

LONGITUDE READING GUIDE

THE POLITICAL SCIENCE OF CHRONOLOGY:

Politics may incorporate a scientific perspective, and science may be political. Are politics and science separable? Using the following quotes, consider the role of politics in technological development.

"The placement of the prime meridian is a purely political decision... The zero-degree parallel of latitude is fixed by the laws of nature, while the zero-degree meridian of longitude shifts like the sands of time." (p. 4)

1. What are the consequences of people who are not experts in science making decisions that impact scientific research?

"Indeed, King Louis XIV of France, confronted with a revised map of his domain based on accurate longitude measurements, reportedly complained that he was losing more territory to his astronomers than to his enemies." (p. 27)

LONGITUDE IS ALL ABOUT MEASURING GEOGRAPHIC SPACE:

1. Why is control over space so central to the history of the last several hundred years?
2. Is space finite or are there examples in your lifetime of emerging new spaces?
3. How is "new space" measured, regulated and controlled today?
4. Who is responsible for this management and with what kinds of consequences?

"This document...demanded that the government pay attention to the longitude problem—and hasten the day when longitude should cease to be a problem—by offering rich rewards to anyone who could find longitude at sea accurately and practicably." (p. 50)

5. Why did the British, French, Danish, and other governments become involved in the longitude problem?
6. Should governments have a role in solving scientific problems that affect issues such as health, the economy, the environment, and education? Why or why not? If not, what institutions should take that responsibility?
7. Contrast the approach of the British government to solving the longitude problem with the approaches used by governments today for solving scientific problems.

AHEAD OF HIS TIME:

1. Harrison faced adversity as a man of humble birth up against the elite intellectuals in control of the board of longitude.
2. What were the social barriers that Harrison faced, and how did they affect his participation in the longitude contest?
3. If one considers the globalization of political, economic, and health and environmental issues, what new obstacles do inventors and entrepreneurs face today compared to the era of the "longitude problem"?

CLOCK-MAKING 101:

Despite Harrison's genius innovation, he was limited by his ability to communicate his ideas.

"Harrison, according to those who admired him most, never could express himself clearly in writing...No matter how brilliantly ideas formed in his mind, or crystallized in his clockworks, his verbal descriptions failed to shine with the same light." (p. 66)

1. What aspects of the core-curriculum offered by the College of Charleston might have helped Harrison succeed?
2. Compare communication problems of the 18th century with communications problems of the 21st. In what ways is communication a key issue in the advancement of science and technology?

Future clockmakers, like Earnshaw and Arnold, may not have been as innovative as Harrison, but they did have the "business finesse" to make the chronometer "an assembly line item."

Relate the history of the chronometer to the history of other innovations and to innovations of the future, such as the development of alternative fuels.

3. What are the makings of a great inventor?
4. What characteristics are necessary for an inventor to be a successful entrepreneur?
5. For an inventor to be successful is entrepreneurship necessary? Why or why not?

TIME AFTER TIME:

We live in a modern era, far past the illogical problem-solving techniques employed in 1687. However, the definition of modern thought is a direct function of time. Read the following quotes and consider some of the parallels between 1687 and 2008.

"Surely the most colorful of the off-beat approaches was the wounded dog theory, put forth in 1687." (p. 41)

1. Is it possible for us to be aware of modern day gaps in judgment as they are occurring, or will they only be revealed by hindsight? Explain your response.
2. What are the consequences of "being blind" to our illogical thinking?
3. What modern-day ideas do you suspect will be mocked in the future as we mock the "wounded dog theory" today?

"Having established itself securely on shipboard, the chronometer was soon taken for granted, like any other essential thing, and the whole question of its contentious history, along with the name of its original inventor, dropped from the consciousness of the seamen who used it every day." (p. 164)

4. Which "essential things" that we use today have a history familiar to the American public, and which have we come to take for granted?
5. What reasons might we want or need to know the history behind common-use items, such as microwave ovens and air conditioning units?

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Soon after its original publication in 1995, *Longitude* was translated into two dozen foreign languages and became a national and international bestseller, much to Ms. Sobel's surprise. It won several literary prizes, including the Harold D. Vursell Memorial Award from the American Academy of Arts and Letters and "Book of the Year" in England. Together with William J. H. Andrewes, who introduced her to the subject of longitude, Ms. Sobel co-authored *The Illustrated Longitude* (Walker 1998 and 2003).