

## Exploring the association of trip modalities with experiential and learning outcomes of Antarctic tourism

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Antarctic tourism plays a crucial role in creating meaningful interactions between tourists and the Antarctic environment. The way tourists experience this last frontier is vital for fostering environmental awareness and public support as Antarctica is under increasing threats.

Antarctic tourism is growing and transforming. The emergent air-cruise modality, a variation of the traditional cruise modality, is diversifying not only the mode of transport but length and nature of itineraries and activities. Understanding the interactional components of Antarctic tourism and how they shape experiential and learning outcomes is critical as these could influence tourists' awareness, attitudes, and behavior. Our study was guided by the overarching question: how modalities and their associated trip characteristics influence the experiential and learning outcomes of Antarctic tourists?

During the 2019-2020 season, we deployed PRE and POST tourists' surveys using 13 categories of questions related to experience, emotions, knowledge, and attitudes. As of the end of February 2020, we have collected 200 surveys and we expect to collect 100 additional. Experiential outcomes will be analyzed by conventional satisfaction measures and the autobiographical memory scale. Learning outcomes will be analyzed using measures of knowledge, beliefs, attitudes, and behavior. The association of modalities with the outcome variables will be examined by statistical analyses like T-tests, MANOVA, and ordinal regression.

We expect that the results of our analysis could contribute to a better understanding of Antarctic tourism in its evolving forms. This would inform tourism management, especially modality-linked tourism educational programming and communication – two essential components of Antarctic tourism.

## Towards a broader dialogue on the management of tourism in Antarctica

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Antarctica is an increasingly popular tourist destination and attracts over 75,000 visitors in the summer. Currently, the number of tourists going to Antarctica is determined by market forces. The upward trend of the last decade indicates that tourist numbers will continue to rise, and the activities in which they engage will further diversify. This increases the risk of negative impacts on the environment, and heightens the need for the timely, effective management of the industry. Tourism is currently governed through the Antarctic Treaty System, whose decision making process is lengthy and slow. There are concerns this process, left unchanged, cannot adequately respond to the huge increase in tourist numbers expected in the next few years. To this end, the Polar Institute of the Wilson Center proposes itself as a novel platform for management discussions, inviting collaborators to a neutral forum to discuss and create innovative solutions that can assist policy makers in the ATS. Since 1968, the Wilson Center has promoted open dialogue and non-partisan insights to create actionable ideas in many regions of the world. Into this 'think-tank' environment, we propose bringing together policy makers, environmental scientists, ATCP delegates, science communicators, and lobby groups with vested interests in Antarctica, such as the tourism industry, to seek timely, realistic and practicable outcomes that can fit into the framework of the ATS.

## The growth of Chinese tourism to Antarctica: a profile of their connectedness to nature, motivations, and perceptions

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Antarctica emerged as a tourism destination only some 50 years ago, the annual number of visitors has increased and the nationalities of visitors have shifted over the years with an increasing number of visitors from the People ' s Republic of China. However, there is a lack of empirical studies on Chinese visitors ' motivations and perceptions of their Antarctic visits. This study reports on a preliminary investigation of the reasons why Chinese visit Antarctica, their post-visiting perceptions of the region and their potential anthropogenic impacts on the Antarctic environment. The study is based on data collected from 120 passengers who travelled on two Antarctic voyages on fully Chinese chartered cruises during the 2017/18 Antarctic season. The results show that curiosity about Antarctica is the major motivation for tourists from China to visit Antarctica. The majority of respondents indicated a sense of commitment to the protection of Antarctica after their Antarctic visit but because citizens of mainland China may have a different understanding of environmental protection. The close supervision and guiding during their shore visits are recommended.

## New Phytoplankton Communities Revealed in Coastal Antarctica Using a Citizen Science Approach with Tourism

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The Antarctic Peninsula is one of the fastest warming regions in the world, with over 87% of its glaciers in retreat. Documenting the seasonal and annual dynamics can be difficult due to extreme weather conditions, large icebergs, and limited research vessels. Gathering time-series data throughout the austral spring, summer, and fall can be achieved through the framework of citizen science (CS). The Antarctic tourism industry includes a fleet of vessels that visit the Peninsula November through March. We developed a CS program—FjordPhyto—to leverage these vessels as platforms to gather data and to engage the traveling community in the legacy of polar research. This study represents the first attempt to understand phytoplankton succession at coastal sites and to date, more than 300 samples have been collected from 19 locations with the help of more than 3000 travelers. The coast is proposed to have hotspots for biodiversity with large aggregations of krill, whales and benthic fauna fueled by the phytoplankton blooms. Variability in the amount of meltwater coming from melting glaciers is expected to favor different phytoplankton assemblages. A shift in this food source could have ramifications to carbon available to higher trophic levels in the nearshore food web. Results from the first years sampling were unexpected: Existing observations report diatom dominance in this region; however, the blooms encountered in this study were from flagellated taxa, documenting the first record of a dinoflagellate bloom in the region. Results highlight the importance of nanophytoplankton and a shift in the different dominant taxa provide a first approximation of how much organic matter is available through the phytoplankton communities sampled. We show that CS is a valid tool that can enhance research in Antarctica, while also providing an enriching experience to travelers interested in learning more about science in polar environments.

## Thawing Out Antarctic ambassadors: Who Are They and What are They Doing?

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The number of Antarctic tourists increases annually, and recently exceeded 50,000 during the 2018/2019 season. Antarctic tour operators emphasise that Antarctic tourism is an opportunity to “create a corps of Antarctic ambassadors” who will promote the protection and conservation of Antarctica. However, scholarly research directed at examining the concept of Antarctic ambassadorship has been limited and, to date, neither an agreed upon definition of the term Antarctic ambassador nor any substantial understanding of what it implies exist.

Our research investigated the concept of ambassadorship in the Antarctic context, drawing on a database that tracked the usage and evolution of the term. To build this database, we reviewed a broad range of sources, including scholarly literature, ATCM reports and online media such as newspapers, blogs and social-media platforms. In total, we identified 365 sources. Due to the relatively small number of academic research directly addressing Antarctic ambassadorship, online media represented the majority of the sources reviewed in this study.

We used qualitative and quantitative analyses to examine (a) who was commonly associated with the term Antarctic ambassador, (b) what context it occurred in, and (c) the underlying intentions of its use. Our results highlight that the term does not commonly occur naturally in language but is frequently used as a title, and primarily associated with organisations, including tourism operators, in their efforts to promote themes of environmental protection or Antarctic research. The key ambassadorship characteristics identified were Connection, Knowledge, Passion, Representation, Champion, and Support (through communication and behaviour).

## Transforming tourists' relationship with Antarctica through culturally informed mediation practices

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Unlike most destinations, Antarctica is not a place that many tourists can encounter independently. Travelling primarily on cruise ships to selected sites in the Antarctic Peninsula, most tourists experience the continent in a carefully curated way, with onboard lectures and activities and guided excursions framing their encounters with the environment. However, despite increasing scholarly attention to polar tourism, the nature of this mediation and its role in tourists' experience of Antarctica has yet to be systematically examined, and we are only at the beginning of understanding how cultural and national background interacts with this mediation. Cultural attitudes to the continent can be remarkably varied. Scott, Shackleton, and Mawson might weigh heavily on the British and Australian imaginations, but contrasting exploration histories, geopolitical relations, and attitudes to wilderness mean that travellers from other countries (such as India, China, Norway, or Argentina) could understand the region very differently.

This presentation outlines a forthcoming collaborative project between a tourism operator and an academic team aiming to discover how cruise-ship tourism can foster a positive and culturally informed relationship with Antarctica among diverse groups of visitors. Through in situ fieldwork, including interviews and participant observation, the project will examine how the typical Antarctic tourist journey, with its interpretive activities as well as its multi-sensory experiences, shapes the experience of people of different national and cultural backgrounds. The presentation outlines the project's rationale, objectives, methodology and potential outputs.

## Travel Guide Books and the Antarctic Tourist Experience: A Textual Analysis of Lonely Planet "Antarctica"

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The expansion of the Antarctic tourism industry in the last few decades has been accompanied by a small but growing corpus of travel guidebooks. These range widely in purpose and intended readership, from Dixie Dansercoer's "practical handbook" for independent expeditioners to Peter Carey and Craig Franklin's "cruising guide" for visitors travelling to the Antarctic Peninsula and other popular destinations. While a sizeable body of scholarship focusses on Antarctic tourism, the role of travel guidebooks in this industry remains largely unexamined.

This presentation offers a brief, broad-scale textual analysis of the most mainstream title in the genre, Lonely Planet "Antarctica." First published in 1996, and now in its sixth edition, this guidebook includes many of the features associated with other Lonely Planet titles, including a list of top tourist sites, suggested itineraries, and even the standard section called "On the Road." Nonetheless, as this phrase suggests, Antarctica's unique features as a travel destination put significant strain on the series' conventions. How does a brand built on the idea of independent travellers who use travel guides to construct bespoke experiences deal with a continent that tourists almost always experience as part of a highly controlled cruise-ship journey?

Textual analysis is of course only one approach to understanding the ways in which travel guides form part of Antarctic tourism. This presentation concludes by suggesting further means through which Antarctic travel and tourism scholars might incorporate tourist guide books into their research.

## Changing distribution and intensity of Antarctic tourism into the future

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Antarctica is home to unique species and remote wildernesses found nowhere else on the planet, yet it is faced with increasing threats from a changing climate and rapidly growing human activity. Nature-based tourism is an opportunity to connect people with species and ecosystems in conservation need, but can also pose substantial damage to the natural environment itself. This dilemma is prominent in Antarctica. Yet, remarkably little is known about the distribution, intensity and possible future trajectory of Antarctic tourism. By modelling the characteristics of potential landing sites in combination with two Intergovernmental Panel on Climate Change (IPCC) climate forcing scenarios, we make projections about how the distribution of landings may change. Our results suggest that new landing sites suitable for tourism may become accessible in relatively remote parts of the Antarctic coast, which are currently rarely visited, and that the intensity of landings at some existing tourism locations may also increase. Increased risk of non-native species establishment with climate change will be exacerbated by increased introduction opportunity from human activity at a growing number of sites and in new regions across the Antarctic continent. These synergies may also facilitate the potential intraregional transport of native species. Yet despite these potential risks, tourism could play a critical role in Antarctic conservation through ambassadorship and increased public awareness.



## Delivering responsible Antarctic tourism - past lessons for future action

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The International Association of Antarctica Tour Operators (IAATO) was founded in 1991 with a mission to advocate and promote the practice of safe, environmentally responsible private-sector travel to the Antarctic. Initially formed by seven operators, six vessel and one land-based, IAATO has grown to encompass around 50 operators representing the majority of companies offering opportunities to experience Antarctica today. IAATO self-manages its activities to fulfil its mission, working within the framework of the Antarctic Treaty System, particularly the Environmental Protocol. Most travellers still visit the Antarctica Peninsula on vessels that follow a traditional model that was established in the 1960's. However, over the decades, drivers such as emerging markets, changing economic and environmental conditions, regulation, diversification of activities and past periods of growth have required IAATO to continually evolve to meet its objective that its planned activities will have no more than a minor or transitory impact on the environment.

IAATO maintains one of the most comprehensive databases on human activity in Antarctica, annually reporting to the Antarctic Treaty Consultative Meeting to facilitate discussions about managing it. We use examples to describe how IAATO has responded to challenges and opportunities in the past to prepare for current and projected tourism growth. We will outline existing obstacles, as identified by the industry, illustrating how IAATO is using science and engagement to meet its objectives. This includes long-term monitoring, applied practical management in the field, providing policy makers with appropriate information and managing travellers' expectations to create ambassadors for Antarctica's continued protection.

## Scientific engagement increases polar awareness amongst travellers: Examples from the expedition ship operator Hurtigruten.

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Hurtigruten, a member of the International Association of Antarctica Tour Operators (IAATO) and AECO (Association of Arctic Expedition Cruise Operators), has been visiting the vulnerable polar environments for two decades, witnessing the effects of Anthropocene footprint and climate change. Aware of our role as a stakeholder in promoting the long-term protection of these regions, we promote safe and environmentally responsible operations, invest in the understanding and conservation of the areas we visit, and focus on the enrichment and education of our guests. This has become increasingly important in more recent times, as tourism and the number of ships in the polar regions has grown significantly. Much needed scientific data collection in these areas is challenging due to remoteness, a harsh environment and high operational costs. As such, we have established collaborations with numerous scientific institutions and support the scientific community by providing our ships as platforms for spatial and temporal data collection, transporting researchers and equipment to and from their study areas and participating in Citizen Science projects. Our ships are equipped with Science Centers that engage polar travelers in research and enable collaborating scientists to collect high quality data and perform preliminary analyses in situ.

We present results from such collaborations and demonstrate how, when combined with structured, interactive learning opportunities, they facilitate globally important research while positively affecting our guests' attitudes and behaviors after they return home.

## Tour Guiding in Antarctica: From Policy to Practice

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Each year, decisions on the management of Antarctic tourism take place at high-level meetings within the Antarctic Treaty System; these guidelines and recommendations inform the activities of those who travel to the Antarctic Region on commercially organized voyages and expeditions. In addition the International Association of Antarctica Tour Operators (IAATO) promotes advocacy and responsible tourism management within its membership, providing guidelines and resources to ensure safe visitor management. This paper examines the role of the Antarctic tour guide as the front-line actor in interpreting and enforcing these directives before Antarctic visitors, and asks how guides interpret Antarctic governance in the cruise setting.

We investigate where guides see themselves positioned within the existing structures of Antarctic governance, and the ways in which they act as mediators between theory and practice. Guests undergo mandatory IAATO briefings and biosecurity checks prior to any landings, but how is this contextualised within the wider Antarctic governance framework? How aware are guides of the wider governance structures at play in Antarctica? And to what extent do guides see providing this context as their responsibility? Through focussed interviews with Antarctic tourism guides with a range of experience in the industry, we analyse the connections between policy decisions and on-the-ground practice and reflect on the end-user side of tourism governance decisions.

## Ushuaia's role in the Argentine Antarctic policy and the influence of capitalism in the city through Antarctic tourism in the 20th century

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The objective of this research project is to analyze factors and actors that regulate Ushuaia's role in Argentine Antarctic policy and global Antarctic tourism. I have taken a constructivist approach to explore and explain the different social, political, economic and scientific transformations that Argentina has undergone in the 20th century, with a focus on the position taken by the Argentina in Antarctic policy and Ushuaia's role at each stage of the development of Argentina's Antarctic sector. Changes in Ushuaia are assessed in comparison to the trends of the global market and Argentine economic policies. Although Ushuaia is considered to be one of the Antarctic gateway cities and is visited by more than 90% of Antarctic tourists, fulfilling Argentina's geopolitical-economic ambitions and living up to the expectations of the commercial tour operators, being seen as an Antarctic city is not enough. This research argues that Argentina, as one of the hegemonic actors in Antarctic policy, is not the only actor to determine Ushuaia's relationship with the Antarctic in the 20th century.

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SESSION 35

## THE CHANGING FACE OF ANTARCTIC TOURISM



Daniela Liggett  
Karen Alexander, Marisol Vereda

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