

Doomsday

How the World May

Homo sapiens may receive its evolutionary pink slip by 2050, according to authors tracking "spikes" in technology and population.

By Richard Eckersley

Apocalyptic futures may be in store by the mid-twenty-first century. A combination of technological change and population growth could obliterate humankind—or replace it with a superior species.

At an international futures conference in Perth, Australia, in 2000, science writer Damien Broderick described a view of the future drawn from his book, *The Spike*. He predicted that by 2030 to 2050 developments in computers, genetics, and nanotechnology will produce a period of high-speed change on a scale that humans have never experienced.

The "spike" could result in human obsolescence, transformation, or transcendence. It could mean, as computing power continues to obey Moore's Law and doubles approximately every 18 months, the rapid emergence of superintelligent, conscious machines that leave humanity in their evolutionary wake. Or it could result in bionically and genetically enhanced superbeings who are effectively immortal.

Broderick has an optimistic view of the spike, arguing that things are likely to turn out for the best because there will be neither a reason nor the means to harness the new technologies to exploit and oppress. But he admits it is not clear that "there's any path at all for us mere humans on the far side of the Spike's looming wall."

One Is Not Enough

A second spike is looming within the same time frame—a spike in the population of a plague species, *Homo sapiens*. Our numbers, having grown exponentially, collapse when humans overwhelm the capacity of the earth's habitat to support us. In his book, *The Spirit in the Gene*, Reg Morrison argues that the population spike will erase humanity. He says evolution ensures this outcome for any species that becomes too dominant and reduces the earth's biological diversity.

With another 30 to 50 years of population growth (despite the declining birthrate), and the accelerating rate of energy and resource consumption, we seem to be headed for "an environmental *coup de grace*" in the second half of the twenty-first century, according to Morrison. "We are facing precisely the same conclusion that all mammal plagues eventually face—a hormonally orchestrated autodecline followed by an environmental backlash that cleans up most of the stragglers," he writes. Populations of rodents, including mice, voles, and lemmings, sometimes show this boom-and-bust pattern.

Both spikes have intriguing theological dimensions. Broderick's spike of "technological singularity" could result in worship of the event itself: "While I continue to insist that religion, regarded literally, is the wrong interpretive filter to place over the Singularity, the iconographies of a millennium of richly embroidered sacred art do yield a suitable set of metaphors for the strictly unimaginable," he writes. The religious di-

mension might take an alternative form of stellar intelligences and cosmic-scale engineering—of other powers in the cosmos, even now, "who have passed through the veil of the Spike," their physics being "to ours as ours is to Aristotle's, or an ant's."

Morrison's population spike has theology at its core. He argues that our genes have bequeathed us a self-destruct mechanism: our spirituality. The tendency to spiritualize our existence has been crucial to our success as a species, but will be lethal in the long run, he argues. "Only our obsessive yearning for significance, spirituality, and the supernatural could have blinded us to the dangers of overpopulation and environmental degradation and prevented us from taking sufficient precautions to avoid it," writes Morrison. He notes that he is in the curious position where, for his thesis to be true, it must be generally disbelieved.

The two spikes share a symmetry: Both are the result of exponential growth—one in technological power, the other in human numbers—and both are forecast to occur at about the same point in the future. Maybe we will see the evolution of a new form of intelligence just as its progenitor—*Homo sapiens*—reaches its zenith and burns out like a metaphorical spaceship jettisoning its booster rockets as it sets off into the universe.

Responding to the Spikes

The immense scale of these futures tends to excite fantastic visions. But how might we actually respond to these imminent spikes, each of

Scenarios:

Go On Without Us

which has profound implications for human civilization? At least three distinct scenarios are possible:

1. Surrender and abdication. The scale and speed of change is so great that people will give up any hope of trying to manage it. The impotence of government or any other human institution in the face of such change will undermine our already weakened faith in them, leading to further political disengagement and an even greater focus on individual goals, especially hedonistic ones. The result could be a period of chaotic change.

2. A fundamentalist backlash. The technological "fundamentalism" that the singularity represents will trigger a desperate response by religious or national fundamentalists, to whom it is deeply offensive. They will use every means at hand to op-

pose it, including biological or nuclear terrorism. A population crash could generate a different sort of fundamentalist revival, where fundamentalists interpret the spike as the act of a vengeful God.

3. A new universalism. In this more benign outcome, one or both of the spikes help to create a new universal culture, a new sense of human solidarity and destiny, and a resurgent spirituality. Set against such momentous events, our differences become petty, our present priorities trivial. Only the most fundamental aspects of our situation matter.

Both spikes are highly deterministic—Broderick's technologically, and Morrison's biologically. There is a strong element of inevitability about their scenarios, which I would challenge. As indicated in response "3," I

also think that spirituality—a deeply intuitive sense of relatedness or connectedness to the world and the universe in which we live—is crucial to meeting the challenge of the spikes.

Nevertheless, the "technological singularity" and "plague species" scenarios, along with our response, contain several important lessons. The spikes are real possibilities; they

A hungry horde: Locusts devastate rice fields in the Philippines in 1994, despite a farmer's efforts to ward them off. Locusts are thought to swarm only when their environments become unsuitable for their growing populations. If human population spikes by 2050 as author Reg Morrison suggests, we could become a doomed "plague species" by overwhelming the capacity of earth's habitat to support us.



are not events in the far distant future, but could occur within our lifetime or that of our children. Even if we regard them as too extreme, and therefore improbable, they can still serve as metaphors for contemporary social, technological, and environmental trends—as stories that compel us to consider much larger visions of the future.

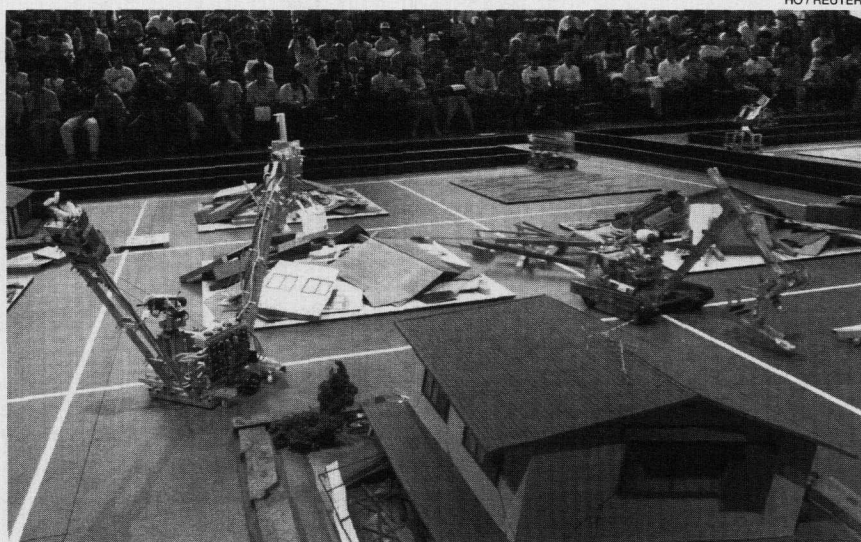
Thinking Like a Futurist

So far there is no recognition of system-changing “spikes” in the current political debate about the world we are creating. Government and business are dominated by linear optimists who believe that human life will keep getting better if we continue on our current path. Opposing them are linear pessimists who believe that life will inevitably get worse. Although they anticipate dramatically different outcomes, the advocates of both extremes are thinking within the context of “business as usual.”

We need to adopt instead the mindset of most professional futurists and become systemic optimists—those who believe that life can get better, but only if we fundamentally alter the way we think and do things. We need to embrace whole-system change.

One technique for creating future scenarios is to express key variables or uncertainties as dichotomies and then construct scenarios around them. Two such contrasting scenarios, based on inner- and outer-oriented perspectives, might be labeled “cheap thrills” and “inner harmony.” They occurred to me on a recent family holiday to Queensland, where I spent time in a theme park called Dreamworld and a Buddhist retreat, Chenrezig.

Like all huge adventure centers, Dreamworld is a good metaphor for “cheap thrills”: the preoccupation of modern Western societies with forms of consumption that offer pleasure, fun, and excitement. The Buddhist retreat, Chenrezig, represents the “inner harmony” scenario, with its tranquility and the Buddhist recognition that suffering is rooted in the unceasing desire for more. It challenges visitors accustomed to the Western perspective to develop a



new awareness of the self and its relationship with nature.

The two scenarios reflect the tension between our professed values (a desire to live simpler, less materialistic lives) and our actual lifestyle (which is dominated by the consumer economy and culture). “Cheap thrills” does nothing to address the challenges posed by the two spikes. In fact, its appeal lies in allowing us to avoid such issues: It celebrates the power of technology

Robots compete in a disaster-rescue contest in Osaka, Japan, August 2000.

High-speed technological development in the next few decades could result in conscious machines capable of surpassing humans in the evolutionary pecking order, according to science writer Damien Broderick.

to distract and amuse. “Inner harmony,” on the other hand, reflects a transformation of the dominant ethos of industrialized nations: an

For Further Reading

The Spike: How Our Lives Are Being Transformed by Rapidly Advancing Technologies by Damien Broderick. Forge/Tom Dougherty, www.tor.com. 2001. 380 pages. \$24.95. (Order online from www.wfs.org/specials.htm.)

Australian critic and interdisciplinary scholar Damien Broderick argues that phenomenal scientific breakthroughs are changing how long we live, where we live, how we communicate, how we work, and what we do.

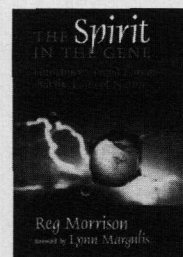


The acceleration of technological developments is leading us to a singularity, or Spike, a moment in history when unimaginable

changes will forever alter—or destroy—humanity, he argues.

The Spirit in the Gene: Humanity's Proud Illusion and the Laws of Nature by Reg Morrison. Comstock/Cornell University Press, www.cornellpress.cornell.edu. 1999. \$27. (Order online from www.wfs.org/specials.htm.)

Photojournalist Reg Morrison outlines humanity's remarkable evolutionary success and shows how the development of spirituality may be an evolutionary strategy that once allowed humans to survive but has now led them to overpopulate the planet.

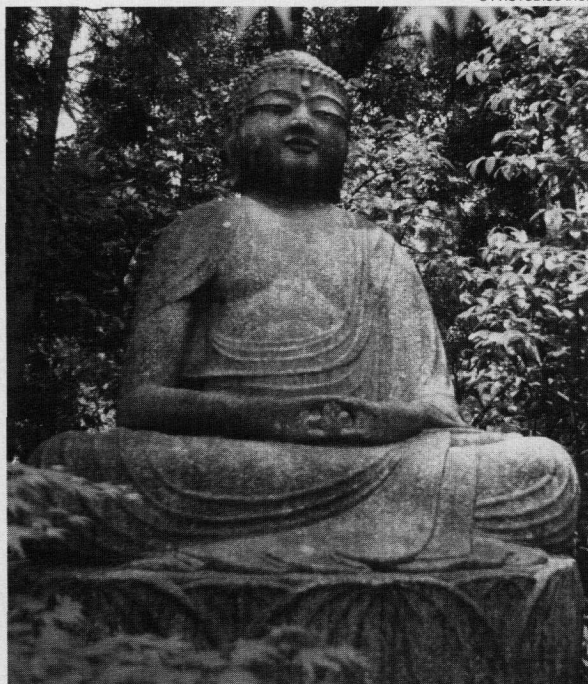


emerging global consciousness, environmental sensitivity, and spiritual awareness.

A Transitional Epoch

In modern societies, the structures of politics, commerce, and industry are still driven by the old ethos. In

the spaces between these structures, at deeper levels of our individual and collective psyche, the new is emerging. We need to acknowledge this, to recognize in our social and political analysis and commentary the importance of richer philosophical, historical, and scientific insights.



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Cheap Thrills vs. Inner Harmony

Two contrasting scenarios describe society's responses to the apocalyptic futures of technological change and population growth. The "cheap thrills" scenario suggests people will be too preoccupied with pleasure and excitement—like visitors to a fun-filled theme park—to address the challenges posed by "spikes." The "inner harmony" scenario (symbolized by the Buddha statue, left), represents humanity's potential to forge a simpler lifestyle of global consciousness, environmental sensitivity, and spiritual awareness.

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In his book *Coming to Our Senses* (Simon and Schuster, 1989), the cultural historian Morris Berman concludes:

Something obvious keeps eluding our civilization, something that involves a reciprocal relationship between nature and psyche, and that we are going to have to grasp if we are to survive as a species. But it hasn't come together yet, and as a result, to use the traditional labels, it is still unclear whether we are entering a new Dark Age or a new Renaissance.

Morrison would argue that a technological singularity represents just another "genetically derived delusion" that will prevent us from escaping the fate of all plague species. Broderick suggests that it will allow us to break free of our evolutionary origins and ecological limits. The actual outcome lies in the future, of course. But both Morrison and Broderick warn us of the need to think more deeply about our situation and our destiny. Until this happens, our politics will become increasingly irrelevant to what is most important to us.

In ordinary times, it is perhaps normal for different planes of perception and understanding of the human condition to remain relatively distinct, with little "friction" or influence occurring between them. In transitional epochs, when what it is to be human is undergoing profound evaluation and radical alteration, these planes of perception need to come together in a single, interwoven, public conversation.

Ours is such a time. □



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An earlier version of this article was published under the title "The end of the world (as we know it)" in the *Sydney Morning Herald* (January 20, 2001).

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