This reviewer's collection includes dozens of books on Prince William Sound. But the indispensable category has only three: Lethcoe and Lethcoe (2001); Wohlforth (2010); and now Day's own account. Marking the 25th anniversary of the *Exxon Valdez* spill, this book makes a contribution comparable to John Nance's (1988) distillation of the wisdom gained by seismologists and geophysicists by the 25th anniversary of the Great Alaska Earthquake of 1964.

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UNDERSTANDING EARTH'S POLAR CHALLENGES: INTERNATIONAL POLAR YEAR 2007–2008, SUMMARY BY THE IPY JOINT COMMITTEE. Edited by I. KRUPNIK, I. ALLISON, R. BELL, P. CUTLER, D. HIK, J. LÓPEZ-MARTINEZ, V. RACHOLD, E. SARUKHANIAN and C. SUMMERHAYES. Rovaniemi, Finland: University of the Arctic; Edmonton, Alberta: CCI Press, 2011. ISBN 978-1-896445-55-7. 695 p., maps, colour illus. Hardbound. Cdn$250.00 + shipping. Also available online in PDF file format.

"Extraordinary" accurately characterizes this book. Its nine editors (plus 242 contributing authors and 52 reviewers) have crafted a mosaic that details the processes in polar scholarship preceding, during, and immediately following the fourth (most recent) International Polar Year of 2007–2008 (IPY 2007–08). The assumption motivating this massive compilation is that a fifth IPY will be conducted in 2057–58. By analyzing precedents from the first four IPYs (IPY 1, 1882–83; IPY 2, 1932–33; International Geophysical Year, 1957–58; IPY [4] 2007–08) this volume suggests that the "six to seven years" (p. 631) of intensive work by informed research planners required to launch the fifth IPY should begin in 2050–51. Thus, almost half the book's most avid readers have yet to be born, and well over half cannot have completed bachelor's degrees yet.

The compendium's analysis, in other words, makes it a leading candidate to serve as the definitive guide to how "an estimated 50 000" (p. xviii) participants in IPY 2007–08 advanced and integrated the state of polar and global understanding in the 21st century's first decade. As a reference, its value should increase with time (unlike short publications, evaluated in academic meritocracies by how many citations, readers, or "hits" they attract shortly after their appearance).

Shortcomings of scholarly forecasts generally, not of this one specifically, form the subject of this and several subsequent paragraphs. The work's life expectancy, though it may excuse the four-year delay between its publication and the appearance of this review, does not make it an immediate "must-read" selection. Its encyclopaedic treatment of historic roots, planning, organizing, communicating, executing, archiving data from, enfranchising new stakeholders to, and predicting legacies of IPY 2007–08 denies this information-rich reference work easy "cover-to-cover" readability.

Inclusive processes of inquiry, to which participants with dissimilar backgrounds and perspectives are attracted, are in vogue at present as the most promising strategies for addressing complex global problems. Accordingly, this publication chronicles the widening circle of people involved in all phases of IPY, from planning through post-IPY curation and syntheses of information: women, whose representation increased especially between IGY 1957–58 and IPY 2007–08; social scientists, even in the "no people" continent of Antarctica (Ch. 2.10 and 5.1); early-career scientists, also termed the "next generation of polar scientists" (Ch. 4.3); educators, formal and informal, and the general public (Ch. 4.1); Indigenous peoples (Ch. 2.10); and Arctic residents and local communities (Ch. 5.4).

Has this general inclusiveness missed any would-be stakeholders or investigative processes from disciplines outside the traditional core areas of natural and social sciences? Not surprisingly, there is little evidence that independent scholars, "lone wolves" or investigators not thoroughly supported by institutional, agency, or non-governmental organizations participated in IPY 2007–08. A few other non-inclusions could be regarded as "exclusions" a generation or two in the future. One such might be failure by IPY 2007–08 explicitly to attract elders (except Indigenous elders, e.g., Fig. 3.10-8) such as post-career scholars, in symmetry with its solicitous approach to early-career polar scientists. Especially if future polar scholars outlive their age of retirement by a decade more than we do today, architects of the next IPY might want to treat them as stakeholders and advisors.

Future IPY planners might decide to address another exclusion: there is almost no attention paid to management and curation in perpetuity of physical, chemical (e.g., ice and lake sediment cores) and biological specimens collected in the course of IPY 2007–08. There is no IPY "voucher specimen" or repository policy analogous to the curation or management of optimally accessible data collected in pursuit of IPY investigations. Had the topic been addressed, it could have been shown as a row at the bottom of Table E-1 (p. 630) entitled "sample and specimen repository policy." This omission might be a subtle holdover from IPY 2, which "steered away from the IPY 1 natural

history template that included botany, zoology, anthropology, and museum collecting (Baker, 1982a)" (p. 11). A legacy of excluding biological sciences persisted through IGY 1957–58, and probably motivated biologists and ecologists to stage their guilds' own prolonged burst of energetic international investigations known as the International Biological Programme of 1967–74 (p. 20). Likewise, in matters of data archival, otherwise thoughtful and candid chapters of this IPY analysis do not address the physical challenges inherent in selecting and repeatedly updating technologies for storage media to assure future information retrieval.

For pervasiveness, no theme in this compendium rivals detecting high rates of change in polar regions. Although it is difficult to imagine today, some other driving paradigm might supplant this theme of rapid change by 2050. Suppose, however, that each of the 14 field stations occupied during the first IPY had initiated and terminated its observations just one year later than they actually did. All 12 Northern Hemisphere stations—instead of just two—would have witnessed dramatic, far-flung climatic anomalies during the boreal summer of 1884, attributed to atmospheric effects of the explosion of Krakatoa on 27 August 1883 (Lenz, 1886; K.R. Wood, pers. comm. 2014). Those anomalies, in turn, could have re-opened scientists' eyes to catastrophes as agents of change, overcome resistance to continental drift and plate tectonic theory, and ripened both scientific and public appreciation for long-distance linkages in global change earlier in the 20th century. We might now be beyond regarding rapid change as the primary driving justification for polar studies.

As to readability in the sense of legibility, this reviewer found that the printed copy's sans-serif font(s) made distinguishing characters difficult (for illustration: i,l,l,l,|,! [Calibri] vs. i,I,l,1,|,! [Times New Roman]). The ambiguity becomes severe where figure legends are reduced in size to 8-point or smaller type (i,l,l,l,|,! [Calibri] vs. i,I,l,1,|,! [Times New Roman]). An illuminated magnifying glass solved my problem for all but a few illustrations and their legends that were decipherable only by opening the digital (pdf) form of the book and magnifying the image (e.g., sub-legible Fig. 2.10-8, p. 325; sub-legible units Fig. 2.2-13, p. 177).

Admittedly, the printed volume is a "page-turner," but in the unusual sense of causing readers to flip back and forth from body text to Front Matter (List of Contributing Authors, Reviewers, and their Affiliations) and to Appendix 11 (List of Acronyms). That Appendix alphabetizes and translates 450 IPY-generated acronyms in a valiant attempt to treat symptoms of economizing on printer's ink, space, and paper. Acronyms proliferate, compete (e.g., Local and Traditional Knowledge, LTK, vs. Traditional Ecological Knowledge, TEK, Ch. 4.5, p. 581), evolve into compound acronyms (e.g., SEARCH for DAMOCLES => S4D, Ch. 3.6, p. 405) and fade to extinction (e.g., SHEBA, Ch. 3.2 References, p. 384). A comparable Tower of Babel phenomenon stimulated a U.S. National Public Radio story on explosive acronym proliferation during the *Ebola* virus panic of 2014 (Poon, 2014). Predictably, rampant abbreviation becomes a torrent of invasive jargon and a centrifugal force erecting new barriers to communication across disciplinary, linguistic, and generational boundaries. This criticism is not fault-finding so much as alerting readers to fundamental challenges that widely afflict scholarly publishing.

Offsetting the above cautions, readers' persistence is rewarded through the book by gems of insight whose flavour is worth sampling here. Matthew Fontaine Maury's insertion, to share Carl Weyprecht's credit in the "origination myth" of IPY 1 (p. 5–6), is intriguing because Maury's vision for polar oceanographic studies coincided with his professed belief in the Open (ice-free) North Polar Ocean Theory (Sides, 2014:47). Trackers of publication rates discovered that the volume of public and K-12 educational literature that continued to appear long after the conclusion of IPY 1 consisted primarily of accounts of the tragic finale of the Adolphus Greely expedition to Ellesmere Island, which cost the lives of all but six of 25 officers and men of the U.S. Army Signal Corps by the time rescuers arrived in 1884.

Russian participants in IPY 2007–08 made greatest use of traditional polar research platforms. Not only did they use polar schooner *Tara* during this latest IPY to repeat the 1893–96 transpolar drift in ice by Fridtjof Nansen's *Fram*, but they also occupied drifting ice stations NP-35 and NP-36, in the series that started with Ivan Papanin's NP-1 pagonauts in 1937–38, a specialization inspired by Soviet experiences with sea ice during and shortly after IPY 2.

Analyses of bottom sediments from subglacial Lake Vostok in Antarctica point the way to future methods for detecting life forms beyond Earth. Specific analogs were detected in soil samples from Antarctica's Dry Valleys and samples analyzed by the Phoenix Mars Lander, notably elevated perchlorate (ClO_4) levels.

Chapter 2.10 conveys the palpable combination of energy and novelty accompanying IPY 2007–08's inclusion of social science and humanities. For example, the inclusion had generated "by far the largest share of the first books produced by the … [IPY] programs.… As of this writing (summer 2010), at least twelve volumes based upon nine IPY projects in the social science and humanities field were already published or are in press…" (p. 318).

A doubter might argue that natural scientists had already "picked the low-hanging fruit" in their narrow fields of polar inquiry, whereas social scientists are just now reaching the point where they too will begin publishing ever smaller units of new understanding. An alternative view is that book-length treatises represent durable trans-disciplinary vigour, in which natural and social sciences interact with community and traditional knowledge to reach new synthetic understanding of polar topics such as sea ice (Krupnik et al., 2010) and social-ecological systems (Lovecraft and Eicken, 2011).

Alongside fresh transdisciplinary insights, polarities seem destined to persist, including those between competition and collaboration, natural and social sciences, hemispheric specializations, books and smallest publishable units, and global and local perspectives. Igor Krupnik,

co-editors on the IPY Joint Committee, and all the other contributors deserve a salute for showing us and future scholars how people worked among all these force fields during the planning and execution of IPY 2007–08.

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NORTH BY DEGREE: NEW PERSPECTIVES ON ARCTIC EXPLORATION, edited by SUSAN A. KAPLAN and ROBERT McCRACKEN PECK. Philadelphia: American Philosophical Society, 2013. ISBN 978-1-60618-923-8. xviii + 469 p., 16 contributors, index. Softbound. US$50.00.

This handsome volume contains most of the papers presented at a conference held in Philadelphia in 2008 to commemorate Robert Peary's 1908–09 North Pole expedition. The gathering was timely, as the Arctic was attracting increasing international attention, although the editors acknowledge that some of today's main preoccupations, such as questions of sovereignty and the scramble for mineral rights, are not covered in this volume.

Part I, "Nationalism and Identity," begins with a paper on Robert E. Peary by Lyle Dick and one on Frederick Cook by Michael F. Robinson. Although the North Pole controversy forms the backdrop to each paper, neither author devotes much space to the century-old dispute. Dick's thesis is summed up by his subtitle, "How and why America's elites made Robert Peary a national icon." His paper describes how America's scientific and political establishment of the Theodore Roosevelt era supported Peary as the ideal model of white masculinity and concludes by identifying the heroic central figure in Charles Knight's popular "Mural of the Neolithic Stag Hunters" as Peary. Robinson's paper argues that the North Pole dispute has distorted interpretations of Cook, whom he sees as "the archtype of the twenty-first century adventure sportsman" (p. 59): such individuals spend, and make, vast sums of money on their activities. Papers in this section move from individuals to institutions with Frederick E. Nelson's study of the role of the American Geographical Society in sponsoring and recording Arctic exploration. Its founding charter of 1851 encouraged "the advancement of exploration along scientific lines" (p. 71), but financial difficulties and increasing government investment in the Arctic after the Second World War have led to its early role being half forgotten. The final paper in this section, by Tina Adcock, takes four very different figures—George Douglas, Guy Blanchet, Vilhjalmur Stefansson, and Richard Finnie—and examines in what sense they can be regarded as explorers at a time when improved transport links were opening up the Arctic. Reliance on indigenous guides, length of time spent in the North, and accumulation of scientific knowledge might all come into play as different definitions of exploration are adopted and discarded.

Part II, "Culture Contacts, Race, and Gender" begins with Karen Routledge's paper on American whalers in Cumberland Sound on the southeastern coast of Baffin Island in the mid-19th century, some of whom wintered there in order to make an early start on whaling the following spring. Her title, "The Desolate Shores of a Frozen Zone," represents the whalers' view of their environment, a view at odds with that of the Inuit communities, who not only subsisted in the region, but hunted enough to keep the wintering crews alive. Among these some died and many suffered, but their fate had more to do with their inability to adopt Inuit diet and adjust to local conditions than with the inherent hostility of the Arctic environment. Race enters the picture in Emma Bonanomi's paper on Matthew Henson, the black American who accompanied Peary on his controversial Polar journey of 1908–09. It was Henson, described by one of the party as "a dandy sledge maker, good shot, and as good a dog driver as the best Eskimos" (p. 192), who along with four Inughuit accompanied Peary on his final dash to the Pole. This image of multiracial collaboration soon faded on Henson's return to the United States, where his lecture tour—made against Peary's wishes—met a mixed reception from largely white audiences and was a financial disaster. The final paper in this section, by Genevieve M. LeMoine and Christyann M. Darwent, is entitled "Inughuit Women's Role in Culture Contact through Clothing." Illustrated by a dozen photographs and based on interviews and archaeological fieldwork, it assesses the extent to which the clothing of the Inughuit of far northern Greenland was modified during the period of first outside contact in the 19th and early 20th centuries. Metal needles and cloth brought some changes, but a strong sense of identity assured the retention of traditional items of clothing, such as sealskin boots and fur pants.

The first paper in Part III, "Culture of the Explorer" by David H. Stann, deals with the fate of the extensive library