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Review: Brave New Arctic: The Untold Story of the Melting North

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Serreze, Mark C. *Brave New Arctic: The Untold Story of the Melting North*. Princeton, New Jersey: Princeton University Press, 2018. 264 pp. ISBN: 978-0-691-20265-5, paperback, US\$17.95.

Consider an important truth of the Arctic: the geophysical changes that take place in the region have passed the point of irreversibility, and the full effects on the social, human, and economic dimensions of the region have not even begun to have been felt. In *Brave New Arctic*, Serreze links his personal experiences and professional progression to the rapid climate changes occurring at the global level, demonstrating how turning points and points of no return bridge the individual and macro levels. Serreze is the Director of the National Snow and Ice Data Center, and a Distinguished Professor of Geography at the University of Colorado Boulder.

Like a memoir, *Brave New Arctic* follows a semi-autobiographical structure that uses Serreze's own life as a branching out point for global climate trends. He traces how scientists from around the world came together to understand the sudden receding of summer sea ice in the Arctic in the 1990s, and the consequent shifts in ocean circulation and global weather patterns, to illuminate his thesis, that the Arctic is undergoing a rapid thaw, primarily due to human activities. The data on which the theory emerges is irrefutable: Arctic surface temperatures are rising over twice as fast as surface temperatures around the globe. Permafrost is thawing, and recent years have seen heat waves above the Arctic Circle.

The book's organization moves from detailing the early years of Serreze's academic career (and introduction to and falling in love with the Arctic) to elaborating the role of data creation in establishing a consensus on the real physical changes taking place in the Far North. Central to Serreze's analysis is the complexity that is embodied by the Arctic as a region and system. It is not a closed system, though it has been geographically separate from southern societies up until relatively recently in human history, but is affected both by what happens beyond its boundaries, and what happens in the North Pole affects geophysical and ocean changes in the lower latitudes.

From presenting his theory on climate change contributors, Serreze provides an overview of the way Arctic-bordering states are responding to change politically and scientifically. He then discusses the long process of moving from scientific theoretical consensus on the tenants of climate change, to actually gathering enough data to act as evidence for the existence of this process. Reporting of this period is tinted with frank, un-sugar-coated reminders that the Cold War was happening at the same time, contextualizing the prioritization of this data collection among Western Arctic states.

Serreze's writing is detail-heavy on fieldwork processes, beginning with his graduate school experiences in the early 1980s. This appeals to readers from the natural sciences, though the implications of the research on policy and political decision making that surface in the second half of the book will draw in social scientists. The extensive use of visual aids to show sea ice reduction, temperatures, on-the-ground features, and researchers' in-field makes the book particularly accessible to general interest and trade readers. The limitations of this book primarily center on concepts that could have benefitted from deeper discussion. Scholarship on the Arctic is frequently interdisciplinary in nature, a consequence of the social science fields developing alongside the natural sciences and the inextricably connected issue-areas in the Far North.

Brave New Arctic certainly informs an interdisciplinary audience, though Serreze assumes an introductory awareness of regional governance associations and major actors. This book is a high recommendation for general interest readers and professionals in either the natural or social sciences who seek a bridging perspective into the others' disciplines. Upon completion of *Brave New Arctic*, readers are left with a greater awareness of the complex processes that define the Far North, feeling satisfied in Serreze's defense of the human dimension of climate change. Serreze's personal commitments and professional experiences are communicated through his writing just as well as his prescriptions: the chronicles of his on-the-ground fieldwork instill trust in his ability to cross from data, to inference, to theory. Serreze has taken a long professional experience and transmitted it so that a broader audience—not just researchers and regional scholars, but also general interest readers—may be observers to the Far North's biological and social challenges.

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