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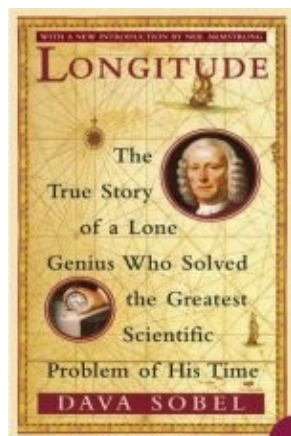
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March 2007

Reviews

## 'Longitude'

reviewed by Charlotte Mulcare



## Longitude: The true story of a lone genius who solved the greatest scientific problem of his time

by Dava Sobel

*Longitude* was first published in 1996, occupying a substantial portion of many a Waterstones table around Christmas-time. The book has endorsements from Patrick O'Brien and Neil Armstrong, and a blurb that cheerfully describes the search for longitude as a "true-life thriller". For those who, like me, find a hard sell somewhat off-putting, I would recommend revisiting this book if you haven't read it: it deserved the hype over a decade ago, and still does today.

In a culture where we are used to navigating not only the sea, but also air and space, the importance of calculating exact co-ordinates is a given. As Dava Sobel describes so well, in the 18th Century, loss of orientation was both common and potentially fatal. When, in October 1707, the British admiral Sir Cloudisley Shovell misjudged longitude, the majority of his fleet sank off the coast of the Scilly Isles with substantial loss of life. His error was rooted in a puzzle of navigation, centuries old, which prompted a desperate British government to issue a challenge to the scientific community. A prize of £20,000 would be awarded to whoever could provide a method that would calculate longitude within 1/2 degree of a great circle.

## 'Longitude'

The significance of the challenge lay not only in its practical impact on navigation, but also in the sheer magnitude of what was being asked: "the concept of 'discovering the longitude' became a synonym for attempting the impossible."

Despite the enormity of the task, two rival theories emerged in response to Parliament's Longitude Act. One camp, the more established, favoured using the "clockwork of the heavens". This involved painstakingly charting the stars and lunar movements, in order to provide a fixed celestial map that sailors could use to judge distance and navigate at sea. A combination of maths and observation would provide a crew with an accurate longitude. The other idea was to create a clock that would keep a true time even at sea. Sailors knew that time and space were inextricably linked, and that local time moves forward one hour for every 15° of longitude travelled east, and backwards an hour for every 15° travelled west. If a sailor knew local time at two different points on Earth, that is, at their present location and also at their home port, calculating the difference between the two times would enable them to calculate longitude. Knowing local time for the position at sea was relatively easy: it could be determined by looking at the position of the sun. Knowing local time from the home-port was far more problematic, and would rely on a clock that could keep its time without being vulnerable to changes in temperature, motion or rough treatment at sea.

Throughout the book, it is clear that Dava Sobel has a substantial grasp of the maths and science behind both theories; her descriptions simplify complex ideas without slowing the pace. It is a credit to her accessible writing-style that the book feels like a fast read, and in some respects this is a pity: it feels like the story is over too soon. I would willingly have read more, for example, about the clocks designed to withstand the rigours of a sea-voyage. Sobel's descriptions of the mechanics are wonderfully visceral, and you can imagine the cogs clearly, but can't always follow their workings. I would also have enjoyed more substance regarding the background and history of each theory, and the various eccentric characters surrounding them.

The search for an answer to the longitude question engaged some of the greatest minds of the age. However, while Newton, Halley and Cook are mentioned, the key protagonist, a clock-maker named John Harrison, rightly gets the highest word count. It seems irresistible to sympathise with this craftsman who designed the mechanical clock, driven by a profound faith in his work and single-minded dedication. In contrast, his rival, Nevil Maskelyne, comes across as an austere, puritanical man whose attempts to thwart his rival's work were petty at best and desperately unfair at worst. Harrison's perseverance in the face of overwhelming opposition, back-stabbing, unfairness and political intrigue is admirable, if at times unfathomable.

It is harrowing that politics almost buried such a significant advance. The reader might well wonder how many academics and craftsmen throughout history have been similarly treated, and with what cost to potential progress. On a more positive note, *Longitude* also shows how a desperate government and country can fuel research when confronted by an apparently insoluble problem. This inevitably raises questions about attitudes to science and technology today. Could, for example, a safe form of cheap renewable energy or a cure for cancer be stimulated by an Act of Parliament, a substantial prize and a handful of benevolent patrons? Dava Sobel's book could accurately be labelled a popular history or science book; however, it is ultimately the story of phenomenal dedication and personal triumph through one scientist's refusal to consider a problem insoluble.

### **Book details:**

*Longitude*

Dava Sobel

paperback – 192 pages (2005)

HarperPerennial

ISBN-10: 0007214227

ISBN-13: 978-0007214228

## 'Longitude'

Charlotte Mulcare read Biological Anthropology at Cambridge, and has recently completed a PhD at University College London in human genetics. The project used DNA sample from modern populations to trace the migration and selection patterns in Neolithic farmers. She currently works as a science writer (fact and fiction!) and lives in Oxford.

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