

Political Booknotes

Longitude: The True Story of a Lone Genius Who Solved the Greatest Scientific Problem of His Time

Dava Sobel

Walker & Co., \$19

By Gregg Easterbrook

Writers have long been fascinated with the centuries of effort required to devise reliable clocks, and the attendant imposition of notions like “standard” time and the time-regulated workday. The recent intellectual fashion has been to depict the development of accurate timepieces not as a convenience, but as part of the plot to divest people of their mystic connection to the pretechnological rhythms of nature by substituting a regimented clock-consciousness that served the interests of the lords of commerce. Probably the best expression of this view is Ronald Wright’s beguiling 1991 book *Time Among the Maya*, which implausibly, if captivatingly, depicts ancient Mayan culture as more human than ours because the Mayans believed time was not linear (tick...tick...tick) but in some vague fashion “circular” (tick...retick...tick). In postmodern theory, the progression from timekeeping based on sundials to giant pendulums to water engines with thousands of pieces to cheap digital devices with no moving parts is one long horror story. [Not that any intellectual would want to be late to a symposium to enounce this view.]

Yet as science writer Dava Sobel points out in her engaging and delightful new book *Longitude*, the big breakthroughs in clock construction came in pursuit of seafaring, not social regulation. In the 15th century, when nations began to sail the world’s oceans seri-

ously, the greatest obstacle to navigation was the inability to determine longitude (position east-west) at sea. Latitude (position north-south) could be read by observing the apparent motion of the sun. But this technique did not apply to longitude, and as a result the fleets of Europe spent inordinate time and incurred constant loss of life essentially wandering the high seas, trying to figure out where they were.

Minds as famed as Galileo, Newton, and Halley applied themselves to the problem and believed its solution lay in observation of the moon or the satellites of Jupiter. Sobel’s tale concerns John Harrison, an obscure English watchmaker from a merchant-class background who believed clocks held the answer. Harrison had to battle the budding English science establishment, which wanted the solution to be based on the glamorous, aristocratic pursuit of astronomy, not the tinkering of a mere craftsman. Sobel’s story is rich with fascinating details both of scientific investigation and the bureaucratic politics of 18th-century England. *Longitude* is well-timed too, as the new Umberto Eco novel *The Island of the Day Before* features a protagonist marooned on an 18th-century vessel stocked with bizarre longitude instruments.

Serious pursuit of a means of fixing longitude began in 1707, after four British frigates ran aground in fog near their home port owing to total east-west disorientation, with the loss of nearly 2,000 men. Sobel recounts, in a horrifying passage, how after the vessels became lost in a week-long mist, a sailor approached Admiral Sir Clowdisley Shovell to declare that a

private navigational logbook he had been keeping indicated the squadron was about to founder on the dangerous rocks of Scilly Isles southwest of England. British fleet rules then forbade any study of navigation by non-officers, because navigators had a wizard’s status no enlisted personnel were allowed to challenge. Sir Clowdisley immediately had the sailor hanged for questioning the judgement of an officer. Shortly afterward, his flagship plowed into the Scilly rocks, the three following ships faithfully smashing in as well.

Sadly, Sobel does not know the name of this lost sailor, who seemingly hit upon a significant idea and might himself have become an important figure had he not lived in a society that discriminated ruthlessly against the low-born. At any rate, the English government’s response to the event was not to redress the outrage of executing a common man for telling an officer the truth, but to create a new bureaucracy—the Board of Longitude, which was to supervise research and award a prize of £20,000 (equivalent then to \$12 million now) for the first reliable means of longitude fixation. In a manner that *Washington Monthly* readers are likely to find hauntingly familiar, the Board served mainly to suppress the most promising inventions, channel funds to the politically favored, and then remained in existence for 50 years after the problem of longitude was solved.

Harrison, an odd, reclusive man, proceeded on the assumption that a highly accurate clock would crack the nut. If a clock could show precisely the moment of noon at a ship’s home port and sightings of the sun were

employed at sea to determine the local noon, differences between the two could be employed to determine degrees east or west, roughly by calculating how many time zones the ship had passed through. This idea was generally known in the 18th century, but most scientists assumed clocks could never be made reliable enough for the task. Pocket watches of the era gave only an approximation of the hour; even vast clock-tower assemblies had to be readjusted daily. Friction between knurled parts, humidity

changes, and the rolling of vessels at sea wiped out the accuracy of all navigation clocks the navies of the Renaissance attempted to build.

Undeterred, Harrison spent his entire adult life locked away in a modest workshop pursuing an accurate clock, abandoning the pendulum in favor of gears. By 1722, he had produced a remarkably low-friction tower clock for an English manor house: The clock has now run continuously for more than 250 years. From 1737 to 1759, Harrison built three fantastic-

looking naval chronometers, devices the size of desks that contained hundreds of gears and thousands of hours worth of intricate metalwork. Sent to sea on a trial, one of the clocks allowed nearly perfect longitude readings. But Harrison's attempt to claim the longitude prize was denied, as factions of the Board tried to channel the prize money to favorites. The Board kept stipulating that Harrison's clocks pass tests more strict than required in the original prize definition, while reducing the test requirements on solutions proposed by aristocrats.

In 1760, Harrison produced a device as revolutionary in its time as the silicon chip has been in ours—namely, the first timepiece to bear the name watch. A fraction of the size or cost of his previous inventions, the watch kept near perfect time no matter how harshly it was bounced around. The success of this British invention in enabling accurate timekeeping at sea is a reason the English were able to enforce establishment of zero longitude as passing through the old Royal Observatory on the Thames River town of Greenwich, and to deem Greenwich Mean Time the world's basis for time accounting.

For Harrison, the invention of the watch led to an incessant, Dickensian legal case over attempts to claim the longitude prize. By 1773, Harrison was 80, in failing health, and still not the recipient of the award, which the Board of Longitude steadfastly refused to confer upon him, in order to justify its previous resistance to timekeeping over astronomy. George III developed an interest in Harrison's cause; yet even the king was unable to make the Board of Longitude waver. Finally, Parliament bestowed a cash prize and deed of thanks on Harrison directly, so at least the inventor died with the knowledge of his vindication. The Board of Longitude was so incensed by this challenge to its authority that ultimately it never awarded the original £20,000 to anyone. When the HMS Beagle set sail in 1831, its intended purpose to map the longitude of Pacific

INSIGHTS INTO AMERICA

Congress as Public Enemy

Public Attitudes Toward American Political Institutions

John R. Hibbing and Elizabeth Theiss-Morse

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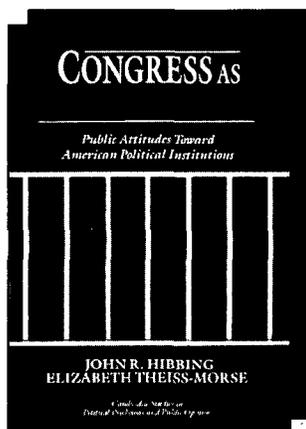
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islands, its primary equipment a complement of 22 chronometers, the Board of Longitude was still in existence, still arguing about who should have gotten its prize in the previous century.

Gregg Easterbrook is a contributing editor of The Atlantic Monthly and author of the recent A Moment on the Earth.

The Twilight of Common Dreams: Why America is Wracked by Culture Wars

Todd Gitlin

Henry Holt, \$25

By Jonathan Alter

My idea of hell on earth would be life as a lefty professor at Berkeley in the 1980s and early 1990s. A conservative could oppose the politically correct idiocy, but as a liberal professor I would have felt obligated to uphold the basic values of my creed, while quietly enduring the most appalling manifestations of multiculturalism. Some of that is receding now—the demands to spell “women” as “womyn” seem a tad off the point—but for a while, it was bad.

Todd Gitlin, a former president of the Students for a Democratic Society (SDS) and author of books on the 1960s and the media, has lived that hell and survived to tell the tale. In *The Twilight of Common Dreams*, Gitlin delivers a devastating description of how identity politics have wrecked the American left, which he contends, is pretty much confined to academia these days.

Gitlin's survey of the left's demise is cogent and useful, and his stories of academic life are harrowing. “While the Right was occupying the heights of the political system, the assemblage of groups identified with the Left were marching on the English Department,” he writes. It was the irrelevance as much as the pettiness of liberal academic politics that's so annoying—the “rapture of marginality,” in Gitlin's words, “the narcissism of small differences” in Freud's.

Gitlin is especially good in connecting academic fads like Michel

Foucault with the descent into absurdity. “From ‘the personal is political’ it was an easy glide to ‘only the personal is political’—that is, only what I and the people like me experience ought to be the object of my interest,” he writes. The examples, such as the group of women of color who staged a walkout from a women's studies course at the University of Michigan in 1991 because “only one-third” of the assignments were written by women of color, are familiar, but Gitlin gives such fundamental irrelevancies a personal twist and illuminating context.

In 1992, for example, the sociology department at Berkeley nominated a French leftist named Loic Wacquant for a professorship in Chicano studies. He was perfectly politically correct, except that he had applied late, didn't specialize in Chicano studies, and was reputed to be a “bad listener.” A boycott of Wacquant ensued, and it became the main activity of the left even as California's state government was savaging the budget for all levels of education. Such misplaced priorities remind Gitlin of the story of the fool on his hands and knees searching the sidewalk under a streetlight. “What are you looking for?” a passerby asks. “My watch.” “Where did you lose it?” “Over there,” says the fool, pointing to the other side of the street. “Then why are you looking here?” asks the passerby. “Because it's dark over there,” says the fool.

Gitlin is also hard on the mainstream press for describing political correctness as a new McCarthyism. “P.C. did not, in fact, haul miscreants up before congressional committees,” he writes, “fire or flunk nonconformists, pillory them in the press or take their passports away.” But Gitlin's attack on the anti-P.C. overkill misses the point. Just as liberals earlier in the century had to purge communists from their ranks, the radical multiculturalists he's taking on must be fought, not just reasoned with. It's hard—even paradoxical—to build a commonality movement by excluding people, but as

Hubert Humphrey and other liberals learned in the 1940s, it's the only way.

“For too long,” Gitlin writes, “too many Americans have busied themselves digging trenches to fortify their cultural borders, lining their trenches with insulation. Enough bunkers! Enough of the perfection of differences! We ought to be building bridges.”

Yes, but cooperating with other factions in opposition to the right is not nearly enough. We need to totally redefine what it means to be progressive, liberal, or of the “left.” In part, that will mean subordinating individual causes and identities, such as ethnicity, to a larger, common interest. Tony Blair, the likely next prime minister of Great Britain, has begun to do that with the Labor Party. If Bill Clinton had been more clear-headed, he might have done it here. It is gratifying to see a bona fide liberal break free of liberal dogma. For those who didn't know it before, Gitlin has illuminated the wrong turn we made and shown us where we shouldn't go. Next, maybe someone can muster the vision to show us where we should.

Jonathan Alter is a columnist for Newsweek.

The Vanishing Vision: The Inside Story of Public Television

James Day

University of California Press, \$29.95

By Lawrence K. Grossman

Reader Alert: This reviewer spent eight years (1976 to 1984) as president of the Public Broadcasting Service (PBS), pursuing James Day's “vanishing vision.” My more or less turbulent PBS tenure is described in Day's book largely, though not entirely, in flattering terms.

Also in the interest of full disclosure, readers should be aware that my praise of this book appears on its back cover. It may be hard to imagine that a book detailing the many petty bureaucratic entanglements that have consistently plagued American public television could be of interest to the general