(142). Well-illustrated throughout, *Mapping an Atlantic World* is a welcome addition to the scholarly literature on the emergence of an Atlantic world.

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Naomi Oreskes. *Science on a Mission. How military funding shaped what we do and don't know about the Ocean*. Chicago: University of Chicago Press, www.uchicago.edu, 2020. 744 pp., illustrations, notes, bibliography, index. US $40, cloth; ISBN 978-0-226-73238-1.

In this brilliant work, Naomi Oreskes carefully assesses how American naval funding in the Second World War and Cold War influenced oceanography as a science. During this period, the blossoming field of oceanography became essential to North American defence. The United States Navy (USN) funded and supported research of the world's oceans, fueling major scientific re-interpretations of vast amounts of data, often gathered by naval warships or by research vessels supported by naval funds. Yet, as the author points out, at times, naval priorities conflicted with purely scientific goals, impeding creativity and sharing. Such impediments led to at least one maritime disaster. Oreskes carefully examines the diverse positive and negative effects of defence funding, sometimes within an international context, but mostly focused squarely upon the American picture.

As she notes in her conclusion, some people might be tempted to dismiss assorted oceanographic conflicts as "personal or sociological, but they had epistemic consequences." (469). Despite that conclusion, she does not ignore the personal, national, sociological, economic, philosophical, and other factors in her disciplined analysis. For example, she opens her book by demonstrating how personal animosity masqueraded as security concerns in bitter attacks against Norwegian oceanographer Harold Sverdrup during the Second World War, effectively preventing him from contributing to American breakthroughs in defence-related oceanographic research during that conflict and resulting in his post-war decision to return to Norway. That episode and others are based upon thorough documentation, a careful weighing of alternative explanations, and a demonstration of the interplay of complicated factors.

Her research includes consideration of the long battle to establish the theory of continental drifts, the extended debates over how data supported that and other theories, and how naval funding, security concerns, nationalism, fear of ridicule, organizational rivalries, and personalities affected the analysis of new data emerging from early Cold War oceanographic research. These are complex matters. Oreskes includes the philosophy of science, the science itself, and some modelling methodologies; it was sometimes difficult for a non-

scientist like me to follow all the threads, but well worth an attempt to do so. While her arguments are clear, the volume contains references to geophysical research which will be especially appealing to scientists, historians of science, and other specialists. Cold War historians, naval historians, and maritime historians will benefit from reading her work, but like me, they may not fully comprehend all aspects of her scientific discussions and become occasionally frustrated.

This work adds to what has already been written by Jacob Hamblin, *Oceanographers and The Cold War: Disciples of Marine Science* (Seattle: University of Washington Press, 2005) and Gary Weir, *An Ocean in Common: Naval Officers, Scientists and the Ocean Environment,* (College Station: Texas A&M University Press, 2004). Apart from learning a great deal more about oceanography as a science, *Science on a Mission* reinforced my perceptions about how much security measures impede research, analysis, and understanding with respect to historical processes. Canadians might well envy Americans with several outstanding scholarly volumes when we have far fewer resources about the inter-relationships between oceanography and the Royal Canadian Navy.

The best work to date is undoubtedly Eric Mill's *The Fluid Envelop of our Planet: How the Study of Ocean Currents became a Science* (Toronto: UTP, 2011) which includes an earlier era and some Canadian information. Mills, however, did not gain access to many still-classified defence studies – the continued classification of defence documents plagues both official and unofficial work. Without access to classified databases and lacking a systematic declassification of older oceanographic and naval operational intelligence records (such as those derived from the Sound Surveillance System (SOSUS) and high frequency direction finding and intercept stations), Canadian analysis of the early Cold War remains incomplete and, at times, misleading.

This situation makes volumes like *Science on a Mission* all the more valuable because Canadian and other allied Cold War oceanographic work intertwined tightly with American developments. Canadian historians should read this work, although Canada receives little attention in it. For example, the notable Canadian geophysicist, Tuzo Wilson, is mentioned only once (232). British scientists fare much better with P.M.S. Blackett (and others) rightly credited with their crucial contributions to re-opening the debate over continental drift in the 1960s (190, 192). These are minor quibbles. Oreskes' conclusion mentions the mismanagement of the Canadian fisheries (496) without any detailed analysis of this vital topic. Nonetheless, the basic argument about how defence funding channels research into particular areas at the expense of others is an important topic for Canadians as well as Americans and others. Perhaps one day, historians of Canada may be able to attempt a

similar study when our classified oceanographic research is released. In the meantime, this volume is highly recommended for anyone interested in the broad topics of geophysics, the history of the oceans, and how American naval spending influenced the shape of modern oceanography.

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Serhii Plokhy. *Nuclear Folly: A History of the Cuban Missile Crisis*. New York, NY: W. W. Norton & Company, www.norton.com, 2021. 464 pp., illustrations, notes, bibliography, index. US $35.00, cloth; ISBN 978-0-393-54081-9.

Nuclear Folly is a thoroughly researched, excellently written account of the Cuban Missile Crisis. Drawing on archives unavailable to earlier historians, author Serhii Plokhy takes readers into the hearts of the White House and the Kremlin, offices in which emissaries gave and accepted messages from and for their principles, the steamy jungles of Cuba, reporters' lairs and any other stage on which the now-tragedy, now-triumph was played out.

The story line unwoven by Plokhy varies, in some respects, from that posited by some other authors. Rather than the brilliant handling by Kennedy that safely reversed a Soviet thrust into the Western Hemisphere, he posits a series of miscalculations and misunderstandings that brought the world perilously close to the nuclear Armageddon before the fear shared by the two principal antagonists compelled a solution.

Khrushchev's initial plan is presented as a response to weakness, the Soviets' inability to deliver nuclear warheads to the United States when the US could have hit the USSR. Successful deployment of intermediate range ballistic missiles in Cuba would have served as a counterweight against a first strike by the US and a guarantor against an invasion of Cuba. Planning did not take into account the lack of tree cover under which to hide the missiles. Khrushchev had problems with rogue commanders, who shot down a U-2 reconnaissance plane and rebellion by Fidel Castro that almost scuttled the settlement, reminiscent of later American difficulties with its South Vietnamese clients.

In Kennedy's orbit, the President fluctuated between the hawks and the doves. Several times air strikes were planned and invasions were contemplated before the less confrontational blockade was imposed. Robert Kennedy's suggestions that a US Navy ship be sunk or an attack on Guantanamo Naval Base be staged to justify a retaliatory attack illustrate just how desperate the situation had become.

Northern Mariner readers will be particularly interested in the maritime and naval aspects of the crisis. Missiles and other military equipment, as