INTRODUCTION

By the copious details they [expedition narratives] embrace, in every branch of astronomical and nautical science, of geography, meteorology, and other physical researchers,—the charts and prints by which they are illustrated—they are made highly valuable to the man of science and taste, and well adapted for public libraries.

— John Barrow, Voyages of Discovery and Research within the Arctic Regions, 1846

hat was the purpose of Arctic exploration, and why publish accounts of the voyages? These were the critical questions the second secretary to the British Admiralty John Barrow (1764–1848) sought to address in his book Voyages of Discovery and Research within the Arctic Regions (1846). Barrow had been a key advocate of British government–funded Arctic exploratory voyages over the previous four decades, and though none had succeeded in finding the fabled Northwest Passage, his book was a passionate argument for the importance of Arctic exploration. The many past Arctic expeditions may not have found a trading route to the Pacific, but landscapes, Barrow argued, "must be traced" as geographical surveying cannot be conjectured. Further to geographical discovery, Barrow wrote, the "acquisition of knowledge is the groundwork" for the instructions given to the explorers, directing them to undertake "constant observations" for the "advancement of every branch of science." These results were published in scientific journals, but another genre arguably reached a broader audience: travel literature.

◀ FIGURE I.1. Map showing the approximate routes taken by the main expeditions discussed in the following four chapters. The map was kindly produced for this book by Philip Stickler, Department of Geography, University of Cambridge.

In the nineteenth century travel literature served multiple purposes and therefore had multiple audiences. It was an important evidentiary resource for many scientific disciplines, and it was one of the primary sources through which diverse groups of readers could learn about parts of the world they would never visit themselves. It was a popular genre, one that spoke of distant lands, strange animals and plants, and unfamiliar, exotic cultures. They were intended to be captivating accounts, typically of heroism in the face of danger in unknown regions, and the diary format used in most narratives invited the reader to join in the discoveries. While the decision was often taken to place the majority of the scientific measurements and observations in appendixes to the narratives, the day-to-day format of the main body of the text included descriptions of scientific investigations as well as the experiences of the explorers. In fact, Barrow argued that this feature of Arctic narratives was problematic, as it contributed to the high cost and extensive length of the books.² It was also problematic in subtler ways. The multiple functions of the travel writing format posed unique challenges to the authors. The diary format suggested that this was an unedited and direct account of the Arctic; so when individual aspects of the geographical, scientific, and experiential parts of a narrative were questioned, it had the potential to delegitimize not only the results, but the explorer as well. It was never a given that narratives were accepted as a true account of the Arctic. Their veracity was linked to the author, as well as to the surrounding circumstances of the expedition and the textual strategies employed within them. This book concerns this process and asks questions about how explorers constructed the Arctic, their scientific practices, and themselves in their travel narratives.

Arctic explorers were expected to undertake investigations into a wide range of scientific areas, including geology, anthropology, ethnography, medicine, geography, hydrography, meteorology, magnetic and astronomical science, botany, natural history, and glaciology. Geography was, and is, a branch of science, but geographical surveying was treated and evaluated separately from results relating to other scientific fields. In sum, explorers were expected to function as jacks of all trades. The Arctic was a particularly intriguing site for many scientific disciplines, as explorers would encounter extreme weather, rugged terrain, and unusual fauna and flora. It was hoped that by studying the Arctic, it would be possible to elucidate not only the resources available in the region, but also add to the general understanding of the climate. The definition of *climate* as associated primarily with the atmospheric sciences is relatively new; it used to be related to a much broader set of issues, including health, geography, economy,

and racial concerns—all of which are reflected in the travel narratives.³ This was not limited to the Arctic, but was reflected in imperial practices in other areas as well. Significantly, the historian of science Katharine Anderson has shown how British imperialists in India perceived the region as a "natural laboratory for meteorology" because it "seemed to hold the key to unravelling the laws of the atmosphere." In the same way, the Arctic was also treated as a laboratory. Scientific experiments were made locally, with the intent of applying the results globally.

Take for example the Scottish physicist and proponent of Arctic explorations, Balfour Stewart (1828-1887). According to him, Arctic research was essential because it was an important example of what he referred to as "cosmical science." For Stewart, cosmical science (what we might call geophysics today) referred to studies of the relation between solar disturbances and meteorological changes. Past breakthroughs in astronomy, such as that of Johannes Kepler and Isaac Newton, Stewart argued, were due to the type of "laborious and long-continued observations" which could be organized only by the government. Arctic whalers and merchants could not be relied upon to undertake such observations. Stewart's line of reasoning combined the ethos of an all-encompassing study of the Earth with a hierarchical view of who could provide observations for these studies. He noted that "we have before us the splendid possibility of predicting the nature of seasons; but surely we cannot expect that nature, who is usually so reticent, will disclose her secrets to a nation or a race who will not take reasonable trouble to complete their knowledge of the physics of the earth?" 5 For people like Stewart, the results from Arctic explorations were worth their effort exactly because it was difficult.

Such lofty goals and mission statements were one thing, but practice was something quite different. There was rarely a correlation between what it was hoped explorers could achieve geographically and scientifically and what they actually produced. To what extent it was possible to control the unpredictability of what explorers encountered in the Arctic was a key problem. The scientific research of Arctic explorers and the type of scientific knowledge that was produced depended on the abilities and interests of the crew, as well as the luck of the expeditions. Perhaps counterintuitively, misfortune in geographical surveying could mean a boost in scientific results: for example, having your ship caught in ice for an extended period gave you a lot of free time to undertake scientific investigations and allowed explorers to build magnetic observatories or carry out measurements of the behavior and movements of ice. As a field site the Arctic was

not easily controlled, and attempts to mitigate this uncertainty reveal broader concerns about the production of field science in the nineteenth century. While the century is often described as a period of disciplinary formation, science in the Arctic followed a distinctive path. The knowledge produced there added to a broad range of scientific fields, rather than developing a distinct Arctic science. This was the case until the First International Polar Year (IPY) between 1882 and 1883, when countries came together in a concerted effort to establish a unified method for scientific research in both the Arctic and Antarctica. That is, a transition in the established scientific practices took place, from a focus on general scientific investigations in the Arctic to a more coherent Arctic science. As the Royal Navy lieutenant George T. Temple argued at the Annual Meeting for the British Association for the Advancement of Science in 1882, the IPY "marked a fresh point of departure in Polar investigation, which might now be considered as an accepted branch of study." 6

When scientific practices in the Arctic became more formalized during the First IPY, the associations of who were authoritative observers of Arctic phenomena changed. As an anonymous commentator wrote in the London newspaper the *Standard* in 1882, the IPY was a type of Arctic work "in a shape so different from the form it has taken during the last three centuries that the 'explorers' of 1882 would be scarcely recognized by Barents, Baffin, Hudson, Frobisher, Parry, or Franklin, as members of their famous brotherhood." I will explore these transitions as reflected in the travel narratives. Here I am concerned with the textual performance of this "famous brotherhood," as it was described in the *Standard*, and how the concept of the Arctic explorer shaped and was shaped by changing notions of scientific fieldwork and imperial and financial interests.

In this book, I employ broad definitions for terms such as *travel literature*, *narrative of exploration*, and *explorer*, and use *travel narrative*, *travel writing*, and *travel literature* interchangeably when referring to narratives from both large- and small-scale expeditions, as well as the texts produced by more settled travelers such as missionaries. The identities of explorers and their organizing bodies shaped the expeditions, and this influenced the representation of the explorers themselves, the ventures, and the science they produced. Travel narratives also reflect the complex relationship between explorers and imperial projects. As the historian Michael Bravo has argued, "The field of postcolonial literature has taught us to attend to the narrative strategies that produce cosmopolitan authorship and authority." That is, by paying close attention to the narrative strategies employed in travel accounts, especially in relation to scientific practices, we can

begin to unravel the processes by which the Arctic was constructed within the European and North American colonial discourses. It is important to emphasize that the Arctic, as known to Europeans and Euro-Americans, was a cultural construct. It was continuously reimagined through different venues, not only the exploration accounts of European naval men. Expanding how we define and use the category of "explorer," allows us to see the multiple voices through which this construction of the Arctic took place.

At the same time the focus on exploration ventures and the narratives that account for them is inherently problematic, as it runs the risk of portraying the Arctic, and the Indigenous peoples there, as existing or mattering only insofar as they came into contact with foreign explorers. This, I believe, is an ingrained problem in a considerable amount of Arctic historical and contemporary research: much of it has focused on singular nations or individual European and Euro-American explorers and explorations. I acknowledge that I am also applying nation-focused and Eurocentric ways of thinking when centering my study around Danish, Canadian, and British explorations. However, I hope to partially make up for this limitation: First, I aim to untangle the processes by which the Arctic and the experiences of Arctic exploration were created and reconstructed within the confines of specific visions of what it meant to be an authoritative observer, as seen through the travel narratives. In doing so, I put aside what explorers and organizers hoped to emphasize, namely the "moment of discovery." If we take away the claims to geographical discovery and scientific achievements, it becomes clearer how Arctic exploration was never simply the work of individual figures. This deconstruction of the persona of the Arctic explorer—the white male hero—is, I believe, an important part of understanding the relationship between imperialism and field science in the nineteenth century. Second, I aim to counter the traditional Eurocentric focus by highlighting the inherent international nature of Arctic exploration.

In the following four chapters, I examine the making and communicating of knowledge about the Arctic between 1818 and the First IPY through a study of travel literature in the Danish, British, and Canadian contexts. This book is not a study of how scientific achievements in the Arctic contributed to the disciplinary formation of scientific fields in the metropole. I hope to show a different story. I am concerned with the practices of writing the Arctic experience, especially the relationship between science and the strategies for constructing a trustworthy narrative voice. I focus on the intersection of science and print to highlight the role of exploration in shaping nineteenth-century science, and reveal changes in

ideas about what it meant to be an authoritative observer of natural phenomena. Such shifts were linked to tensions in imperial ambitions, national identities, and international collaborations. I combine four broad historiographical themes in order to complicate our understanding of scientific practices in the Arctic and the various sociopolitical factors that shaped that construction: the intersection of imperialism and science, the identity of the explorer, the role of travel narratives in shaping knowledge about the Arctic, and the significance of applying transnational methods to what had typically been perceived as nationalistic ventures. I will show that European and Euro-American perceptions of the Arctic, scientific practices in the Arctic, and the character of the Arctic explorer were all constructed simultaneously through the narratives and by the reception of their accounts.

IMPERIALISM, INDIGENEITY, AND SCIENCE

To tell the story of science in the Arctic, we have to engage with European and North American imperial practices and policies. The historical relationship between imperialism, science, and international collaboration is complicated and extremely violent. As with other European and North American imperial ventures throughout the world, explorers in the Arctic claimed and discovered areas that were already inhabited.9 Although a general survey of historical accounts might give the impression that Arctic exploration was mainly the result of the zeal and bravery of a few heroic men, these so-called explorers were never alone on the ice. The success of expeditions fundamentally relied on the help of Indigenous peoples. This labor included, but was not limited to, gathering food, building shelter, and finding necessary resources such as fuels. Their assistance as guides, translators, and dogsled drivers was equally important. This part of the interactions between Indigenous peoples and the European and Euro-American explorers was usually acknowledged explicitly in travel narratives, with one major caveat: the support was presented as a type of manual labor that was nonessential to the official duties of the expeditions.

What the explorers hid from their public accounts was the fact that they drew heavily on Indigenous knowledge about the Arctic and relied on their expertise to fulfill many of the official duties of the expeditions. These duties were broad in scope and ranged from geographical surveying to the collection of natural history specimens. European and Euro-American knowledge was transformed both conceptually and empirically by Indigenous knowledge; however, this was not

a simple process of information transfer between two separate, binary groups. I draw in particular on the insights of the historical geographers Felix Driver and Lowri Jones, who showed in their Hidden Histories of Exploration exhibition at the Royal Geographical Society (2009) that exploration knowledge at its core was the product of labor that was coproduced by Europeans and extra-Europeans. It is useful to think of this coproduction of knowledge as taking place in what the historian Mary Louise Pratt has termed the "contact zone." The contact zone, Pratt argues, is "the space in which peoples geographically and historically separated come into contact with each other and establish on-going relations, usually involving conditions of coercion, radical inequality, and intractable conflict... often within radically asymmetrical relations of power." Providing a similar analysis of encounters, the historian Stuart Schwartz has argued that an "implicit ethnography" existed within encounters during European expansion. It was ethnography, he argues, because understanding the "other" is the product of observing, reporting, and reflecting, which in turn also shape understandings of the self. 10 Reports of encounters therefore, tell us both about the observer and the observed. As I show throughout the case studies in this book, many explorers were highly attuned to their reliance on the labor of Indigenous peoples. Any power dynamic or personal relationship established in the contact zone was continually renegotiated at different points during the expeditions. This is especially pertinent when studying the Arctic, where explorations, colonialism, and scientific pursuits were characterized both by friendly collaboration, indifference, and extreme coercion and exploitation.

Just as there is no unified concept of "the local," so there is also no one singular colonial culture, discourse, or experience. This is particularly significant because cross-cultural encounters and their representations were inherently tied up with preconceived perceptions that were culturally and temporally specific. A unifying feature is that exploration was part of the process of possessing and tracing the physical landscape for imperial purposes. In addition, bringing to the fore the financial considerations involved in expeditions organized by, or in conjunction with, trading companies, helps to elucidate the differences and similarities between expeditions organized by different types of patrons. This includes those organized by trading companies and private funders, where the potential or desire for financial gain was entangled with scientific investigations in complicated ways. Financial considerations were hard to overlook, as the Arctic afforded—or appeared to afford—opportunities to exploit natural resources for economic gain. Finding a Northwest Passage was also grounded, at

least initially, in financial concerns, as it potentially could provide an important trading route to the Pacific.

Ownership, right to resources, and potential trading routes were main motivators in the organization of many Arctic expeditions. As the Kongelige Grønlandske Handel (KGH) worked with the Danish Crown, the Hudson's Bay Company (HBC) collaborated with the British Navy to survey the North American Arctic in overland expeditions. While Britain was not experiencing wars within its own borders, the British Empire was engaged in conflicts throughout the world, including, but not limited to, the First Opium War (1839–42) and the First (1839–1842) and Second (1848–49) Anglo-Afghan Wars. There were also conflict and political unrest in Canada. In 1837 there were rebellions in both Lower Canada (present-day Quebec) and Upper Canada (present-day Ontario). While the British government defeated the rebellions, they ultimately led to greater autonomy in the region, and in 1841 Lower and Upper Canada were combined under the United Province of Canada. In Canada science in the Arctic was a way to establish sovereignty in the region and to confirm and build a Canadian national settler identity. In particular, the historian of science Trevor Levere has emphasized the significance of national concerns, international cooperation, and national rivalries in sending out explorers to the Arctic in the British-Canadian context.¹² The HBC was an important patron of science, as scientific activity could be strategically framed as a way of bettering its troubled reputation. For example, the HBC was involved with learned societies in Canada, Britain, and the United States and used scientific field research as a way to strengthen its reputation. This countered the many critiques that questioned the validity of the HBC's trading monopoly, as well as its treatment of Indigenous peoples. We see the same with the KGH in Greenland, where the trading company supported and controlled explorers and settlers. The KGH and the HBC both enjoyed a monopoly on trade, and their efforts to maintain this control influenced the trajectory of several Arctic explorations. British North America covered a vastly larger area than the United Province of Canada, from the Atlantic to the Great Lakes, while the HBC still enjoyed a trade monopoly and control over Ruperts Land. The areas of interest in the search for a Northwest Passage, specifically north of Davis Strait and Baffin Bay, were outside the authority of the HBC. In these expeditions, the company and the Royal Navy explorers relied on the assistance of fur traders and Indigenous peoples. Similarly, the overland and littoral expeditions backed by the Danish Crown and the KGH extended into areas outside of their direct authority.13

In the Danish context, discovering traces of the lost Nordic tribe was a key concern at the beginning of the nineteenth century. 14 Proof of their continued existence would support the Danish claim to the area, something the newly sovereign Norway contested. In contrast to Britain's enthusiasm for the Arctic during the first half of the nineteenth century, the Danish Crown and the KGH had difficulties organizing expeditions for any purpose, be it geographical or scientific, because there was an acute lack of funds available in Denmark at that time. This financial predicament spurred interest in cataloging the potential resources in Greenland, which could be exploited for financial gain. For the Danish Crown and the KGH, as for the HBC, the links between knowledge about the Arctic and economic and imperial concerns are evident. The HBC struggled with a large debt and a new organizational structure in the period following the merger between the HBC and the North-West Company (NWC).¹⁵ Similarly, as Denmark had suffered a great economic and geographical loss following the Napoleonic Wars, the prospect of extracting resources made field science a high priority alongside the trade of natural resources. The surveys of Greenland were linked with Danish nation-building in other ways. As in the British context, cataloging the empire, knowing the land and the people, meant collecting natural history specimens. The Danish Crown requested that as many specimens as possible be sent to the Botanical Garden (Botanisk Have) and the Royal Museum (Kongelige Museum) in Copenhagen, and for use in projects that cataloged the natural history of the Danish Empire in the eighteenth and nineteenth centuries, such as Flora Danica.16

Travel narratives typically included images of the landscape, the flora and fauna, natural phenomena such as the aurora borealis, and Indigenous peoples. Visual representations of the Arctic have been the focus of recent scholarly literature. Such studies show the significance of visual imagery in shaping conceptions of the Arctic as a space, and focus on both images in books and periodicals, as well as the large and popular Arctic panoramas that were on display throughout the nineteenth century. Arctic explorers, as well as those in other regions of the world, surveyed and mapped unknown lands, and visual imagery including maps played a key role in making the foreign tangible. I am particularly informed by the work of the historian Daniela Bleichmar, who has shown how scientific images reveal the intimate relationship between knowing and making visible within the Spanish imperial project. Bleichmar developed the concept of "visual epistemology," which emphasizes how observation was a trained and highly situated practice. Drawing on these insights, I show throughout this

book how illustrations, as well as highly visualized language, were tools through which Arctic travelers simultaneously affirmed their imperial rights to the land and themselves as authoritative observers. The process of making the Arctic visible was also a process of erasure. For many European and Euro-American explorers, rendering invisible the work of Indigenous peoples was part of their own strategies for positioning themselves as experts on the Arctic regions. I argue that this strategy of erasure, or rescripting of labor, formed part of what Jane Burbank and Frederick Cooper have termed the imperial "repertoires of power," for establishing and legitimizing imperial authority. The case studies in the following chapters all show that when considered within their imperial context, travel narratives reveal significant and overarching geopolitical considerations. The way this was represented relied heavily on the framing of the explorer.

THE EXPLORER

Who was an authoritative observer of Arctic phenomena? Who was the Arctic explorer? In answering these questions, I take my starting point with the historian of science Janet Browne, who has identified three main categories of traveling naturalists and collectors: 20 freelance and independent entrepreneurs, navy or military employees, and those employed to collect natural history specimens. I also examine narratives from additional categories of Arctic explorers, including Indigenous peoples, missionaries, private entrepreneurs who relied on patronage, and those employed by trading companies. Although settlers such as missionaries were engaged in different activities than those employed on exploratory missions, they formed an influential part of the imperial projects in the Arctic. There is also the changing recombination of such categories, which serves to illustrate how narrative choices and their effectiveness were linked to the identity of explorers and organizing bodies. Uncertainty, and how it influenced the nature of the Arctic expedition, was highly situated. Factors such as the organizers, the national contexts, narrative style, as well as what the historian $\,$ of anthropology Henrika Kuklick has called the "personal equations," were all part of shaping the practice and perception of nineteenth-century fieldwork. The identity of the travelers and their social circumstances were central to shaping the nature of expeditions, and as the authors of Travels into Print have observed, "Questions of epistemology and truth telling in print were ineluctably linked to the status of one's informant, the social standing of the author, or the warrant by

association that came with being officially sanctioned to have undertaken the travel or the exploration by a government or a scientific body."²¹

The question of who is an explorer and what is a narrative points back to our understanding of travel. Notably, the historian of anthropology James Clifford has observed that the concept of travel is a complex range of experiences. He proposes that "to see fieldwork as a travel practice highlights embodied activities pursued in historically and politically defined places," thus emphasizing the intersecting routes and reconfigurations of borders (intellectual and spatial) for the traveling fieldworker. It is therefore not surprising that it becomes possible to expand our perception of who is an explorer when we reconsider what it means to travel. Yet this has not been consistently done for the Arctic context.²² Especially when it comes to studies of scientific knowledge-making in the Arctic, the historiographical focus has overwhelmingly remained on specific European and Euro-American explorers. But Arctic Indigenous peoples working as part of expeditions played a key role in these ventures. They not only facilitated exploration and scientific research, but actively undertook this work as well. In addition, Arctic Indigenous peoples working as part of European and Euro-American ventures were often also strangers to the surveyed lands and the peoples living there. When we reconsider who is an explorer, it opens up new perspectives, both exciting and challenging, to otherwise well-known stories.

The situatedness of the perception of who was an authoritative observer of the Arctic is particularly evident in the "heroic Arctic explorer" trope. 23 Kuklick has further argued that perceptions of fieldwork and the associated physical ardor changed from dirty and ungentlemanly to heroic. This assumes that those working in the field were part of a lower social status than the gentlemen-scientists who made use of the collected data and specimens. However, this characterization is problematic, especially when applied to the fieldwork of Arctic explorers.²⁴ Although this type of fieldwork was arduous, the explorer was framed as a gentleman who overcame danger and adversity to command nature at his will. But perceptions of gentlemanliness, heroism, and expertise were fickle. The strategies that allowed explorers to portray themselves in this desired way could have unexpected consequences. One such strategy was references to direct observation. An appeal to firsthand experience as a way of generating credibility was utilized from the first expeditions following the Napoleonic Wars, but the role of fieldwork in the Arctic was complex. In the British context, the explorer was described in heroic terms from the beginning of the nineteenth century. It is important to further consider the differences in

organization structure of expeditions. The HBC and the KGH primarily undertook overland surveying ventures, while the ones organized by the British Navy were both overland and nautical. The format typically adhered to in the expeditions organized by the British Admiralty consisted of a large crew and two vessels. The ships were furnished with material items to make the journey more comfortable and a large selection of expensive scientific equipment, all of which were part of the construct of the officers' gentlemanly, or heroic, status.

In the Danish context, and with the expeditions organized by the HBC, the explorer was a different sort of fieldworker. Smaller-scale sled expeditions required a different approach, one which drew heavily on the insights and assistance of Indigenous peoples. This was particularly the case with those expeditions that to a larger degree combined multiple modes of traveling where we see the distinction between Kuklick's fieldworker and gentleman break down. That is not to say that the differences in exploratory format are irrelevant—to the contrary, they are essential. Differences in the mode of exploration shaped everything relating to the ventures, including the portrayal of the explorer and the science they produced, which is why a comparison of such differences reveals the complex role of fieldwork in identity-making. While there is no single answer to the question of who is an Arctic explorer, it is clear that the style of exploration and the organizing bodies involved had a significant impact on expedition formats and the resulting framing of their experiences and discoveries. Writing a travel narrative was an opportunity to present your expedition in a desired way—and to gather support for future projects. The way you framed yourself before, during, and after the expeditions was central in shaping the long-term success of your venture. Language and symbolism formed, and was shaped by, the construction of personal identities and scientific research through the travel narratives.

NARRATIVES

Opening up the categories of exploration and travel literature to include many types of travelers and their accounts decenters the moment of discovery, or lack thereof. This allows us to bring to the fore key issues of authorship and the function and construction of scientific knowledge in the Arctic. As the historians Elizabeth Bohls and Ian Duncan have noted, "Travel writing as a form or genre is not easy to pin down." Just as nineteenth-century readers encountered the Arctic through multiple types of firsthand accounts, I allow for a broad range

of difference in the stylistic and narrative structure of travel narratives. This challenges our notions of who constituted an authoritative Arctic writer and how this impacted the wider questions about veracity and the production of scientific knowledge in the Arctic. The authors of *Travels into Print* argue that "travel writing is an analytical and interpretative category whose study involves the textual and stylistic analysis of works of travel and of exploration and, particularly of authorship, the style of writing, its underlying purpose, and the power of such writing to delimit, explain, or misrepresent the objects of its attention." Drawing our attention to the complex composition of nineteenth-century travel narratives, it speaks to the broad influence of travel writing, in all its forms.²⁵

Travel narratives were closely tied to concerns over imperial authority in the Arctic. I draw on the historian Mary Louise Pratt's seminal work, which shows how European travel literature from the extra-European context visualized and shaped relations and knowledge, and how the identity of the explorer influenced the choice of narrative. Similarly, the editors of Politics, Identity, and Mobility in Travel Writing have noted that "we could view travel narratives as renegotiating cultural boundaries even while they actively establish such boundaries."26 This emphasizes how travel narratives, rather than simply accounting for a voyage, are inherently political: they are not only linked to obvious geopolitical issues, but also to individual politics. As was noted in Fraser's Magazine in 1853, "Good travel-writing requires a certain sort of egotism."²⁷ Career ambition, friendship, scientific competition, love—those were but some of the personal aspects that shaped the narratives. Issues of boundaries and politics emerge throughout this book, from the charting of the Arctic coastlines (a very physical boundary) to the choices of narrative format for the travel accounts (an intellectual boundary). There were also boundaries between truth and falsehood.

Although I am not concerned with distinguishing truth from falsehood, nineteenth-century readers of Arctic explorations were. The historian of science Steven Shapin's examination of what it means to present yourself as truthful in relation to the organization of science has been particularly influential in how I treat this issue. As Shapin wrote in *The Scientific Life*, he sought to "describe who truth-speakers are in late modernity: what kinds of people, with what kind of attributed and acted-upon characteristics, are the bearers of our most potent forms of knowledge." Drawing on this point, I show throughout the book that explorers sought, and often failed, to construct their narratives in such a way that their observations were perceived as credible. Perceptions of truthfulness were crucial. However, what constituted a trustworthy account was not straightforward, and

the self-representation of Arctic explorers as authoritative and truthful observers of Arctic phenomena was not always effective. A key feature of travel writing as a genre was that authors read each other, repeating, commenting upon, and adjusting each other's points. This dialogue between the author and past explorers could work both to further or discredit cultural and scientific authority. It is useful to consider how in *Leviathan and the Air-Pump* (1985), Steven Shapin and Simon Schaffer developed the concept of virtual witnessing which "involves the production in a reader's mind of such an image of an experimental scene as obviates the necessity for either direct witness or replication." As they show, choices regarding knowledge production and authority within a research field was linked with the self-portrayal of the natural philosopher as "objective" and "modest." Such considerations were also present for Arctic explorers.

Printed media were important sources through which information such as news, gossip, almanacs, and advertisements spread, including those related to the organization and results of expeditions. The representation of the Arctic in the nineteenth-century British periodical press has recently become the subject of scholarly interest, notably in the important work of historians and literary scholars such as Adriana Craciun, Jen Hill, and Janice Cavell.²⁹ This growing scholarship has drawn our attention to the many varied expressions of the Arctic project in print form, from elite nineteenth-century literature to the general periodical press. The British periodical press underwent significant transformations in the middle of the nineteenth century. It grew rapidly as new types of publications emerged. In Victorian England scientific news was of particular interest. Significantly, the periodical press provided a battleground for questions of authority, status, and cultural elitism in Victorian society. The transformations that took place in British science during the nineteenth century were rooted in a combination of several factors, such as the emergence of a growing reading audience, changes in paper taxation, developments in print technologies, and the telegraph.³⁰ As the editors of Science in the Nineteenth-Century Periodical noted, "From the perspective of readers, science was omnipresent, and general periodicals probably played a far greater role than books in shaping the public understanding of new scientific discoveries, theories and practices."31 The British periodical press was highly significant in shaping knowledge and opinions about the Arctic and future Arctic expeditions. This draws our attention to the fact that news about Arctic voyages had circulated in the press prior to the publication of Arctic narratives and highlights the interplay that existed between book and periodical. Narratives were not constructed or read in a vacuum.

Drawing these perspectives together, I show throughout this book that the process of writing travel narratives was political, involved more figures than the listed author, and influenced the textual construction of Arctic science. This brings us to periodization and transnational comparisons. The historians of science Hans Henrik Hjermitslev and Casper Andersen have pointed to an important difference between the British and Danish contexts: in Britain the cheaper forms of printed materials, including popular science publications, appeared in the first half of the nineteenth century; in Denmark they did not appear until the second half of the century.³² While Barrow was lobbying to organize another expedition, continental Europe was experiencing a period of unrest following the French July Revolution in 1830. Charles X was forced to abdicate, and uprisings throughout Europe, including in Poland, Italy, and Belgium, followed the July Revolution. In Denmark there was widespread dissatisfaction, as only around 2.8 percent of the population had the right to vote. King Frederik VI made some concessions to requests for democratization with the establishment of four Assemblies of the Estates of the Realm introduced by the laws of May 28, 1831, and May 15, 1834. The political restructuring in Denmark also extended to the border with Germany, the First Schleswig War between 1848 and 1851. This war concerned the area of southern Denmark and northern Germany called the Duchies of Schleswig and Holstein. While Denmark officially won the war, the issue was far from resolved, and it was reignited some fifteen years later with the Second Schleswig War.

Democratization and freedom of the press went hand in hand. While the context for scientific publishing was different in the national contexts, there is an important similarity: the increasing use of the periodical press as part of establishing scientific and cultural authority—in spite of war and restrictions on freedom of the press. Although the Danish Assemblies of the Estates of the Realm made it possible for journalists to discuss politics more critically, freedom of the press was still severely restricted under the Danish absolute monarchy, and Frederik VI imposed more and harsher restrictions, which led to the formation of the Society for the Proper Use of Freedom of the Press. The society played a key role in a series of reforms throughout the 1840s. The political unrest culminated on June 5, 1849, when the new constitution (*Grundlov*) established a constitutional monarchy. The establishment of the Danish constitution was in many ways a response to the 1848 Revolution in France where King Louis Philippe abdicated and the French Second Republic was founded.³³

As in the British and Danish contexts, a range of factors influenced the

growth of scientific and general publishing in nineteenth-century Canada, including changes in print technologies, rapid transatlantic and railway services, and increased literacy. While I focus on the legacies of British imperialism in Canada, the French context for Canada should not be forgotten, especially as we consider the plurality of imperial cultures and languages. The context for science and scientific publishing in Canada in the nineteenth century was shaped by the political turmoil of that period. While science was a popular topic in the periodical press in Britain, both in specialized journals and general newspapers, this was not the case in Canada. In the first decades of the nineteenth century there were only a handful of English-language newspapers in Canada, with numbers expanding rapidly in the 1840s and 1850s. Although there were hundreds of newspapers and specialized periodicals in print in the second half of the nineteenth century in Canada, only a few of these were dedicated to scientific topics. ³⁴

The differences in development of cheaper forms of printed materials and the general reader for science in each country shaped their publication and reception of travel narratives. Even within Western Europe there is no meaningful unified periodization of developments in print culture and science. It would therefore be a mistake to apply British concepts of a communications revolution to other countries, thus highlighting the usefulness of a comparative, transnational, analytical approach.

A TRANSNATIONAL PERSPECTIVE

Arctic explorations were inherently transnational in nature. Explorers from different nations read and commented upon each other's narratives, and expeditions often included assistants from other countries, in addition to Indigenous peoples hired in the Arctic. The Arctic is a vast polar region, currently considered to spread across Canada, the United States, Russia, Denmark, Sweden, Norway, Finland, Iceland, and the Arctic Ocean. European and Euro-American understandings of the Arctic changed throughout the nineteenth century. In this book I focus on Danish, British, and English-Canadian expeditions to Greenland and the Canadian Arctic, with references to select American expeditions. Although Denmark has a long historical presence in the Arctic and is one of the current eight Arctic states in the Arctic Council, there is a relatively small body of critical research on this history. I believe that a primary reason the Euro-American and British presence there has been considered of more historical significance than the Danish is due to the differences in exploratory and narrative strategies

favored in each country. At the same time, while the Euro-American and British context has been thoroughly engaged with the literature, it has almost exclusively been in the shape of nation-focused accounts of Arctic exploration. Yet Arctic explorations were international projects, relying on the support of peoples and organizations from different nations, and they contributed to an international body of research in and about the Arctic.

The decision to focus this book on the Danish, British, and English-Canadian expeditions to Greenland and the Canadian Arctic is not unproblematic; for example, I do not engage with the French-Canadian or Russian historical contexts. My aim in this book is to show how the stories of Arctic exploration and scientific fieldwork, some of which are well known and others less so, take on new meanings when considered as part of their international context, rather than as national projects. There had been long-standing cooperation and scientific conversations between British, Danish, and English-Canadian explorers and settlers, and much of this took place in what is now Greenland and Arctic Canada. For example, British expeditions to the Arctic often relied on official Danish government support, as they harbored in and gained supplies from Danish settlements in Greenland. Because this contact was significant and continued throughout the nineteenth century, the Danish-British focus is a particularly useful backdrop to consider why specific explorers and expeditions have gained prominence in the retelling of Arctic history.

There is a large body of recent literature on transnational history that addresses the methodological advantages and difficulties of undertaking transnational research. Notably, the historians Michael Bravo and Sverker Sörlin have illustrated how limiting the study of scientific practices to one national context constricts our understanding of Arctic science. They observe that there was a difference in the northern narratives in Denmark and Sweden, as "the Danish approach was more spiritual, and spearheaded by missionaries, whereas in Sweden taxation, science, and even forced labor were the instruments. The northern narrative of Sweden, as a result of this, became much more concerned with resources and wealth, which was yet another similarity with the British imperial project."35 Because of this difference in emphasis between Denmark and Sweden (and Britain, which they argue was similar to Sweden), there was also a difference in the perception of the Indigenous populations. The Danes held more positive attitudes toward Indigenous Greenlanders than Swedes, shaped by a paternalistic concern in combination with perceptions of guilt over their treatment. The transnational approach taken by Bravo and Sörlin is similar to

that outlined in the American Historical Review's Conversation column "On Transnational History," which understands transnational history as a conceptual tool that allows historians to think differently—most importantly, to think about and follow movements, flows, and circulations of peoples, ideas, knowledge, and objects. Compared with other types of historical methods, such as world history, transnational history multiplies the focus from the state to many types of actors moving across boundaries.

In writing about the many methods of studying transnational history, the historian Patricia Seed observed that "transnational history has multiplied the foci of research from the state alone to a variety of independent transnational economic actors—individuals, communities, migrants, or organizations that may have played independent roles in the economic growth of a city, state, or region."37 Trading routes connected the oceanic spaces but exchanges were not limited to commercial goods or economic concerns. For example, the historian Sugata Bose has argued for a historical approach that moves beyond a focus on trade relations to elucidate the economic dimensions of interregional integration. By broadening the focus to include topics such as geopolitical, military, cultural, and religious issues, Bose sees oceans within their imperial context as an interregional arena. From this perspective, oceans become something between the local and the global, consisting of "a hundred horizons, not one, of many hues and colours." ³⁸ Greenland and Denmark were connected by a steady flow of commercial goods, as well as ideas, experiences, and people. The character of this interconnectedness was more established in the case of Greenland and Denmark, as well as in the HBC territories, than among Britain and their explored Arctic territories. While missionaries and employees in the trading companies did not live permanently in the Arctic, they were parts of networks that had long-term settlements in the territories they explored. By contrast, the purpose of the British Royal Navy-sponsored expeditions was to explore and return home to Britain.

The extent to which the imperial metropole was able to control the results of expeditions in the periphery was limited. This was the case both in the Danish and British imperial contexts, though there were clear differences in how the organizing bodies attempted to lower the uncertainty of the Arctic as a field site for scientific research. The identity of explorers both influenced and was shaped by the imperial context of exploration. Although many historians have examined Arctic explorations, in particular those associated with John Franklin (1786–1847), there is still much to be gained by studying the scientific practices of

Arctic explorers and their repertoires for establishing knowledge claims in their narratives. I combine the four broad historiographical themes outlined above the intersection of imperialism and science, exploration identities, studies of travel writing, and transnational historical methods—to shed new light on the function of travel narratives as scientific documents and the formation of fieldbased science in the nineteenth century within the nexus of imperial expansionism, international competition, and attempted cooperation in the icy north. This complicates our understanding of scientific research in the Arctic and the various sociopolitical factors that shaped that construction. Throughout the book, I compare and contrast the Danish, British, and Canadian presence in the Arctic, while also touching on the perceptions and attitudes toward international collaborations. In all cases I argue that a more comprehensive understanding of the Arctic as a field site can be developed through a transnational perspective on travel narratives and the identity of the Arctic explorer. In doing so, I offer a new way of looking at narratives, as not simply an account of a voyage, but as a way to unpack the inherent international and highly fraught nature of nineteenth-century Arctic exploration and scientific fieldwork.

STRUCTURE OF THE BOOK

The period between 1818 and 1883 was shaped by several key transitions in Arctic explorations. In order to avoid the temptation (or risk) of writing an exhaustive (or exhausting) account of all nineteenth-century Arctic expeditions, I have centered each chapter around a selection of Arctic explorations and their narratives. The disappearance of Franklin's expedition was a transformative event, but it was not the only one, and not necessarily the most significant one either. For this reason I do not conclude this study with the last official British expedition in search of the *Erebus* and *Terror*, but instead with the First IPY in 1882–1883. I examine the narratives from these expeditions, and depending on the one in question, discuss its publication and reception in both general and specialized periodicals as it relates to the construction and practice of science in the Arctic. In this way I have adopted an approach to studies of the nineteenth-century Arctic that can be described as fitting between those that focus more exclusively on the expeditions' scientific results and those that put the emphasis on the textual and visual representations of the Arctic.

Each chapter has three main case studies that are roughly chronologically organized. I have sought to balance the focus between the British, English-speaking

Canadian, and Danish contexts, and I have chosen expeditions and explorers that provide a certain level of thematic continuity across an otherwise diverse set of examples. My aim has been to trace similarities and differences in scientific practices, attitudes toward exploration and colonial expansion, and the ways scientific knowledge was communicated in multiple national contexts. I point out four major transitions: The theme of Chapter 1 is beginnings, but it could also have been "uncertainty." The radical uncertainty of the early expeditions extended to the Arctic explorers themselves, as narrative strategies for establishing scientific and cultural authority through the travel accounts were negotiated. The theme of Chapter 2 is economics, where I consider the interconnectedness of commercial goods, ideas, experiences, and people, and examine the way the tensions over financial gain impacted the nature of Arctic explorations and the perceptions of the Arctic explorer. Opportunism is the theme of Chapter 3, reflecting the economist Oliver Williamson's famous description of opportunism as "self-interest seeking with guile." His discussion of opportunism and economic actors is similar to the "Opportunism-in-Context" Model developed by the philosopher Andrew Pickering which draws attention to how researchers made use of their available resources in different contexts. 39 This emphasis on the role of opportunism can usefully be extended to Arctic exploration in the post-Franklin era. With the disappearance of John Franklin's expedition, the number of expeditions multiplied. Searching for his expedition was the opportunity, but the goal was, as before, intertwined with economy, glory, and power. The many search missions were followed by Arctic exploration fatigue in Britain, while other nations began to stamp their authority on the region. The theme of Chapter 4 is therefore internationalism, as I show how the transformations in imperial authority and attempts at international collaboration with the First IPY challenged old perceptions of the Arctic explorer and scientific research in the Arctic.

Chapter 1 shows the disunity of Arctic science in the early part of the nine-teenth century, bringing out the discord between the desires of figures in the metropole and the reality of explorations in the High North. I focus on the 1818 expedition led by John Ross, William August Graah's voyage to the east coast of Greenland between 1828 and 1829, and John Franklin's Coppermine expedition between 1819 and 1822. In this period British expeditions largely focused on discovering a Northwest Passage, while a key aim of the Danish expeditions was to establish evidence for a historical Danish presence in Greenland to support its often-disputed territorial claims to the region. Despite this difference,

the expeditions had a central, overlapping feature: a discrepancy between the originally stated aims of the expeditions and what they actually achieved. While figures such as John Barrow played a key role in determining the makeup of the British voyages and the career trajectory of the British explorers, there were limitations to this control from the metropole. This was also the case in the Danish context. The chapter shows that the nature of scientific research in the Arctic in the early years following the Napoleonic Wars both created and was shaped by the uncertainty associated with Arctic expeditions, the unstable nature of intellectual and cultural authority, choices of narrative styles in the travel literature, encounters with Indigenous populations, and the persona of the Arctic explorer.

In the British context, the disillusionment with the search for the Northwest Passage opened up opportunities for other players to take center stage. Lack of funds created a similar situation in the Danish context. Chapter 2 looks at four expeditions that were funded and organized in the 1830s outside the realm of government: John Ross's second and last expedition to the Arctic between 1829 and 1833, Peter Warren Dease and Thomas Simpson's expedition organized by the Hudson's Bay Company between 1836 and 1839, and accounts by the Danish pastor Johan Christian Wilhelm Funch and an anonymous Danish woman missionary, both in Greenland in the 1830s. A key theme is the ambivalent relationship among religion, commerce, and science, and how this influenced the prioritization of formal scientific inquiry and the use of expensive equipment such as chronometers. The chapter shows that there was tension between the types of scientific results that were expected from exploratory missions and the focus of the trading companies and religious missions.

By 1844, after numerous failed attempts, the second secretary to the British Admiralty, John Barrow, was eager to promote one last expedition in search of the Northwest Passage. John Franklin volunteered, and he left England with his crew aboard the *Erebus* and *Terror* in 1845. The disappearance of Franklin's expedition changed the context for subsequent Arctic expeditions. The vagueness of the goal, finding the lost Franklin expedition, allowed for more flexibility in terms of what activities could be conducted during these search missions. Their official goal generated more opportunities for Arctic exploration. Yet it appears that this was not always the primary motivator behind them. In Chapter 3 I interrogate the nature of Arctic science when carried out under the added pressure of finding the Franklin expedition, with a focus on John Rae and John Richardson's expedition between 1848 and 1849, Rae's later report that Franklin's men had resorted to cannibalism, and Carl Petersen's participation in the 1857

search under the command of Francis Leopold McClintock. The change in primary goals challenged previously held conventions for what Arctic expeditions should accomplish. A key theme throughout this chapter is the stark differences in the reaction and response to Franklin's expedition between Denmark and Britain and how this influenced the production and representation of scientific research during the expeditions.

The period between McClintock's expedition and the First IPY was characterized by a transition in colonial power in the Arctic, which influenced all aspects of how Arctic expeditions were carried out, from their style to their interactions with Indigenous populations. Chapter 4 shows how nationalistic concerns were also linked to apprehensions about changes in the Arctic field site and the identity of the Arctic explorer. I examine these shifts through the Indigenous Greenlandic explorer Suersaq's participation in George Nares's expedition between 1875 and 1876, the establishment of the journal Meddelelser om Grønland in 1879 (with a focus on the expeditions led by Knud Johannes Vogelius Steenstrup and Jens Arnold Diderich Jensen in the late 1870s), and the First IPY in 1882–1883. My main focus for the IPY is on the British-Canadian contribution—the polar station at Fort Rae—in comparison with the American contributions to highlight the relationship between changes in Arctic fieldwork and narrative practices. In this way the chapter brings to the fore the connections between the cautious international cooperation in this period of transition of imperial authority in the Arctic, changes in scientific practice, and the identity of the Arctic explorer.

Altogether this book is concerned with questions about what constituted scientific research, who were considered scientific practitioners, how this vast area that we today understand as the North American and Greenlandic Arctic was understood in the nineteenth century, and the way this knowledge and definitions changed in time and place. By approaching surveying in its broadest sense—as the ordering and quantifying of nature through travel as a way to conceptualize the scientific practices of the Arctic explorers—it is the aim of this book to show how abstract notions about the Arctic became tangible in the nineteenth century.