

SCAR 2020 Conference

Session 41: “Living and working in Antarctica”



Session 41a

28th July 2020: 13:00 – 15:00 GMT

Zoom Link:

<https://zoom.us/j/96208124140?pwd=aXVMWHIPUDhEV2ptK3dVcjVNdkVOZz09%20#success>

Meeting ID: 962 0812 4140

Password: AntWorking

Session 41b

28th July 2020: 20:00 – 22:00 GMT

Zoom link:

<https://zoom.us/j/94598897406?pwd=SDY2emlFb2U5dIpFcXU2aE4zMdNBZz09#success>

Meeting ID: 945 9889 7406

Password: AntWorking

Session description

Antarctica is a continent of extremes and is often regarded as one of Earth’s best analogue environments for the isolation, confinement and challenges experienced during missions to outer space. Even today, Antarctica remains the most sparsely inhabited continent on the planet, with the number of people living at Antarctic research stations every year ranging from around 1,000 during the winter to around 4,500 during the austral summer. Most of the people who make parts of Antarctica their temporary homes come there to work. While research exists about human performance in Antarctica, only very limited scholarly work focuses on the motivations for people to live and work in Antarctica, their experiences and challenges while residing there, their sense of belonging and identity, their values, their connections to the continent or whether and why they desire to return to Antarctica in the future. This session will bring together a wide range of perspectives with

a focus on facilitating knowledge-building and discussion about the socio-cultural, psychological, economic, political or environmental dimensions of living and working in Antarctica.

Programme

Session 41a

(28th July 2020: 13:00 – 15:00 GMT)

13:00 – 13:05	Welcome and practicalities
13:05 – 13:20	Raquel Costa de Carvalho, IPGS, “Perceptions of harassment of the Brazilian Antarctic Program”.
13:25 – 13:40	Elizabeth Lewis Williams, University of East Anglia, “The Ministry of Food: the practical, psychological and symbolic importance of food as evidenced in early British Antarctic Base and Field Reports.”
13:45 – 14:00	Alice Marques, UFMG – Universidade Federal de Minas Gerais, “Working as researchers in the challenging research field of human biology and physiology.”
14:05 – 14:20	Anche Louw, Antarctic Legacy of South Africa, “Creating 360° footage of South Africa’s Antarctic and sub-Antarctic research stations; SANAE IV.”
14:25 – 14:40	Elizabeth Lewis Williams, University of East Anglia, “The Graveyard Shift: An Investigation into the Peculiar Case of Deception Island.”
14:45 – 15:00	Eliani Spinelli, Universidade Federal Fluminense (UFF), “Mental Health In The Antarctic Confinement: A Monitoring Model.”

Session 41b

(28th July 2020: 20:00 – 22:15 GMT)

20:00 – 20:10	Welcome and practicalities
20:10 – 20:25	Ria Olivier, Antarctic Legacy of South Africa, Stellenbosch University, “Antarctica in Black; Expression of Feelings of Antarctica through Art.”
20:30 – 20:45	Ellen Frye, William Paterson University of New Jersey, “Penguin Priests and Glacial Gods: Religion and Spirituality in Antarctica.”
20:50 – 21:05	Victoria Heinrich, University of Tasmania, “What do people new to Antarctica and the sub-Antarctic need to know about the weather and environment? Advice from people living and working in Antarctica and the sub-Antarctic.”
21:10 – 21:25	Peter Taylor, Antarctica New Zealand, “Validating a sustainable Antarctic station design and as-built: A New Zealand custom sustainability accreditation tool.”
21:30 – 21:45	Katelyn Hudson, Bond University, “Biophilic Design in Antarctica: connecting to nature through architecture”
21:50 – 22:05	Emmanuelle Sultan, Museum national d’Histoire naturelle, “HABIT-ANT?” Is housing in Antarctica equivalent to inhabiting the place?”.

Convenors:

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Session abstracts

Raquel Costa de Carvalho, IPGS, “Perceptions of harassment of the Brazilian Antarctic Program”.

Introduction: Harassment is a psychosocial risk characterized as a recurrent and intimidating behavior that is usually harmful. The topic became prominent in public discussions regarding polar environments in 2018, especially after notorious accusations, and gaining force due to the #Metoo movement. Objective: to investigate the experiences of perceived harassment in expeditioners of the Brazilian Antarctic Program (PROANTAR). Methods: a pilot study utilizing an online questionnaire with PROANTAR expeditionaries (n = 16), to improve a risk management protocol in Antarctica. Results: Four participants, all-female, reported having suffered harassment. Eight participants witnessed or heard about fellow victims of moral and sexual harassment. Of these, only five reported what happened. Fear of reprisals from their superiors was the main reason for not reporting the cases. Ten people (seven women and three men) agreed that women are more at risk of harassment than men. Ten people agreed it is possible for men to be harassed, and two disagreed. Conclusion: Where there are human interactions there is a risk of harassment, whether in a polar (confined and isolated) environment or not. It is important to raise awareness about harassment and to encourage reporting, reducing both inaccurate definitions or perceptions of interactions and victims' fear of exposing this type of violence. PROANTAR's actions to support sensitive research aimed at the safety of its expeditionaries must be acknowledged. Respondents considered the research important and its continuity is necessary for a better understanding of the issue and consequent harassment prevention.

Elizabeth Lewis Williams, University of East Anglia, “The Ministry of Food: the practical, psychological and symbolic importance of food as evidenced in early British Antarctic Base and Field Reports.”

In Antarctica, where everything required for a person's survival has to be imported, all aspects of food take on a significance over and above its necessity for keeping people alive. With particular reference to the Base and Field reports from the early years of the permanent British Antarctic research stations, this paper will explore the significance of food, showing that its preparation and shared consumption was important not just for feeding the body, but psychologically and symbolically: for maintaining individual morale and developing team spirit; for providing occasion for moving out of gender roles at a time when British bases were all male communities; for building a sense of home in an alien environment. Looking back at this period and beyond, we can also see from writing about food the apparent collapse of the material and the abstract, the real and the imagined, which is one of the characteristic aspects of the Antarctic experience as it is presented in writing. Birds, for example, provided a source both of companionship and fresh meat, as well as a different means of reading the environment; rituals surrounding the celebration of particular occasions, often with a very limited range of things to eat, were one of the ways in which food figured not just as something eaten but as part of an imaginary construct. A study of food, and attitudes towards it, has much to tell us therefore about what motivated the men who worked in Antarctica, their sense of values, belonging and identity.

Anche Louw, Antarctic Legacy of South Africa, “Creating 360° footage of South Africa's Antarctic and sub-Antarctic research stations; SANAE IV.”

The Antarctic Legacy of South Africa (ALSA) is a Knowledge Development Grant project within the South African National Antarctic Programme (SANAP). Its aim is to facilitate knowledge building about the work and life at the three stations of South Africa on Antarctica, Marion Island and Gough Island.

ALSA was granted the opportunity to visit SA's Antarctic Station in January 2019 during the take-over period, tasked to gather 360° footage of the SANAE IV station. The SANAE IV base can now be viewed through a 360 tour available on the SANAP website. This material will play a big role in the preparation of future overwintering personnel, as they will now be able to familiarise themselves with the station and get a sense of how it will be to live in the confined space of the station. It will also give family and friends of team members and take-over personnel the opportunity to understand their loved one's new environment. This new addition, the 360° station exploration, to the Antarctic Programme was released on International Antarctica Day 2019, on the brand new upgrade of the SANAP website. This presentation will give insight into the process of creating this material in a short time span. The process and difficulties in getting the footage will be discussed, as well as the most effective way to make this knowledge open accessible.

Alice Marques, UFMG – Universidade Federal de Minas Gerais, “Working as researchers in the challenging research field of human biology and physiology.”

The most isolated and extreme continent of the world offers a unique opportunity to investigate several aspects of human physiology, psychology and sociology in this environment that includes research ships, research stations, shelters and remote research camping's. However, in comparison to the major fields of scientific research covered in most Antarctic Programs the research in human biology, human physiology and medicine is under-represented. This is a very challenging field of Antarctica work. Diversely of other researchers studying the air, the water, the ice, and the earth in its many aspects, the human biologist investigates the military personnel, the staff in the Research Stations and Ships, and the scientists that work in Antarctica. Several specificities in this kind of research demand extensive planning, logistic details and adaptation of operational schedules impacting the quality and quantity of data collection and implicating the outcome of scientific publications. The human biology approach needs to consider ethical aspects, the limitation of human and technical resources and equipment restrictions to be transported. Most research in this field depend on voluntary recruitment and usually demand long-term follow up, including pre and post examinations of the subjects, which are difficult considering the composition of the research groups of civilian and military volunteers, with their diverse geographical origins in Brazil and other countries. We expect to bring our experience, perspectives, and our motivation in order to facilitate the discussion about the socio-cultural dimensions of working in Antarctica as while researchers in the human biology field.

Elizabeth Lewis Williams, University of East Anglia, “The Graveyard Shift: An Investigation into the Peculiar Case of Deception Island.”

The Base Journal for the British base on Deception Island 1953-4 opens with a death. The fact that it is a suicide is not recorded. Two days later, after landing stores and coal, and stripping the No 1. engine, the men start digging a grave in the frozen ground of the old whaling cemetery. It takes three days. Five years on, the General Report and Base Journal for Deception begins with a note that this year had probably been the happiest in the history of the base, and that the island should no longer be considered one of the worst postings for members of the Falkland Islands Dependency Service.

With particular reference to early Base and Field reports, as well as to letters and memoirs held in the British Antarctic Survey archives, this paper will examine what gave rise to such a negative view of Deception Island. The psychological report from Halley Bay in 1959, which comments on the difficulties

of life on a static base, particularly over winter, when “one had to adapt oneself to circumstances or perish”, suggests that some of the difficulties experienced on Deception were common elsewhere. Comparing the rough notes of two recovered diaries from Deception to official reports from the same years, this paper will highlight the psychological pressures of winter darkness, and the various means by which the men were able to combat it, attempting to answer in the process whether or not there was indeed a peculiar case of Deception Island.

Eliani Spinelli, Universidade Federal Fluminense (UFF), “Mental Health In The Antarctic Confinement: A Monitoring Model.”

The aim of the present study is to develop a model for monitoring the mental health of personnel stationed in Antarctic. Initial in loco data collection provided researchers with an important insight on living conditions and activities developed at each location. It lasted a period of eight weeks during the summer months. Information collected from civilian and military personnel was obtained using interviews, focus groups and self-administered questionnaires. Data is being analysed using a sociocultural perspective. Thus, compensating for the limitations arising from physical extremes and isolation, the exceptional opportunity of coexistence of researchers with a significant portion of the population focus of this study, consisting of individuals of different characteristics which, equally, are subjected to very different conditions of everyday life, allows confirming and generalizing hypotheses in relation to mental health and to seek to standardize more effective longitudinal monitoring system compared to current ones, in general based on mental disorders. Thus, in intersubjective contexts, in which social mediation by means of signs plays a crucial role, it is possible to study the psychic phenomenon in occurrence and recognize underlying processes resulting from the tension and struggle between the biological and the social, which we call the axis of Submission and Resistance, in which human action, on a case-by-case basis, is subjected to parameters of forced coexistence, strict rules, strenuous routines, restricted possibility of coming and going, and will be weighted by explicit resistance mechanisms and hidden responses that are reflected in a spectrum of psychophysiological and behavioral responses.

Maria Olivier, Antarctic Legacy of South Africa, Stellenbosch University, “Antarctica in Black; Expression of Feelings of Antarctica through Art.”

South Africa has sent overwintering teams since 1948 to their stations in the Antarctic region. There is also a takeover period during which conservation and construction personnel and scientists visit these stations for work. Most of the people that work in Antarctica have the tendency to capture these experiences in photographs diaries and videos. However, there is a few that express their feelings and emotions in sketches and paintings. Jess Verheul,, a scientist and an emerging artist expressed this through sketches in ink - hence the name “Antinktica”. During a Research Expedition to Antarctica (the South African National Antarctic Programme – SANAP) she spent some of her spare time sketching while watching the world around her. She state in her book “Armed with a few fineliners, a blank sketchbook and a boatload of time, I set out to observe and experience the place of my dreams even deeper. To remember. To feel. To wonder. To appreciate it all the more”. She initially had no plans to publish her art. Since the opportunity was presented by the Archivist at the Antarctic Legacy of South Africa (ALSA) to publish it in a coffee table book and the book launch took place in March 2020. The book consists of 49 sketches; including 3 poems depicting scenes experienced by Jess during her Antarctic Expedition. Only 100 publications are available. This poster will give an insight to Jess’s experience and show some of the sketches.

Ellen Frye, William Paterson University Of New Jersey, "Penguin Priests and Glacial Gods: Religion and Spirituality in Antarctica."

In literature of Antarctica, one religious theme appears the most frequently: death. Death is always nearby, in the crevasse of a glacier or swirling in a blizzard. Although most corpses lay buried where the person died, there are three cemeteries on Antarctica, as well as places of worship. The first aspect of this paper is dedicated to these spaces, from the few actual churches built in Antarctica, to rooms in research stations where religious services are held. Linked closely to the actual "architecture" of religion are the accompanying musical and artistic components of spirituality. In several texts about Antarctica, such as explorers' journals, polar parties sing hymns and carry images of God. Similarly, the use of prayer appears in many pieces of Antarctic literature. Nearly everyone who has traveled to or lived on Antarctica has remarked about being awestruck upon seeing Antarctica for the first time, and those who openly spoke of being agnostic or atheist, admitted to their beliefs being tested, for numerous reasons: the unbelievable beauty, the majestic natural magnificence, surviving incredibly harsh weather, or somehow escaping certain death. This paper illuminates a spiritual aspect about Antarctica: unlike a mirror, the ice of Antarctica reflects a shattered image, like that of a broken heart, and perhaps that is the pull to Antarctica. Being in Antarctica might give those who are paralyzed by grief a small taste of heaven, because it is so remote, so beautiful, and so peaceful. Truly, Antarctica might be where mourning dawns and hope arises.

Victoria Heinrich, University of Tasmania, "What do people new to Antarctica and the sub-Antarctic need to know about the weather and environment? Advice from people living and working in Antarctica and the sub-Antarctic."

Antarctica is an extreme and isolated environment where cold exposure can lead to injury, diminished cognitive capacity, decision errors, and even death. Understanding, awareness, and knowledge of the environment may reduce risk and improve human safety, performance and resilience in Antarctica. Information may be passed to new expeditioners through the mentoring, tips, and stories of experienced expeditioners. We were interested in what the people who have lived and worked there thought it was important for 'new' people to know, learn, and remember about Antarctica's surprising, changeable, and potentially deadly weather and environment. Essentially, we were interested in what we can learn from people who live and work in these extreme environments.

As a part of an exploratory study of weather information use and decision-making in the Antarctic and Sub-Antarctic we interviewed 30 people who were currently or recently deployed there. Interviews were conducted via video and audio calling, email and in person. Participants included people who were very experienced in their roles with multiple years and trips to those who had only one season of experience. Here we examine participants thoughts on severe weather and risk in Antarctica, and their answers to the question: "What does someone new to Antarctica and the sub-Antarctic need to know about the weather and environment?" We discuss recommendations and advice people might give to a new colleague in Antarctica and the sub-Antarctic, and how this information can be used to guide training and enhance performance for those working in these environments.

Peter Taylor, Antarctica New Zealand, “Validating a sustainable Antarctic station design and as-built: A New Zealand custom sustainability accreditation tool.”

"The New Zealand Antarctic Programme is currently designing a new Antarctic station, as the current station, Scott Base, has reached the end of its life. The Scott Base Redevelopment Project will be the largest construction project ever undertaken by New Zealand in Antarctica. To demonstrate leadership in sustainability throughout the design and build process, a sustainability accreditation program that is both robust and specific for the Antarctic built environment was developed in collaboration with the New Zealand Green Building Council. A bespoke custom tool for a “Green Star” design and as-built accreditation scheme was the result. The custom Green Star tool encourages practices that reduce the projects contribution to climate change, enhance the health and wellbeing of inhabitants, ensure high performance of buildings, and contribute to sustainable market transformation. The tool requires this project to reduce its embedded and operational environmental impact. Methods such as the implementation of Life Cycle Assessments (LCA) and greenhouse gas modelling with iterative improvements are incorporated in the tool. To achieve accreditation, sustainable elements, environmental performance, and innovative solutions are incorporated into a station’s design. Sustainable elements and the delivery of Green Star are also included throughout the main contractor procurement process. This presentation will delve into the development of this custom tool, strategies and opportunities Antarctica New Zealand have developed to minimise its impact from the construction of a new station, and some preliminary results from an LCA model. The potential for collaborative development of Antarctic sustainable rating systems and LCAs will be discussed."

Katelyn Hudson, Bond University, “Biophilic Design in Antarctica: connecting to nature through architecture.”

Humans developed the built environment through a series of behavioural patterns interacted with natural aspects necessary to provide shelter and protection from their surroundings. These practices have continued to innately be utilised and identified as ‘biophilic design’. This research investigates how those elements have been utilised in one of the few climates where it is particularly pertinent, requiring humans to still rely on buildings purely for the basic purpose of survival, Antarctica. Through a case study framework, six examples of buildings ranging the history of human habitation in Antarctica will be explored; Robert F. Scott’s Hut at Cape Evans, Douglas Mawson’s Hut, Australia’s Casey Station, United Kingdom’s Halley VI, and the United States of America’s McMurdo Station and Amundsen-Scott South Pole Station. Not only do they represent significant periods in the relatively short Antarctic history, but they illustrate different scales, building practices, material technology, cultural backgrounds, and location within the continent. The cases will be then analysed based on the elements and attributes of biophilic design to investigate how it has been integrated. The result of this research gains greater insight into biophilic design regarding residential architecture, as well as tracking building practices concerning occupant well-being.

Emmanuelle Sultan, MNHN, Elisa Dupuis, Sorbonne Universite, “HABIT-ANT?” Is housing in Antarctica equivalent to inhabiting the place?.”

"HABIT-ANT?" is a scientific and citizens' initiative whose mission is to explore the interactions between humans and non-humans in a changing world in the particular context of the Southern and Antarctic zone. To do so, the global common model of Antarctica becomes a living laboratory that goes beyond the geographical location by involving people who are not there but are connected to the

Southern and/or Antarctica. The link can be sensitive, poetic, scientific, managerial or any other type. The project is to design space-time that encourage the emergence of collective intelligence and serendipity. The project thus invites observation, dialogue and reflexive approach with tools from Environmental Sciences, Human and Social Sciences, artistic practice as well as Participatory Action Research in a world in metamorphosis. The first part of this study consists in conducting an analysis of anthropized and protected sites such as the Kerguelen archipelago, the Crozet archipelago, the Amsterdam and Saint-Paul islands and Terre Adélie, through the prism of habitat. Occupied by man to house essentially "observatories" (scientific as well as political), these places are also home to an Antarctic culture, creating a contemporary heritage. It will be complemented by workshops conducted in remote sites to explore legacy, perceptions and representations associated with the Southern and Antarctica.