Kingdom), and the European Union interfere with traditional notions of state sovereignty are well covered here. These chapters are further embedded in discussions of how involvement of these actors has serious repercussions on the complex governance regime in place for the Arctic and how international law and institutional settings like the Arctic Council and the United Nations system co-evolve and adapt. Reading these chapters is highly recommended. If one was to look for drawbacks of this third section at all, it would have been good to re-connect this part to the theory chapters of Part I and to make explicit the theoretical contribution that this book has to offer.

All things considered, this book will be of great value to researchers of Arctic studies and international relations. Each chapter is easily accessible to get a thorough assessment of the respective topic. Together, this is a rewarding compendium about sovereignty and international relations in the Arctic. Good to have this book close at hand. (Sebastian Knecht, Freie Universität Berlin, Ihnestrasse 26, 14195 Berlin, Germany (s.knecht@transnationalstudies.eu).)

ANTARCTICA AND THE ARCTIC CIRCLE: A GEOGRAPHIC ENCYCLOPEDIA OF THE EARTH'S POLAR REGIONS. 2 vols. Andrew J. Hund (editor). 2014. Santa Barbara: ABC-Clio. xxxvi + 848 p, illustrated, hardcover. ISBN 978-1-61069-392-9. £119.00; US$189.00.
doi:10.1017/S0032247415000157

I confess: I was sceptical about this two-volume encyclopaedia from the moment I saw the title. Surely half of it wasn't about the Arctic Circle, the imaginary line at approximately 66°33'N marking the latitude above which the sun does not rise on Midwinter Day and does not set on Midsummer Day. Could the book actually have a mistake in the title? Fortunately – or unfortunately depending on one's perspective – the mistake was not in the title, but rather in the book's basic definitions. For the editor claims that the Arctic Circle is, in fact, all of the region north of that line, an area that most of the experts I have met during 30 years of conducting research about the polar regions call simply 'the Arctic.'

This begs the question of why the title therefore didn't address the Antarctic Circle, given that its definition is much the same as for that line in the north. And when I write much the same, I mean it, as the entry for the Antarctic Circle (page 28) states: 'The 66.5° S latitude is considered the southernmost boundary of the Antarctic Circle.' I don't know if this was cut and pasted from the Arctic Circle entry, but clearly the Antarctic is not normally defined as the area north of the Antarctic Circle!

There are numerous perplexing questions about this encyclopaedia. First and foremost is: where in the list of contributors are most of the world-respected polar experts? Certainly there are some extremely distinguished scientists, including Marthán Bester, John Cooper, Lawrence Duffy, and Valery Lukin. But, to look at the area I know best, the history entries seem to have avoided the major names in the polar world, such as William Barr, Tim Baughman, Susan Barr, Alan Gurney, Roland Huntford, Bob Bryce, Ian R. Stone, Ann Savours, Max Jones, or Erki Tammiksaar. Instead, a physicist wrote the entries for the *Discovery* Expedition and the Scottish National Antarctic Expedition; the editor, a medical sociologist, wrote the entries for the Heroic Age of Antarctic Exploration and Ernest Shackleton; and a maritime historian with virtually no publishing background in the Antarctic wrote the entries for the Australasian Antarctic Expedition, the *Nimrod* Expedition, the Ross Sea Party, and Grytviken.

Equally mystifying is the selection of entries. There is, for example, an entry for Shackleton but not Robert Falcon Scott or Douglas Mawson, for Roald Amundsen but not Fridtjof Nansen, for James Clark Ross but not John Franklin, and for Bob Bartlett but not John King Davis. And although there are entries on the Alfred Wegener Institute, the Norsk Polarinstitutt and the Netherlands' Dirck Gerritsz Laboratory, there are no entries for the Scott Polar Research Institute, the British Antarctic Survey, or the Australian Antarctic Division.

Where the encyclopaedia does hit its stride is in its coverage of native Arctic peoples – for which the editor wrote about half the entries – and the wildlife of both regions. It also has a number of unusual and interesting topics, such as Dinosaurs of Antarctica, Drifting Research Stations in the Arctic Ocean, Ice Worms, and the Lena Massacre of 1912.

But I am no expert in these areas, so I cannot speak to the accuracy of the entries. However, the entries for topics with which I am familiar contain numerous factual errors. For example: that the Northeast Passage was 'not successfully crossed until the early twentieth century' (page xvii) ignores Adolf Erik Nordenskiöld's first navigation of it in *Vega* (1878–80); Amundsen's measurements during his navigation of the Northwest Passage did not confirm 'the location established by James Clark Ross' for the North Magnetic Pole (page 23), but rather showed that the Pole had, in fact, moved north of where it had been in 1831; the British Antarctic Survey was not established in 1962 (page 48), but was simply renamed from the Falkland Islands Dependencies Survey; and the Australasian Antarctic Expedition was not 'mainly financed by the Australian Association for the Advancement of Sciences' (page 122), as the AAAS donated £1000, which was less than the Commonwealth government, three separate Australian states, the British government, and three private individuals. Moreover, Bob Bartlett did not sail *Roosevelt* north of 88° on Peary's final expedition (page 130), but was part of the sledging operation with dogs that took him to 87°48'N before he was ordered by Peary back to the ship, which was at Cape Sheridan on the northeast tip of Ellesmere Island; James Cook did not grow up in Scotland (page 205), but in Yorkshire; the Argentine occupation of South Georgia did not 'end after a couple of days with the recapture of Grytviken' (page 325), but lasted until the island was retaken on 25 April, more than three weeks after Argentine troops moved in; the British Antarctic Expedition's Southern Party did not comprise just Shackleton, Frank Wild, and Eric Marshall (page 336), but also included Jameson Adams; Shackleton's farthest south was not 'just under 100 miles (160 km) shy of the South Pole' (page 336), because the 97 geographical miles from the Pole were equivalent to 112 statute miles or about 180 km; and Mawson was not the first to explore the Shackleton Ice Shelf (page 373) because it was

actually explored by the members of his Western Base under Frank Wild.

These errors – and numerous others that I found – give me concerns about the accuracy of all the entries. Thus, although it is a handsomely produced and bound book, it is not one that I feel I could confidently use as an authoritative source. (Beau Riffenburgh, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER.)

THE ARCTIC IN THE ANTHROPOCENE. EMERGING RESEARCH QUESTIONS. Henry P. Huntington and Stephanie Pfirman (editors). 2014. Washington: National Academies Press. xiii + 210 p, illustrated, softcover. ISBN 978-0-309-30183-1. $58.00.
doi:10.1017/S0032247415000170

For nobody remotely interested in the polar regions or the climate the claim of the Arctic being a 'bellwether for rapid environmental change' (page 16) is unknown. Given the significance of these changes for the global eco- and human systems the Arctic has moved from being a periphery to a focal point of research. To this end, in the first decade of the 21st century groundbreaking research has been conducted, for example in the *Arctic climate impact assessment* or the *Arctic human development report* showing the interconnectedness of the Arctic with the rest of the world while at the same time undergoing changes with a speed unknown in other areas of the world.

The National Research Council, the operating arm of the United States' National Academy of Sciences, in its challenging report *The Arctic in the anthropocene*, conducted by 17 different authors, aims to go beyond the traditional understanding of research in the Arctic based on already produced knowledge. Instead it aims to provide meta-guidance on 'emerging' research questions. To this end, four types of information are tackled to identify these emerging questions: 1. What *we know* about the Arctic, forming the basis of future enquiry. 2. What *we know we need to know* drives current research. 3. What *we think we don't know* (or *what some know that others don't*) contains knowledge that is often overlooked or not frequently shared. And 4. What *we don't know we don't know,* describing the element of surprise and the open mind, leaving sufficient room to be able to tackle future surprises in Arctic developments and research (page 3). To this end, the report notes: 'Our task in this report is to assess what we can do now in Arctic research that is new and to identify those questions that we will regret having ignored if we do not invest in answering them soon' (page 17).

Indeed, this is a very interesting and very valuable approach. The methodology to address the main chapter of the report, the *Emerging research questions*, therefore encompasses five categories that set the scope for the meta-data provided in this report: The 'evolving Arctic' deals with the impacts of reduced sea ice on systems depending on frozen and ground water. The 'hidden Arctic' deals with the boundaries that expand with diminishing ice and what could be irretrievably lost. The 'connected Arctic' appraises Arctic change through a global lens with regard to environmental systems. The 'managed Arctic' in essence does the same politically and socially while the 'undetermined Arctic' addresses human preparedness to abrupt and unexpected changes. Under each of these categories, except for the 'undetermined Arctic', the National Research Council has identified 5–6 questions which it deems crucial in determining future research for the Arctic.

The outcome is a truly multidisciplinary assessment of Arctic research that is certainly of very high interest for all disciplines. While not delving too deeply into the different questions presented, the report could be considered to give advice to researchers engaged in the Arctic Council's working groups. For example, those questions of all categories in which the social dimension is embedded can easily be taken as a hint towards the Arctic Human Development Report II, currently in progress under the Sustainable Development Working Group. Similarly, the natural sciences angle of the research questions could be taken as an incentive to conduct a new Arctic climate impact assessment.

All in all *The Arctic in the anthropocene* is not only relevant and interesting for researchers, but also for students in their early stages of Arctic research. This is because there is a wealth of information contained in these 200+ pages that is fundamental for the understanding of Arctic environmental and socio-ecological systems. This being said, this reviewer cannot in full confidence substantiate the 'emerging research questions' on the provided bases. Or in other words, it is not entirely clear in how far the presented questions may constitute agency-driven frameworks for potential research. While it would go beyond my expertise to evaluate the natural sciences angle, in the social or political sciences questions nothing too revolutionary can be discovered. For example, the authors ask under the 'connected Arctic': 'How will changing societal connections between the Arctic and the rest of the world affect Arctic communities?' Indeed, this is a highly relevant question and it is without a doubt a crucial part of *ongoing* Arctic research and has by and large dealt with extensively already in 2005, for example, by Stammler in *Reindeer nomads meet the market* (Stammler 2005). Directly or indirectly, the substantial body of anthropological literature dealing with Arctic communities has aimed to tackle this issue. It is therefore hardly an 'emerging research question.'

Similarly, in the category of the 'managed Arctic' the authors ask: 'Will local, regional, and international relations in the Arctic move toward cooperation or conflict?' It seems fair to say that a large part of *ongoing* research on the political developments in the Arctic is founded on this question. There are countless examples for articles and books that focus on conflict or cooperation in the Arctic, most famously done in *Wither the Arctic? Conflict or cooperation in the circumpolar north* by Oran Young (Young 2009). Once again, therefore, this is hardly an 'emerging research question.'

An area seemingly absent in the considerations of the authors is that of legal developments in the Arctic. None of the research questions presented here seems to take legal developments into consideration. This is a pity as especially in the still emerging field of polar or Arctic law there is a need for long-term research and associated long-term research questions which indeed we might regret having ignored. The relevance of the legal dimension in Arctic and polar research is best exemplified in the impressive volume *The law of the sea and the polar regions* (Molenaar and others 2013), also highlighting the