

Psychology in the Antarctic

Extreme and Unusual

Antarctica presents both extreme and unusual challenges for humans - 'extreme' being a measure of how much technology is needed to stay alive and 'unusual' being how different it is from their normal experiences.

Most people will be familiar with the great successes and failures of the heroic age, such as the expeditions of Shackleton and Scott, but the records of lesser known expeditions also provide valuable material for the modern field of psychology.

The first Antarctic winter

The *Belgica* sailed for the Antarctic in late August of 1897 with a crew of nineteen on-board. They included one Dr Frederick Cook. The expedition itself had two main objectives – exploration and science – but its largest claim to fame was that it was the first expedition to spend an entire winter in Antarctica. This occurred when the *Belgica* was accidentally or deliberately trapped by pack ice in the Bellingshausen Sea. This was the first time that European explorers had endured the rigours of twenty-four hour darkness in the depth of an Antarctic winter - consequently they had little information with which to prepare themselves.

During the expedition there were several notable events, including two deaths, but it is the written notes of Dr Cook that now provides a first, fascinating insight into the effects of an Antarctic winter on human behaviour.

On May 31, 1898, Dr Cook wrote in his diary, "*...we had placed before us the outline for industrious occupation; but we did little of it. As the darkness increased our energy waned. We became indifferent, and found it difficult to concentrate our minds or fix our efforts to any one plan of action... The men were incapable of concentration, and unable to continue prolonged thought.*"

Later he added, *'During the early part of the night it is next to impossible to go to sleep, and if we did drink coffee we do not sleep at all. When we do sink into a slumber, it is so deep that we are not easily awakened.'*

This is the first recorded description of the so-called 'winter-over syndrome', which is still occasionally reported in modern Antarctic bases. Interestingly, it also bears a strong resemblance to what is currently diagnosed as Seasonal Affective Disorder (SAD), in which the person feels depressed, is excessively sleepy, becomes less sociable, and has an increased desire for carbohydrate-laden foods.

The 'baking treatment'

In 1898, there were no effective medications for such conditions, but after some creative thinking and a bit of experimenting, he devised what the sailors eventually called 'the baking treatment'.

Dr Cook reasoned that what was needed was the opposite of the winter environment, so for the worst affected men he prescribed;

- a diet of milk, cranberry juice and fresh meat
- more exercise
- more warmth
- more light



The Belgica, immobilised by pack ice

None of these changes were easy, especially with limited food supplies during the long polar night, immobile in the Bellingshausen Sea, but today of special interest is that he had the men sit in a small room with a hot stove, whose door was kept open so that the men were exposed to bright light.

Although untried at the time, Dr Cook's 'baking treatment' was found to be of significant help to the afflicted men. It is bemusing to find that this treatment, especially the increased exposure to prolonged bright light, was not discovered by the wider medical community until the early 1980s. .

There are many such incidents throughout the history of polar exploration that illustrate how many of our supposedly 'modern' psychological problems were faced by those hardy (and sometimes not so resilient) early explorers and how much we can learn by looking backwards rather than forwards.

Sleeping in Antarctica

Many human behaviours and body processes follow a daily (circadian) cycle or rhythm. A major environmental clue used to coordinate these 'biological rhythms' is daybreak and its timing helps to explain why we often feel more energetic on long summer days but less so in winter. Yet, near the poles, only twice a year (briefly in spring and autumn) does anything resembling normal day and night occur. The effect of this light regime and how it affects individual biological rhythms and behaviours has fascinated researchers for decades, especially relating to:

- the time of going to sleep and waking
- falling asleep and staying asleep.

These sleeping disturbances appear to be related to the way our hormones, such as melatonin and serotonin, are controlled. In Antarctica, this knowledge is especially important because sleep is important for optimal mental functioning. Without it, in such a risky and challenging environment, even simple mistakes can quickly place people at risk.

Adapted from material by Gary Steel, Lincoln University by Donald Reid, *iMatters.co.nz* in association with Gateway Antarctica, University of Canterbury.

Images: Public domain, Eli Duke. Wikicommons

Thriving, not just surviving

Psychological research over the last 50 years has shown that a typical polar worker is a well adjusted, emotionally stable and sociable individual who is well-trained and conscientious about their job. These characteristics are important as individuals will face isolation, continual cold, and twenty-four hour daylight or night for several months of the year.

However these stresses can also be of distinct personal benefit, such as their:

- enjoyment in overcoming personal challenges
- improved social relationships
- increased 'sense of their being'
- being given time to reflect on complex issues while away from the hassles of regular society.

For Antarcticans these benefits often result in strong attachments between each other and to the continent itself - something which explains why people so often return and the dedicated support for Antarctic societies around the world.

However to gain these personal benefits polar workers must be able to contribute positively to the success of their country's programmes. Three particular skills are especially important for this:

1. Being good at your job

Being skilled at what you do is important, as poor workmanship in a small Antarctic base is likely to be inconvenient at best, or put people in danger at worst. Excellent workmanship and flexibility with tasks is especially important amongst winter-over parties where individuals often have several roles. Yet finding such individuals is not always easy as multi-talented people often find a stint in Antarctica disruptive to a successful career.

2. Being sociable

Sociability is the ability to interact smoothly with other people. This ability includes quickly summing up a situation or a person's mood and having a repertoire of social skills to act appropriately. Sociability is especially important in small groups that are confined to one location for great lengths of time and where individuals interact with one another more often than normal. In such situations people are unable to avoid each other for very long, so normally small, insignificant issues can escalate and may spread rapidly throughout the group.

3. Being emotionally stable

Emotional stability is the ability to stay in an emotional state and avoid frequent and large mood swings. Emotional stability also means that changes in mood are seen as reasonable or justified by others, allowing them to more easily predict how to interact with you.

Interestingly, this suggests that it is quite possible to be a relatively 'successful' Antarcticans even if you are grumpy, just as long as you are consistently so. While this is not the most desirable trait, others will know to expect grumpiness and therefore hopefully how to deal with it.

For a full range of Antarctic and Southern Ocean resources visit: **The Antarctic Hub** www.antarctichub.org



Social events help to relieve some of the monotony of polar life. McMurdo Station.

Although these three skills are probably the most important there are a few others that help to make a successful Antarcticans, namely:

- being older than 30 years of age.
- coping with periods of little stimulation (needed due to the extensive silence, unchanging views, frequent waiting, repetitiveness of tasks and the need to allow others personal time without interaction).
- coping with low achievement at times (needed as even simple tasks become slow and complex due to cold and bulky clothing).
- coping with some disorder or disruption (needed as the Antarctic weather frequently disrupts timetables and plans).
- not needing constant support (needed as the delivery of physical supplies is often unreliable and any emotional support is unavailable or disrupts other programmes).

Modern Antarcticans

The characteristics of a successful Antarcticans outlined above raises some interesting issues for modern polar stations which have increasing numbers of women, different nationalities, civilians (rather than military staff) and an increasing ease of travel to and from Antarctic.

In addition, there are a far greater number of communication possibilities (telephone, email, internet) for Antarcticans from field camps to the world. The rate of this change is also increasingly rapid as digital devices evolve and merge.

The effect of these communication changes has been to reduce the 'unusualness' of the polar world. Although it is still not the same as being 'at home' this ease of communication has meant that the task of selecting personnel has become easier and less risky -exposing a wider range of people to Antarctica.

Task

Men wanted for hazardous journey, low wages, bitter cold, long hours of complete darkness, safe return doubtful. Honour and recognition in event of success.
- Ernest Shackleton.

This advertisement was (supposedly) placed in the London Times in 1913. Using the material presented here make two lists of the ways today's Antarcticans would be:

- suitable candidates
- unsuitable candidates