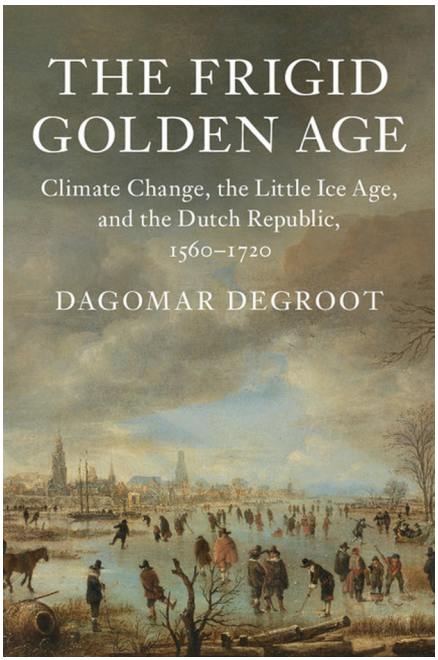
Review

Dagomar Degroot, *The Frigid Golden Age. Climate Change, the Little Ice Age, and the Dutch Republic, 1560-1720*, Cambridge, Cambridge University Press, 2018, 384 pp. ISBN 978-1108419314.



If you hold a reflecting sphere in your hand, you will suddenly notice yourself and your surrounding environment from an entirely new and surprising perspective. In *The Frigid Golden Age* Dagomar Degroot does exactly that. He addresses the effects of global climate change and explores its impact in the early modern period, showing us the history of the period 1500-1800 from a completely new vantage point. Climate change today means above all global warming, but early modern society experienced the exact opposite: global cooling, which historians have named 'the Little Ice Age'. Some scholars believe the onset of cooler climate to have already started as early as the thirteenth century, lasting until the mid-nineteenth century. The coolest stretch of this era lasted from 1560 until 1720, and consisted of two climatic regimes, the Grindelwald Fluctuation (1560-1628) and the Maunder Minimum (1645-1720). These periods witnessed changing atmospheric and oceanic circulation, which altered precipitation and storm patterns all over the world. For northern Europe, the Little Ice Age was known for its harsh and cold temperatures, and until the 1940s scholars often based their theory on seventeenth-century winter landscapes with paintings depicting frozen canals and cheery-eyed skaters.

According to Degroot, this was only part of the story. In his recent research, he discovered that besides winter temperatures being lower (on average two degrees colder than the twentieth century), the real climatic change was not necessarily the harsh winters but rather the extremely cold and wet summers. Diarists throughout northern Europe noted

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the summer of 1628 as 'the year without summer'. The months June, July, and August were notorious for cold temperatures and excessive rainfall, and were ultimately responsible for harvest failure, starvation, social unrest, and epidemics.

The topic of Degroot's book is not necessarily the ecological and agricultural impact of climate change in the period. Instead, he explores how climate change influenced early modern society socially, economically, and culturally, which is highly relevant to the debate on climate change today. Degroot's interest was piqued by how some countries and parts of the world suffered while others prospered, and his fascination for the subject came after he noticed that the coldest era of the Little Ice Age coincided with the height of the Dutch Golden Age. With this in mind, the author hones in on the relationship between global climatic trends and local environments, and how they impacted transportation networks within the Dutch Republic and its trading empire in the Far East. Whereas other countries in Europe were aversely affected by cooler temperatures and winds that hampered travel and trade, the tempest-like storms that became characteristic of the Little Ice Age sped Dutch ships along and brought more profits to the country.

Based on a wide range of primary sources, varying from personal diaries to ship logbooks (they were the most exact data and reported the changes in wind direction), Degroot reconstructs how ships of the Dutch East India Company were often able to manipulate storm winds and travel in record-time from the Dutch Republic to the East Indies. According to the logbook of the *Afrika*, for example, on 25 April 1677 the ship was caught in a storm with northeasterly high winds and jetted 341 kilometers to the west in only one day. In just 16 days, the ship travelled a total of 2778 kilometers, with an average of 171 kilometers a day. With westerly winds, ships usually travelled this distance with an average of just 126 kilometers a day. Indeed, honoring the notion that 'time is money', the managing directors of the East India Company awarded crews with bonuses if they arrived and returned as soon as possible. Too much time at sea could lead to disaster but also fluctuating prices for merchandise and changing demands. Information concerning regional prices and hostile parties was also more effective if ships arrived as soon as possible; such news could be completely irrelevant when it arrived later or was delayed. Climate change in the seventeenth century thus contributed to Dutch wealth in the Little Ice Age. Degroot points out that once the climate started to warm up again in the early eighteenth century, the Dutch started to lose their economic edge to the English.

The extensive trade network the Dutch established in the early seventeenth century went hand in hand with other industries such as map-making and book-publishing. During the Little Ice Age, the Dutch produced the most advanced maps and globes of the world. From Dutch ports, books with the latest scientific findings and ideas were distributed to the rest of Europe. The Dutch Republic also became a hub for painting. Unlike other countries where painters commonly portrayed members of the clergy or aristocracy, the wealthy merchant class also commissioned works and portraits, as well as other genres, which the growing Dutch burgher class used to decorate the walls of their homes. The emerging consumer society of the Dutch Republic instigated a demand for paintings from local artists, fine furniture, and porcelain from the Far East, as well as fancy clothing from the Levant and India. This growing consumer society consequently became the motor for more trade with the Far East.

At the backdrop of the Dutch Golden Age, the cooler temperatures and wet weather were often a blessing to the Dutch when it came to fighting a defensive war against the Spanish. During the Dutch Revolt, the Dutch army took advantage of the excessive rain and flooded low-lying farmland to defend the prosperous cities of Holland from Spanish attack and looting. Spanish troops that were used to dry and warm conditions were often forced to fight in cold and wet enemy territory. The Little Ice Age kept the Spanish out of Holland – the wealthiest of the Dutch provinces – and managed to protect its tax-paying citizens who helped finance the war.

However, Degroot does not elaborate much on how other countries during the Little Ice Age were affected by climate change and consequently suffered from harvest failure, economic decline, depopulation, epidemics, and political unrest. If the author had shown the Little Ice Age within a broader context, the period would have had been portrayed in more relief. Yet admittedly, that would require another book, or even several volumes. As Degroot offers historians a new point of view on the importance of climate in world history, *The Frigid Golden Age* will probably cause climate change of its own in the historical landscape.

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