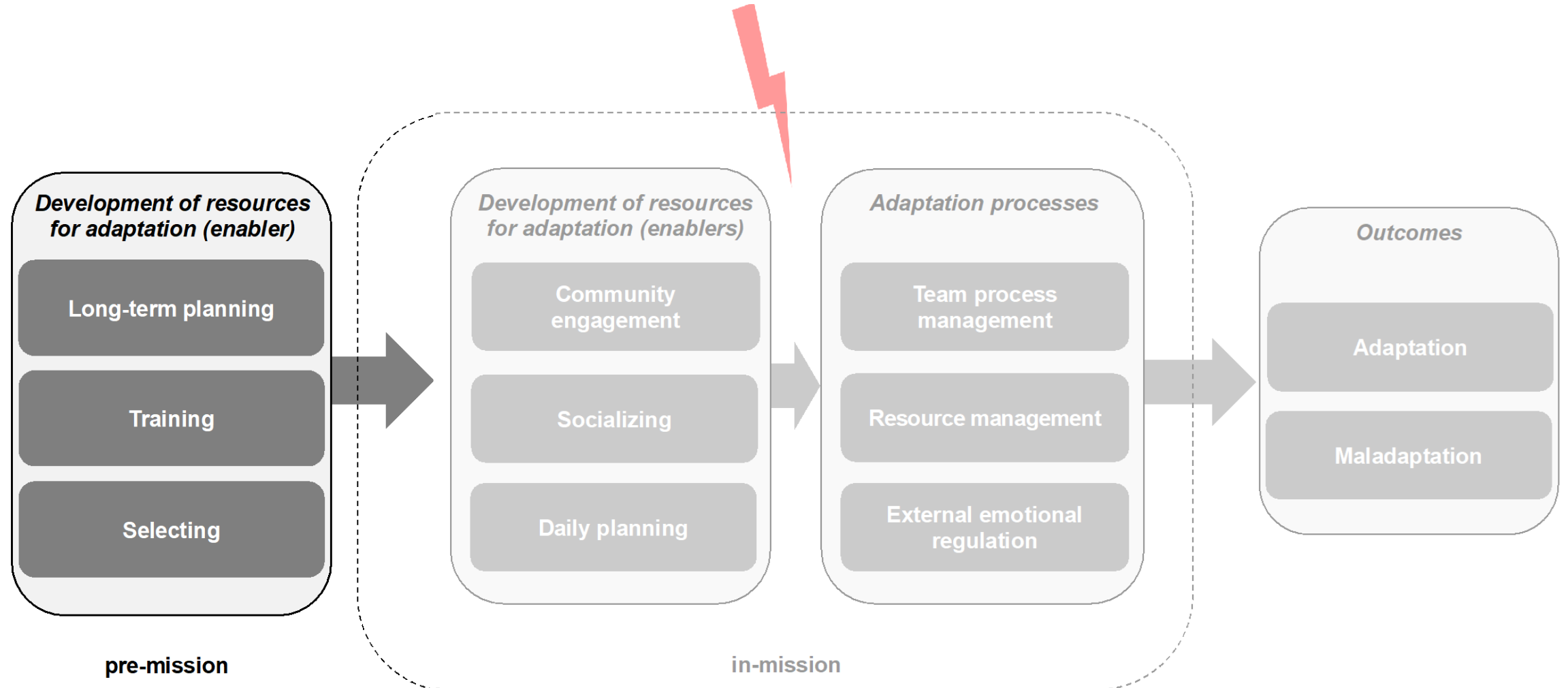
Change in working conditions

1 (1.2)

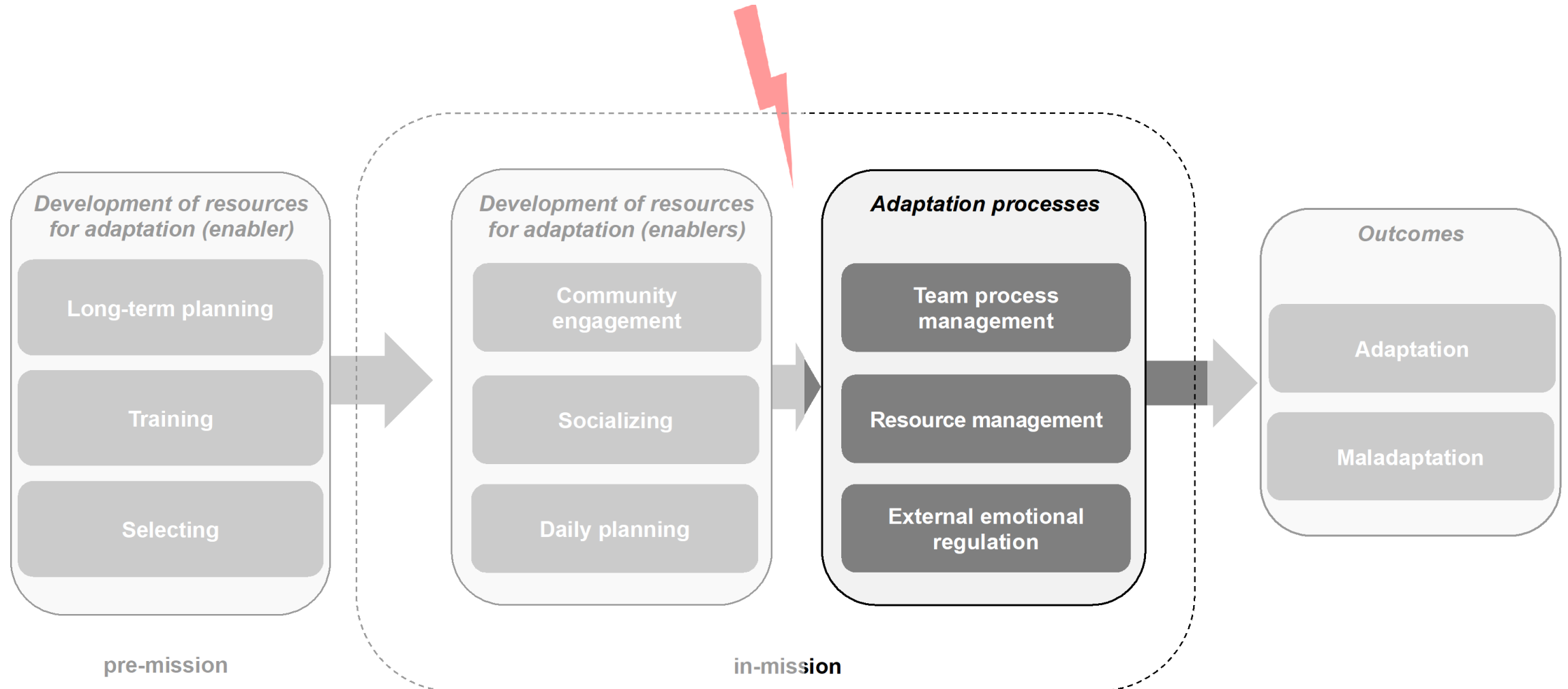
N = 56



Mission challenges



Mission challenges





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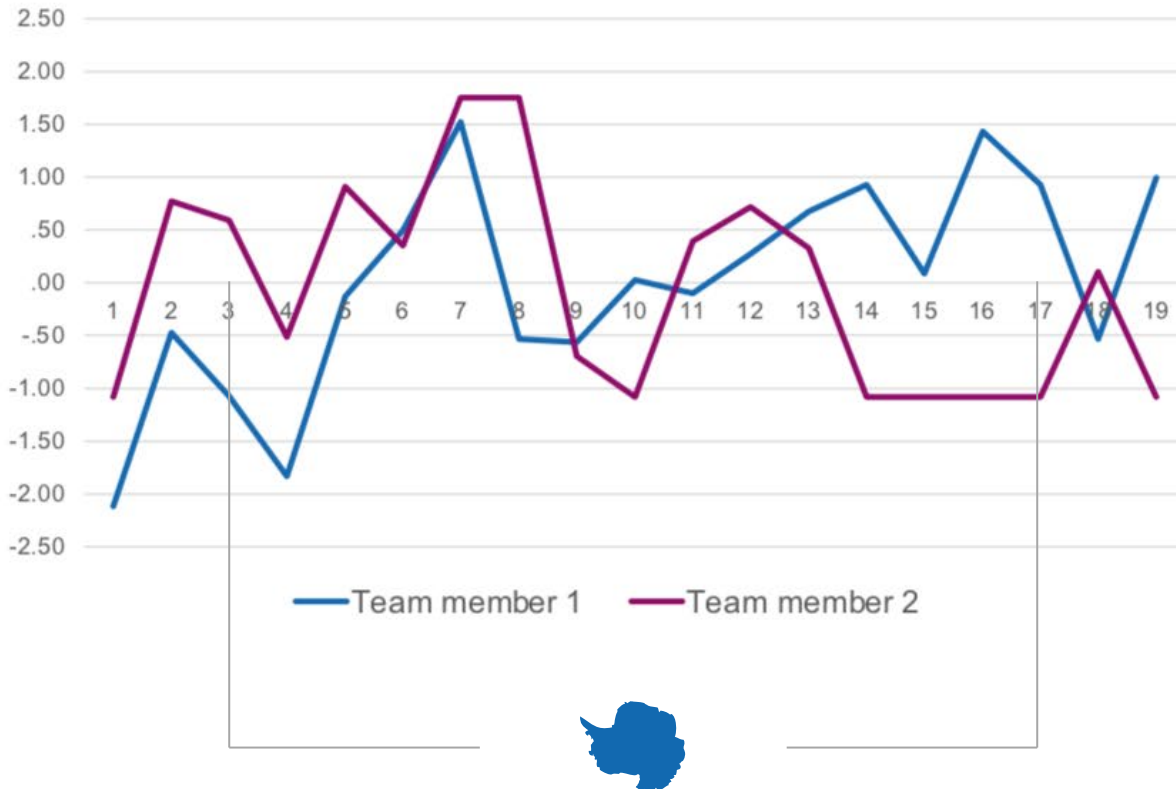
Daily Record 

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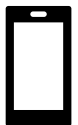
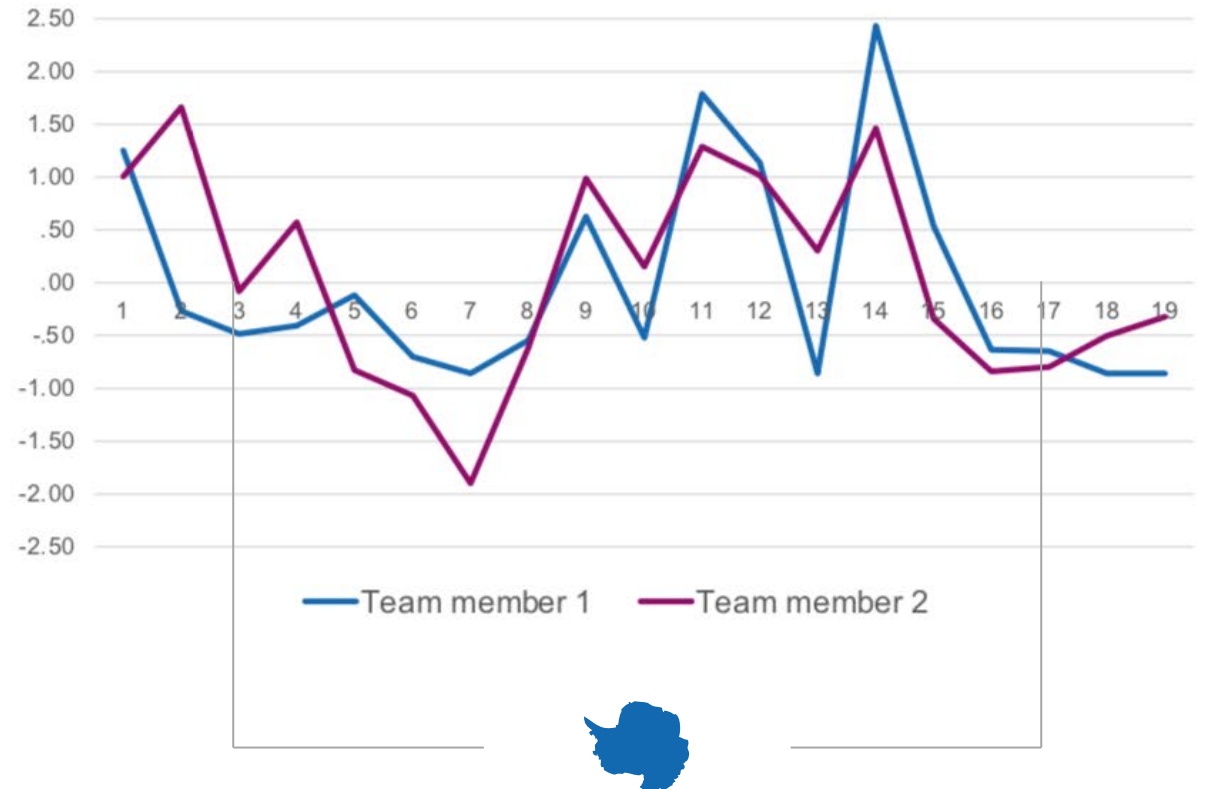
**Scientist in remote
Antarctic outpost stabs
colleague who told him
endings of books he was
reading**

Emotional contagion

Positive Affect



Negative Affect



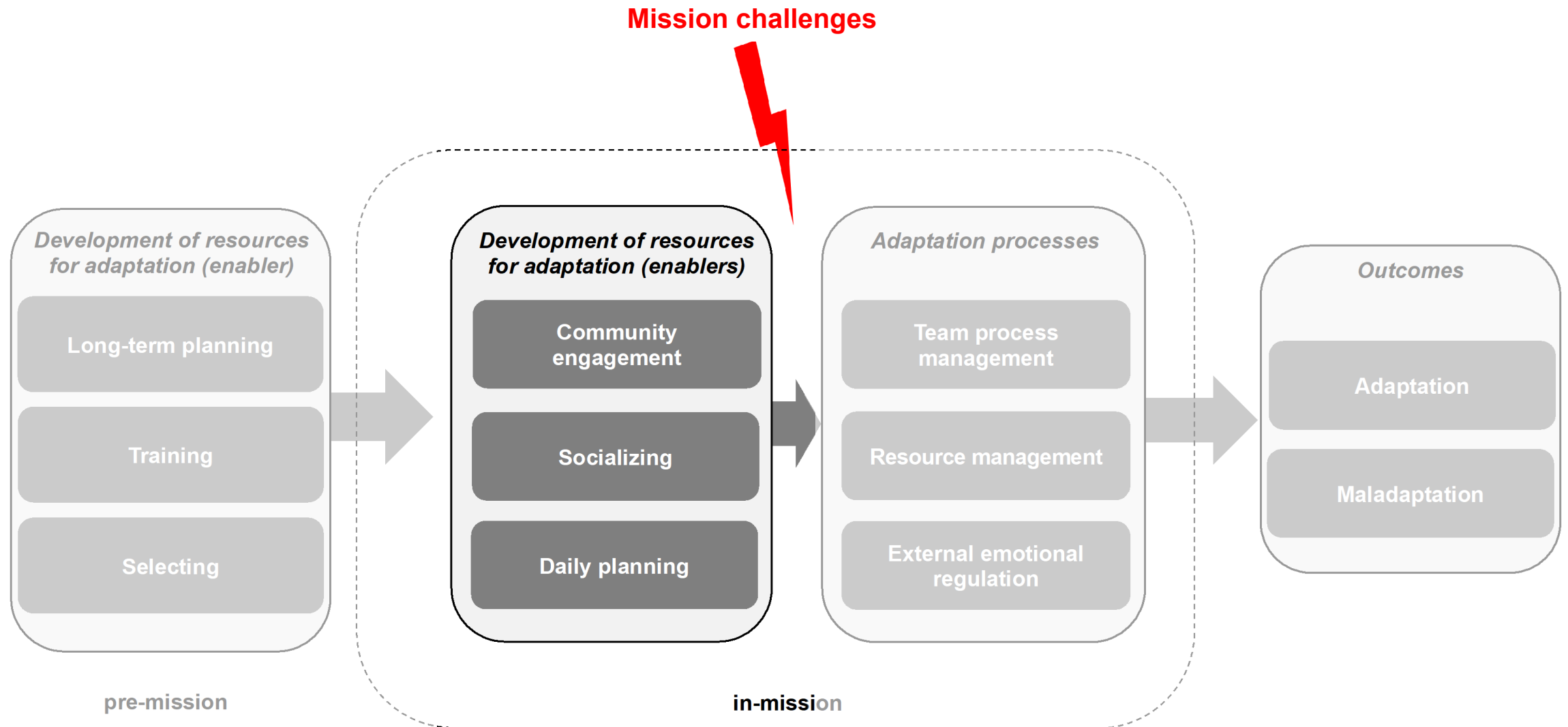
PANAS (Thompson, 2007) | 3x / day | 19 days
5 items - positive affect & 5 items - negative affect



External emotional regulation

*“I'd never seen a group that managed to keep a **good humor** with the ill person himself, trying to encourage him. We managed to save him just in time (P38).*

“We started A Game of Thrones’ marathon to relax and have fun”. (P19)





Community engagement

- Strong overarching *sense of community* at stations
- Any person in Antarctica is a potential source of support
- Need to contribute to community:
 - Setting the breakfast table
 - Support other researcher and staff

“...there is always someone willing to help. You come here and you must have the full support of everyone. The first thing we do is we approach the person and say, "What do you need? What can we help you with?" (P27)



Socializing

- ...the collective process of engaging in social interaction that *builds* and *sustains* social ties
- Broadens social network (instrumental, emotional)
- “Social lubricant”, decreases friction, eases communication

“You need a network here, to do the job well, within a project. Several small groups, working together, who share certain tasks. Then there is the station staff, doctors, military etc. who support us” (P22)





Socializing

“People won’t really be as ready to help her if she has problems with social interactions.” (P20)

"When scientists first come, I will be more prone to helping them if they come say hello during meals, chat with us in a nice way and then talk about the equipment or their problem [...] And we also like having fun, so let's have fun together and get to know each other first." (P01)



Daily planning (plan & reflect)

- ***Plan & anticipate*** everything that could go wrong beforehand
 - Define plan A, define contingency plans (Plan B, C, D...)
 - Define and adapt plans on the fly
- ***Collectively reflect*** about your work
 1. What went well?
 2. Where can we improve?
 3. What will be do differently tomorrow?



“We evaluated the day on the way back (from the field trip) and asked ourselves what went well today, where can we improve, and what will we do differently tomorrow? We both talked about how we reached the goals and that we got more done than expected. I definitely felt proud, and we were in a good mood.” (P8)





The ABC of effective Antarctic Teams

Anticipation

Building and Maintaining
Social Relationships

Collective Reflection

4

Dealing with Antarcticness: the ABC of effective Antarctic teams

Jan B. Schmutz, Pedro Marques-Quinteiro,
Walter J. Eppich and Mirko Antino

Simultaneously beautiful and dangerous, Antarctica's environment is harsh. Weather conditions change within minutes, especially during the Antarctic winter when the continent is almost completely cut off from outside contact, making resources scarce. In this extreme volatility, scientists, expeditioners, staff and managers face unprecedented challenges that hardly compare with other environments. This dynamic, dangerous and, at the same time, beautiful environment captures how we define 'Antarcticness'. In Antarctica, things often do not go according to plan. Teams have to deal with Antarcticness, which means they must quickly adapt and improvise to ensure mission success (Chapter 9). Shackleton's Imperial Trans-Antarctic Expedition represents the quintessential team that dealt with unexpected events and came up with new plans on the fly to survive.

On 5 December 1914, Ernest Shackleton and his crew left the UK's southernmost whaling village on South Georgia Island in their quest to be the first to cross the Antarctic continent. The Imperial Trans-Antarctic Expedition consisted of one ship, the *Endurance*. The team planned to travel into the Weddell Sea and deposit a crew of six men, who would then journey overland across the continent to the Ross Sea. The *Endurance* would then sail around the mainland to the Ross Sea, where another team would be dispatched to lay supply depots for Shackleton and his crew to complete the second half of their overland trek. The ship would await the first team's arrival on the Ross Sea. However, everything turned out differently. The *Endurance* never reached the Weddell Sea. Only 44 days

ANTARCTICNESS



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Thank you



“Antarcticness” free download from UCLPRESS (<https://www.uclpress.co.uk/products/180737>)