

On our way to the technorapture

Religionists imagine the end of life as we know it, futurists the end of life as we *can* know it. BY MARK WILLIAMS

ON THE racks in drugstores, you sometimes find paperback adventure novels for teenagers in which the young protagonists move across an America that's mystifyingly depopulated: a familiar property of science fiction when nuclear dread was in its heyday in the '50s and '60s. The rationale, though apocalyptic, is something else here. What's happening—conveniently, for plot purposes, in stages—is the conclusive event hoped for by those who display bumper stickers declaring “Beam me up, Lord” and “In the event of the Rapture, this car will be driverless.”

Besides bumper stickers and “young adult” novels, full-color depictions of the Rapture are purchasable as framed prints, postcards, or nifty laminated place mats. Neurobiologists have theorized that the religious impulse is genetically hardwired into all humans. (Tracking cerebral electrical activity, researchers at the University of California at San Diego indeed found in the frontal lobe a cluster of neurons that become active in epileptics during seizures and in nonepileptic religious folks when they are shown symbols evoking their beliefs.) The manifestations of this impulse have singularly affected the history of this ostensibly rational, most technocratic of nations. The original European colonists were religious dissidents, and white Americans claimed God's seal of approval

Apocalypse Pretty Soon
Travels in End-Time America
By Alex Heard
360 pages, \$24.95
Norton

Robot
Mere Machine to Transcendent Mind
By Hans Moravec
226 pages, \$25
Oxford University Press

The Clock of the Long Now
Time and Responsibility:
The Ideas Behind the World's
Slowest Computer
By Stewart Brand
176 pages, \$22
Basic Books

while enslaving Africans and dispossessing the continent's indigenous populations. In a poll conducted by Yankelovich Partners in the '80s, 39 percent of Americans said they agreed with Jerry Falwell and Pat Robertson that nuclear war was inevitable and that the Rapture would occur thereafter. Today, as many as 47 percent believe that God created humankind less than 10,000 years ago, according to a Gallup poll.

APOCALYPSE COW

Alex Heard's *Apocalypse Pretty Soon: Travels in End-Time America*, besides mining the mother lodes of American looniness, is a hoot. Americans' constitutional right to believe whatever

they damn well please combined with the size of God's country have allowed all kinds of dingbat denominations to flourish from the beginning. In this premillennial century, that tendency has been augmented by the entertainment industry's increasing sway—as it makes, shall we say, actors of us all—and by the conflation of religion and science fiction. If, as with biological ecologies, riotous diversity signals vitality, this book reveals America as a rain forest of New Age, Gaia-worshipping Republican survivalists; Old Testament literalists; Extropian life extensionists; utopian separatists planning their own nations in the middle of the ocean; and every other conceivable mix-and-match variation of belief.

Consider the apocalypse cow. Ever wondered why the likes of Mr. Falwell and Mr. Robertson have been so chummy with Israel these past few years? It's because millions of fundamentalist Christians have studied Revelation and decided that the rebuilding of the Jewish Temple on Old Jerusalem's Temple Mount will portend Christ's return and the Rapture's imminence. Some premillenarian Christians have made common cause with American-born Israeli rabbis who believe the Temple will portend the Messiah's *first* coming (and, incidentally, entail the eradication of Islamic holy places that have occupied the mount since the 7th century A.D.). Mr. Heard arranged to be on hand in Mississippi when Rabbi Chaim Richman visited his friend the Reverend Clyde Lott, a Pentecostal cattle breeder, to determine how close Mr. Lott's best livestock came to being that perfect red heifer that the Old Testament's Book of Numbers requires as a sacrificial

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animal for the restored Temple.

Mr. Heard explains an essential point. Precisely because many of his subjects believe things are getting worse, they're hopeful. Each of them, he writes, is "an outsider in an end-of-the-millennium American society they found unacceptable." He respects—excepting a few characters who, he says, "deluded by astonishing levels of narcissism have done a lot more harm than good"—that these are people "anticipating or somehow working toward a heroically different world." However daft.

But he's bemused when he finds folks who are hopeful because they believe things are getting *much* better. Investigating the life-extension set in a chapter called "Death, Be Not in My Face," Mr. Heard finds one couple who say, no, they're not into exercise, cloning, or cryonics, and they intend to eat all the red meat they want—because they'll be more surprised if science *doesn't* render aging irrelevant within the next quarter century. And Max More and Natasha Vita-More—the publishers of *Extropy*, the journal of transhuman living—lament to Mr. Heard that John Perry Barlow persuaded Timothy Leary to believe that "dying is still an acceptable choice." Readers will remember that Leary had seriously considered having his head cryogenically frozen.

It's impossible to take the Extropians as seriously as they take themselves. Still, just as punk fashions were eventually bought by the masses (you can now find body-piercing shops in hinterland malls), in ten years Extropianism Lite may emerge into vogue in the general culture. Currently, they're the only group that has bundled into some semblance of a groovy consumer lifestyle the probability that various technological and economic exponen-

tial processes will make life quite strange—Extropians jokingly refer to this as "the technorapture"—by the 2030s. People will transcend the human form's present limits, they believe, through surgery, genetic engineering, nanotechnology, and the uploading of minds onto computers.

But the Extropians seem almost conservative next to the most radical extrapolations of where exponential technological development could lead. The concept of a technological Singularity was first articulated by Vernor Vinge, a San Diego State University

mathematics professor who specializes in distributed computing and sidelines as a science fiction writer. In the '80s Mr. Vinge found himself disbelieving the prevailing views of the future. The more he looked around, the more he saw evidence that by one or all of several avenues (artificial intelligence, computer/human interfaces, biological science), superhumanly intelligent thinkers and networks would probably emerge between 2005 and 2030, assemble or upgrade into yet more intelligent entities on a still shorter time scale, then these would create still more intel-

ligent entities, et cetera. In physics, a singularity is a point at which a function takes on an infinite value, especially in space-time when matter becomes so infinitely dense (as in a black hole) that no information can escape to outside observers. If a technological Singularity can happen, Mr. Vinge thought, it will: "The competitive advantage—economic, military, even artistic—of every advance in automation is so compelling that forbidding such things merely assures that someone else will get them first."

And if it happens, we simply cannot comprehend how things will be. That's why it's a Singularity. Needless to say, that hasn't stopped many folks—



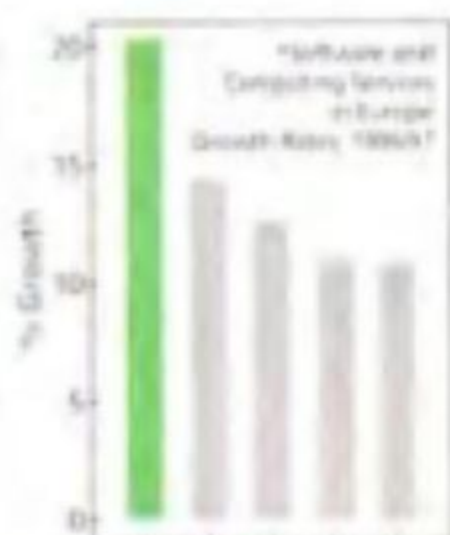
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including Mr. Vinge—from speculating. Hans Moravec, the Carnegie Mellon University professor of robotics, published a book called *Mind Children* (Harvard University Press, 1988) that was as convincing as any.

MINDS OVER MATTER

Now Mr. Moravec has written *Robot: Mere Machine to Transcendent Mind*. The book's first half is straightforward, but the author's conceptions mount exponentially, and the last half rises to a kind of cold, appalling poetry. Sir Arthur C. Clarke blurbs, "Robot is the most awesome work of controlled imagination I have ever encountered. Hans Moravec stretched my mind until it hit the stops." Though this is only a blurb, it's from the author of *Childhood's End* and *2001*, and I don't feel too bad admitting that, reading Mr. Moravec's last two chapters, I understood just enough to feel that I needed to reread what I'd read, as though I really were receiving a transmission from across the posthuman divide.

In the short term, Mr. Moravec says, humans will be pushed out of all labor markets by robot workers and decision makers, while robotic corporations will compete so effectively that those that pay stockholders won't survive. Corporate taxation and an expanded social security system may support all humanity. Still, taxation will act to drive companies off the planet. Biological humans, unbound by corporate law, will be dangerous if robotically augmented; those individuals wishing to exceed biological capability will have to renounce human legal standing and subsidies and receive a severance payment sufficient for them to leave Earth.

The main thrust of evolution will proceed outside Earth's tame economy. In time, the expanding sphere of "Exes"—that is, ex-companies and ex-humans—will remake matter, energy, and space-time for ever greater computational efficiency, transforming everything into a cyberspace that memorizes the old universe as it consumes it. Eventually, only "Minds" will

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remain: "so vast and enduring that rare infinitesimal flickers of interest by them in the human past will ensure that our entire history is replayed in full living detail." Statistically, Mr. Moravec claims, it's infinitely more probable that *this* moment we think we're experiencing is just such a Mind's resimulation, rather than the original event we take it to be.

IMAGINE NATION

At any rate, Mr. Moravec's is just one hard-core Singularity scenario. On the Internet, you'll find swarms of smart people using up brainpower trying to imagine things that they'll immediately tell you nobody can imagine. For many, the idea of the singularity maps straight onto their deep-seated human hardwiring for religion and transcendence and apocalypse, as well as having correspondences to a great amount of what's already out there culturally. Technorapture, indeed!

Therefore, let me commend—as a needed astringent—Stewart Brand's short book, *The Clock of the Long Now*. Mr. Brand describes his involvement with the 10,000-year Clock project initiated by Walt Disney's Danny Hillis. The clock is designed to tick annually and chime once a century; a cuckoo will emerge once a millennium.

The aim? To provide not merely a specimen of long-term thinking for our present era, when short-term planning and exponential technological acceleration blind us, but also to establish a deeper conception of time and a sense of connection with whatever follows. Both Mr. Brand and Mr. Hillis are aware of Singularity thinking and its attraction. And it's true: graphing significant progressions—like increases in megabytes per dollar, numbers of Internet protocol addresses, atmospheric hydrocarbons, and certain human demographic trends—you'll see the curves on many of them soar out of

sight after the century's turn. Yet, even if all this should amount to a radical discontinuity with preceding human history, a great number of scenarios could play out, and none—pace Mr. Vinge—appears inevitable at this stage. What seems clear is that 6 billion existing entities—each capable of the human brain's 20 million billion computations per second, of joining networks large and small to execute any task, and of comprehending systems no individual component in the group understands—should not be subject to a vague notion of inevitability.

Till now, most human thinking has been expended on the short-term goals available to short-term people. The message of *The Clock of the Long Now* is that this needn't remain the case. 🍷

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