

the external, mental, and social worlds, which are in turn divided into 354 categories (*Food and drink, Thought, etc.*), and then further categories and subcategories, from the most general to the most specific. (Roget divided his thesaurus into six broad classes, though most casual users simply flip to the index, unaware of his taxonomy.) Each word is listed with the corresponding year of first and, if applicable, last recorded use. Under the word *piety*, for instance, you'll find a list of words that have meant *piety* over the centuries, and then sub-entries for words that have to do with, but are not the same as, *piety*. *Sanctimoniousness*, a subcategory, lists words including *hiwung* (Old English), *lipholiness* (1591), and *mawwormism* (1850).

Wordsmiths have known all along that the variety and coloration of the language make a precision-engineered thesaurus impossible.

The *HTOED* is only two volumes—one consists of entries, the other is an index—to the 20 that compose the *OED*'s second edition. Missing are all those quotations that make the *OED* such a wealth of, well, context; it won't offer enough linguistic handholding to stop the abuse that has given thesauruses a bad name. (Thesaurus abusers flock to *Thesaurus.com* anyway, and likely aren't interested in Old English words for *love*.) The *HTOED*'s lists, no matter how finely tuned, confirm what wordsmiths have known all along: The variety and coloration of the language make a precision-engineered thesaurus impossible. Reading the *HTOED* is a fascinating journey through 1,300 years of linguistic history, each entry a series of signposts to not-yet-scrutable destinations. It will send you straight to the dictionary, which is as it should be.

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Intellectual Horsepower

Reviewed by Nikolai Slivka

"STOP IF YOU FIND YOURSELF becoming absorbed, at even the first paragraph." So advised Ralph Waldo Emerson on the perils of reading. As Robert D. Richardson eloquently shows in *First We Read, Then We Write*,

this admonition is of a piece with Emerson's awareness, articulated in mordant comments throughout his life, that while reading is essential to good writing, it also insistently threatens to subdue the creative impulse. "Each of the books I read invades me, displaces me," he once complained.

The author of *Nature* (1836) and such seminal essays as "The American Scholar" and "Self-Reliance," Emerson (1803–82) believed that reading should be a vigorous culling of facts and ideas, directly in the service of one's own intellectual production. Too often, he observed, we read as sluggards, "drugged with books." Thus, he encouraged what we would call speed-reading: Turn "page after page, keeping your writer's thought before you, but not tarrying with him, until he has brought you the thing you are in search of." Most important, don't forget that "you only read to start your own team."

The comparison is between a team of horses getting under way and the mysterious process by which external stimulation leads to original work. In his comprehensive 1995 biography *Emerson: The Mind on Fire*, Richardson portrayed a thinker fascinated by this process. Shaken by the skepticism of 18th-century philosopher David Hume, Emerson was animated by the question of what independent creative force an individual could unassailably lay claim to: "My heart's inquiry is, whence is your power?" In the narrower ambit of *First We Read, Then We Write*, Richardson focuses on the practical dimension of literary creation, devoting chapters to Emerson's reading, word choice, attitude toward his audience, and sentence construction.

FIRST WE READ, THEN WE WRITE:
Emerson on the Creative Process.

By Robert D. Richardson.
Univ. of Iowa Press.
101 pp. \$19.95

Richardson takes particular note of what he calls Emerson's "makeshifts" and "strategies." His central writing strategy was to keep journals, then draw from them whenever a project arose.

Richardson claims that Emerson's "Rousseau-like belief that we are born not just good, but open—to the world and to others—led him to prize hints, glimmers, premonitions." The journals proved an apt vehicle not only for these wisps of thought, but also for the weightier cargo of fully developed prose that Emerson would later copy into his lecture manuscripts.

The journals' practical value depended on the elaborate index to which Emerson yoked them. Begun in 1838, within 10 years the master index was 400 pages long. The biographical listings numbered 839 names, and some entries—"Intellect," for instance—might include 100 references, each encapsulated in a few phrases and pegged to the page and volume containing the full passage. Emerson relied so heavily on his journals that he came to refer to them as his "savings bank."

Despite the journals, writing was a struggle. According to Richardson, in his creative life Emerson endured "cramp . . . , utter inglorious collapse, and the terrible power of mere mood." In his journal, he evokes the distress of a writer who at the end of a fruitless day must face loved ones and "return to the necessities and conversation of the household without the support of any product, and they must believe you and you may doubt that this waste can be justified." From this desolate scene, Emerson leaps to an optimism that Richardson rightly criticizes as forced and "formulaic": "The Saharas must be crossed as well as the Nile"; from "your absence of thought" comes a "purer splendor," and so forth.

The Emerson of *First We Read, Then We Write* inspires not through exhortation but by example. Richardson has beautifully educed how creativity springs from habit, self-awareness, the timely journal entry, the right book judiciously set aside.

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SCIENCE & TECHNOLOGY

Well, Isn't That Special?

Reviewed by David Lindley

STARS AS WELL AS HUMAN beings are born, grow old, and die. In the 19th century scientists proposed the dismaying notion of the "heat death" of the universe, according to which every hot thing becomes

tepid while all cool things become warm, so that in the end all matter exists at the same middling temperature and the future is an eternal unchanging tedium. Physicists have a word for this general tendency toward decay and dissipation: entropy. And entropy, as Sean Carroll, a physicist and cosmologist at the California Institute of Technology, ably explains, is all about the directionality of time. The onward march of time fundamentally derives from something peculiar about the way the universe was born, and that's the puzzle Carroll attempts to resolve.

If you could watch a movie of two atoms bashing into each other and then bouncing apart, you could not tell which way time was running. A collision run backward in time obeys the laws of mechanics exactly as well as the same collision run forward. But think of a lot of atoms crashing about—milk being stirred into black coffee, for example—and a clear direction of time emerges. Stir that coffee as long as you like, and you will never see the milk collect itself in one spot to form a white island in a black sea.

Entropy, you may have heard, explains this. Entropy is a measure of disorder, and the second law of thermodynamics says that it can only increase. Highly ordered arrangements of atoms (the milk all in one place, surrounded by coffee) inevitably evolve, through the general commotion of atoms, into disorderly arrangements (the milk mixed up throughout the coffee). The fundamental reason is sim-

FROM ETERNITY TO HERE:

The Quest for the Ultimate Theory of Time.

By Sean Carroll, Dutton.
438 pp. \$26.95