

## SCIENCE & TECHNOLOGY

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### **EVERYTHING AND MORE:**

#### ***A Compact History of $\infty$ .***

By David Foster Wallace. Norton.

319 pp. \$23.95

The weirdest thing about infinity is that there's anybody who understands it. Mathematicians have defined it, analyzed it, and stuck it, wriggling, on a pin. Yet infinity is not just a specimen in a dusty museum of mathematical oddities; it still has mind-blowing power and baffles those who are not trained to comprehend it.

Humanity has come a long way, philosophically and logically, from the first systematic struggles with the infinite in ancient Greece. In the late 19th century, the German Georg Cantor became the first mathematician to tame infinity. Though his definition is surprisingly simple—a set is infinite if it can remain the same size even after someone removes parts of it—the mathematics of infinity quickly make things confusing. Cantor realized that there are different degrees of infinity and even an infinite number of infinities. In the years that followed, mathematicians learned to manipulate infinities by adding and dividing and multiplying them, which yielded such creatures as the cube root of infinity and infinity to the infinity power. This is the realm of the transfinite, the infinitesimal, and the surreal.

Covering two and a half millennia of history, mathematics, and philosophy in 300 pages is a tough job, but David Foster Wallace, the celebrated novelist and essayist, makes an admirable attempt. It's fascinating to watch him grapple with his audience, his craft, and himself as he tries to bring infinity to heel.

In some respects, Wallace is in top form. His prose sparkles with blunt and funny phrases that bring his erudition into greater relief. He describes the classical philosopher Zeno of Elea, for example, as "the most fiendishly clever and upsetting Greek philosopher ever (who can be seen actually kicking Socrates' ass, argumentatively speaking, in Plato's *Parmenides*)." Such passages will come as no surprise to Wallace fans; nei-

ther will his innumerable footnotes and playful abbreviations. Like his other works, *Everything and More* thrums with neurotic energy.

Unfortunately, the subject matter gradually makes mincemeat of the idiosyncratic style. As the material gets denser and more difficult, Wallace breaks out of his narrative with interpolations and "emergency glossaries." His abbreviations begin to consume his prose; one section is named, semi-jokingly, "End Q.F.-V.-T.I. Return to §7c at the ¶ on p. 256 w/ Asterisk at End." He can't decide whether he's writing for mathematicians or mathphobes as he whirls dizzily from minute detail to fuzzy abstraction and back again. As the story progresses, he seems to get more and more frustrated with himself and his readers. At the end, the prose squeezes and strains, as if his "compact history" has run out of room.

Though Wallace's wicked turns of phrase and his delight in the rich history of infinity are almost enough to carry *Everything and More*, the book finally degenerates into a gibbering wreck of stylistic tics. Like Cantor, Wallace set out to tame infinity. This time, infinity won.

—CHARLES SEIFE

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### **LIGHTNING MAN:**

#### ***The Accursed Life of Samuel F. B. Morse.***

By Kenneth Silverman. Knopf. 503 pp. \$35

In 1844, Samuel F. B. Morse demonstrated his new telegraph in the Supreme Court chamber of the U.S. Capitol. From Odd Fellows Hall in Baltimore, Morse's aide Alfred Vail sent word that the Democratic Party had just nominated dark horse James K. Polk for president. With everyone in the court electrified over both the news and the means of its arrival, Morse and Vail ended their session with a 19th-century instant message:

V: Have you had your dinner

M: yes have you

V: yes what had you

M: mutton chop and strawberries

Small talk has always had its place beside great events in long-distance communication.

Kenneth Silverman, the author of a Pulitzer Prize-winning biography of Cotton Mathew, tells the life of Morse (1791–1872) through many such precise and contrasting details. The inventor was born outside Boston to a stout, no-nonsense mother and a father who preferred mapmaking to his work as a minister. As a young man, Morse, too, divided his time between two pursuits, tinkering with inventions and painting portraits.

His results in both were mixed. A prototype fire engine failed in a public demonstration, prompting one spectator to write: “Mr Morse better stick to his brush, *he will do well enough then* but as to Engines he’d better let them alone.” Morse did become a prosperous artist, but when his most ambitious, meticulously detailed works failed to establish him as a serious painter, he decided to concentrate on the inventions, including an idea for a long-distance communications device. One way or another, he felt sure, greatness was his destiny.

In 1837, Morse read a newspaper article about two French inventors working on a concept that he had thought existed solely in his notes. Alarmed, he retraced his steps, even going so far as to write to fellow passengers on a transatlantic crossing he had made in 1832, some of whom responded that, yes, they recalled his having talked of his telegraph notion. Along with establishing his primacy, he was struggling to figure out



*Samuel F. B. Morse and his family, c. 1809*

where the idea might have slid from his fingers—an example of what might be Morse’s real curse, a personality given to obsessing over both detail and reputation. He spent the rest of his life locked in a grudge match with other inventors over telegraph patents, funding, and fame.

Through Silverman’s curatorial eye, Morse’s story shifts from sweetness (the feckless young painter) to tragedy (his artistic projects fail, his young wife dies, his paternity claim to his greatest invention is called spurious), and finally to irony (xenophobic Morse promotes the idea of a transatlantic cable). Along the way, the biographer capably explores such topics as intellectual property rules, early-19th-century tastes in art, government funding of commercial projects, and the vagaries of electric communication. The book is a triumph for Silverman and his readers, as well as, belatedly, for Morse.

—ALEXANDER CHEE

## HISTORY

***TOMMY THE CORK:***  
*Washington’s Ultimate Insider,*  
*from Roosevelt to Reagan.*

By David McKean. Steerforth. 347 pp.  
\$25

It’s likely that every great capital city, at least every one with some form of representative government, attracts legions of ambi-

tious, well-motivated, politically adept young people eager to play parts on the political stage. Some of them succeed, to the lasting benefit of their nation. Unfortunately, the mixture of money, power, and malleable laws that is characteristic of capitals also draws fixers—clever operators who ignore many of the ethical rules that governments