

## 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