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# The Future of Futurism

A view from the garden, looking to the stars

*“In any weather, at any hour of the day or night, I have been anxious to improve the nick of time, and notch it on my stick too; to stand on the meeting of two eternities, the past and future, which is precisely the present moment; to toe that line.”—Henry David Thoreau, Walden*

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Once California was, in the eyes of invaders arriving by ship, horseback or wagon, something like pure future into which they carried their past. I'm not standing on some Marin County promontory overlooking the Pacific as I think these thoughts, gazing out at the horizon line the ocean forms with the sky. I'm sitting in a place remade at great cost to resemble the past of other places: the Japanese and Chinese gardens at the Huntington Library outside Los Angeles. The brilliant green stands of bamboo glimpsed through an imported Japanese gate remind me of all the world history that money and immigration have brought here over the years, all the works of art and architecture, all the music and languages, all the traditions, as if Californians have been desperately trying to keep up with the past at the same time as their eyes were supposedly fixed on the future.

In previous generations, California served as a geographic focus of "Go West!" optimism, and California currently enjoys what we might call a "futures boom," offering opportunities to thinkers and dreamers who imagine decades and centuries ahead. The new devices of Silicon Valley entrepreneurs set off instant reverberations throughout our networked world even before they are real. Their visions of the future are praised or, just as often, mocked by a public that's struggling to deal with a present infused with an insistent future. But sitting here in the garden at the Huntington, I want to take a deep breath and think through this frantic futurism, for the key to understanding and coming to terms with this rush to the future, I believe, lies in the past, in the history of futurism. This "futures boom," after all, has been going on for decades now in California and is now merely taking on new forms.

Most people with a professional interest in the future talk about it with care, partly out of fear of being associated with bearded Methuselahs announcing the immanent end of the world. Even in California there has always been something "fringe" about displaying excessive optimism or fear for things to come. But futurism in California has enjoyed

increasingly frequent and successful bids for mainstream attention. The rise of organized and professionalized forms of futurism, beginning in the 1960s, was coeval with the rise of the computer and consumer electronics industries. Along with the acceleration of technological progress, we've seen a commensurate increase in the volume of tech-talk and futures-talk. Ideas with their roots in technology are deployed to address nontechnological concerns. Consider the terms "hacker" and "to hack": as recently as the 1990s, they carried associations with the criminal violation of government or corporate computers, but now are thrown around beyond Silicon Valley to conjure cleverness and the ability to solve problems either digital or analog. Entrepreneurs searching for talent hold "hack-a-thons"; activists speak of "hacking" democracy, and they mean opening up new avenues for participation within it, rather than rigging elections. Hacking enjoys a vernacular association with breaking the symbolic "code of the world" and clearing a path toward innovation.

The temporal future itself is "virtual reality" in the most literal of senses, and whether we imagine ourselves rushing toward it or it rushing toward us is an individual matter. In the sense that we all think about our personal futures and the futures of our communities, futurism is everyone's constant and quotidian practice. But *futurism* as I use the term in this essay means a professional interest in helping people think creatively about the risks and opportunities ahead. Sometimes this means selling them a particular vision of the future; and sometimes, more laudably, in my view, it means "the liberation of people's insights."<sup>1</sup> There are experts and consultants who offer predictions, forecasts, and scenarios to help us understand where a given financial market, environmental crisis, or technology trend may be headed, and others who make it their job—sometimes, notably by writing science fiction—to imagine entirely different worlds ten, twenty, or a hundred years in the future. While talking about climate change is technically just as much a form of futurism as talking about robots, the term

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is most conventionally used to mean conversations about technological progress and the way it could reshape society, for good or for ill. This may simply be due to money. Predictions about the future of technology have substantial financial implications; and, indeed, this dimension of futurism resonates with one prominent element in California's history, the promise of quick wealth by capitalizing on a newly discovered resource. Futurism is many things, but its California variation often plays between the promise of the boom and the fear of the bust (sometimes, a refusal to accept the reality of busts). The anxious desire to be part of the next big thing and not be left behind courses through California futurism.<sup>2</sup>

We can trace many elements of contemporary futurist practice back to the think tanks and consultancies that developed during WWII and grew increasingly important in the decades after. Herman Kahn, perhaps the most important

American futurist of the mid-twentieth century, whose persona inspired the titular character in the film *Dr. Strange-Love*, worked at the Santa Monica-based RAND Corporation. There he developed scenario-planning and game theory techniques with direct application to the Cold War. Even more ambitiously, his RAND colleague, the mathematician Olaf Helmer, sought to extend customary planning horizons into "a more distant future."<sup>3</sup> Helmer, along with other members of RAND, developed a method of forecasting called "Delphi," which involved the collection and cross-referencing of predictions by experts in a given scientific field. "Convergence of opinion" translated into "accuracy of prediction," writes historian Jenny Andersson.<sup>4</sup> Despite his invocation of the Oracle at Delphi, Helmer's goal was to render "fatalism a fatality." Like many futurists after him, he wanted to eliminate utopianism and dystopianism from the culture of futures thinking while devising an ultimate

## The impossibility of perfect prediction may be the secret of futurism's appeal.

scientific theory of prediction, a general theory on the model of physics that would be aided by the data-gathering and processing power of computers. He acknowledged the powerful incentive offered by the Cold War, which made American planners wonder how the United States could grow and survive in competition with the planned Soviet economy. The planning-oriented futurists of RAND and other institutions were expected to help contribute to policy recommendations. In his 1972 *The Futurists*, Alvin Toffler—coauthor with his wife, Heidi, of the most widely read late-twentieth-century futurist text, *Future Shock*—called for futurists to serve as the newest version of that classic twentieth-century figure, the *intellectuel engagé* or public intellectual. All such ideas about futurist practice and the responsibilities of futurists, of course, were subject to a question: Whose future were they trying to predict? A global future or a national one? An elite or a popular future?

Some say that you simply can't predict the future and that talk about what might happen is empty. In fact the impossibility of perfect prediction may be the secret of futurism's appeal. This is its "dark matter" or the binding element that makes futurist work endlessly interesting and worthwhile. Consider the model of the bet, a familiar, everyday sort of forecasting in which we engage without thinking of "the future" writ large. San Francisco's Long Now Foundation, which is most famous for its efforts to construct a clock that will run for 10,000 years (roughly the length of time our species has been practicing agriculture), maintains a registry of "long bets" about future events. Anyone with an Internet connection can offer predictions, and most are backed by moderate financial commitments. Many of these bets are very short term, when compared with the 10,000-year timescale the Long Now encourages the public to think about. One bet hinges on whether the average number of miles driven by Americans will rise or fall over the next ten years. Another asks whether political parties will hold their traditional conventions in the future or acknowledge that these have become nothing but theatrics. The fantasist in me imagines a world five hundred years

from now in which our early twenty-first century longshot bets on the distant future have been passed down from one generation to the next as a matter of sacred trust. But why should they care how we bet on the future, which will be their present?

The Long Now's bet registry sheds light on a hidden dynamic of wagers. Whether we make them over very short-term events like bicycle races or about longer-term developments such as the value of a basket of commodities a decade from now, what matters is how a bet holds our interest, how it establishes a link between interested parties as they collectively anticipate the future. These bets usually say more about the present than they do about the future. We might think of the futurist as a person who keeps us interested in making these bets and who acts as a kind of human "bet registry." Furthermore—and this is the thinking behind the Long Now's "long bets" project—by observing many bets, we might become wiser about what kinds of predictions are within our power to make, and what kinds are simply implausible. Making and tracking bets may actually be better tools than any philosophy or physics we can throw at the future, which absorbs all such human contrivances and resists being modeled by anything resembling a grand unified theory.

Before I came to California, I was introduced to the idea of the future during a childhood populated by the usual futurist late-twentieth-century paraphernalia: giant Japanese robots, spaceships, visits to Disney's EPCOT Center—the acronym stands for Experimental Prototype Community of Tomorrow—while visiting my grandparents in Florida. If these whetted my appetite for "the future," in some sense, they could not teach me about the gulfs of time we have to cross before reaching it, if we ever do. Like science fiction novels and films, such artifacts seemed to summon the future to me, rather than forcing me to understand the future as a radically different time in which we might live by radically different rules—if we survived at all.

It was at an exhibit at Boston's Museum of Science that I began to wake up. Based on the Scottish geologist Dougal Dixon's *After Man: a Speculative Zoology of the Future*, this exhibit examined the possible animals that might evolve out of present-day ones, given fifty million years or so. There were gigantic, whale-like penguins, huge walking bats, and many other animals whose descent from present animals was obvious even if their body plans seemed implausible. As



I walked through the exhibit, what worked on my imagination was the idea of a future without us—a world in which humans had gone extinct or left Earth for some reason, an end to what I would later learn to call the Anthropocene, at least on this planet. The lack of a human presence pushed the message home: the future does not come to us, it cannot be summoned, and if the future can be anthropocentric and relatively proximate, it can also be threateningly, inhumanly far-off, calculated on the deep time of evolution, geology or the life cycle of stars. If one very loose definition of *technology* is the use of objects to bring nature more under control, futurism could be the use of different styles of thought to cope with the sheer uncontrollability of the future. Even the minutest reduction of its immense uncertainty would be a comfort.<sup>5</sup>

My childhood and adolescence were certainly haunted by the specter of anticipated extinctions and the loss of an

environment that could support our own species: science classes in the late 1980s and early 1990s reinforced the refrain we sang along with R.E.M.—“It’s the end of the world as we know it. And I feel fine.” The song’s ironic vision of immanent nuclear war was, after the collapse of the Soviet Union, easily repurposed to communicate other worries just as wryly.

But the 1980s and 1990s, as Fred Turner points out in his *From Counterculture to Cyberculture*, also saw the publication of many cybernetic dreams, some of which had previously been nurtured in less public venues both academic and corporate.<sup>6</sup> Figures like MIT Media Lab chief Nicholas Negroponte and *Wired Magazine* head Kevin Kelly, along with Stewart Brand, guru of the Whole Earth Quarterly, the Long Now Foundation, and much else, held out the hope that computers and computer networks would revolutionize everything. Some seers promised things that have come to

pass—try visiting a doctor’s office without seeing computers everywhere—and things that have not, such as the replacement of the US political system with modes of representation that computer networks like the early WELL (the Whole Earth ‘Lectronic Link) made imaginable.

Turner points out that this optimistic view of computers was, interestingly and importantly, the opposite of their demonization by the 1960s counterculture, which figured them as soulless parts of a social system designed to process and stamp the young. The most famous California version of this idea was on display at a 1964 Free Speech Movement rally at Berkeley, when a student used a sign that mocked by imitation the punchcards of the giant IBM computers used by Berkeley’s Registrar: “I am a UC student. Please do not fold, bend, spindle or mutilate me.”

Indeed, for me the techno-optimism of the 1990s seemed like one half of the climate of millennial expectation that infused my own experience of the decade. The other half was all worry and handwringing over the environmental devastation our technological progress has wrought; we were (and perhaps still tend to be) pessimistic about the material world and optimistic about the virtual. Meanwhile, our computers were (and are) getting smaller and smaller all the time, as if asymptotically approaching the virtual themselves. The idea of technology’s ultimate self-destruction found expression in the “Y2K Virus” fantasy, and the entire cyberpunk genre of fiction and film, which got its start in the early 1980s, was a series of dark visions about computers and computer-augmented humans being made to serve the will of corporations. Many cyberpunk stories took place in virtual realities whose negative dimensions genre chieftain William Gibson captured in his term “consensus-hallucination.”<sup>7</sup> A means for representing data about the real world quickly becomes a surrogate reality.

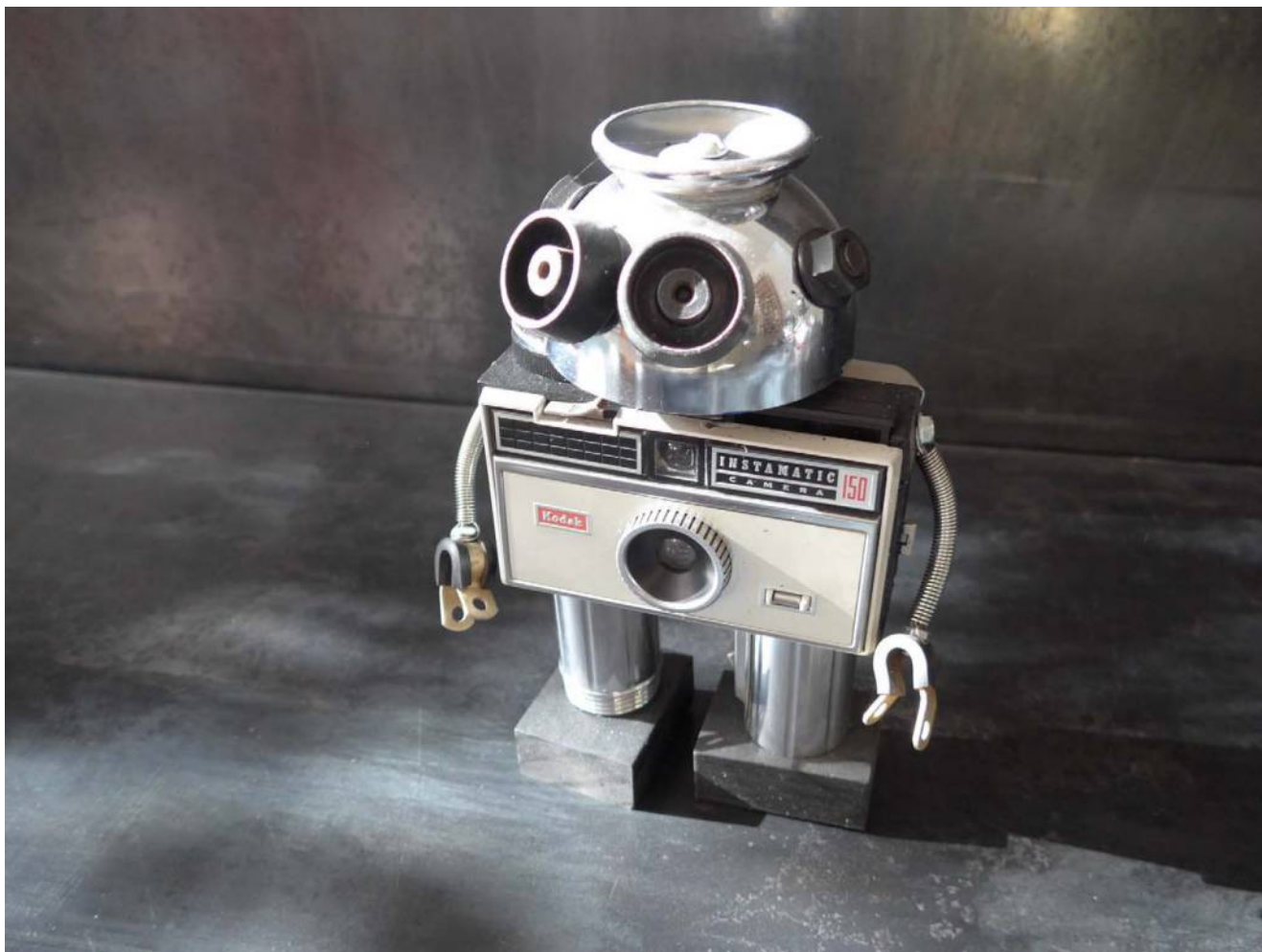
In my mid-twenties, I came to Berkeley to study history, not the future. But the future is as unavoidable in the Bay Area as bicycles, organic food, or the carefully cultivated vestiges of the late 1960s counter-culture. Not that the Bay Area has any monopoly on futures thinking. The entire state of California seems to be always in the grips of the future. Los Angeles has as much claim on the future as does San

Please do not fold, bend,  
spindle or mutilate me.

Francisco, both because of the culture industry—it’s easy to visit the shooting locations for *Star Trek* episodes in Los Angeles’s Griffith Park—and because the aerospace industry is more prevalent in the south of the state than in the north. Indeed, the phrase “scenario planning” borrows its first word from old Hollywood slang for an outline of a silent film; the sociologist and screenwriter Leo Rosten suggested “scenario” to a group of RAND scientists who picked it up.<sup>8</sup>

But it was in the Bay Area that I met computer scientists eager to create self-aware artificial intelligences, food activists hoping for a world based on small-scale urban farming, and synthetic biologists convinced that their own emerging field would usher in a future in which we use artificial organisms as an engineering substrate in place of steel, concrete, or silicone. And I met a great many self-described “makers,” who spent their spare time working with electronics, laser-cutters and, increasingly, 3D printers to build objects that are both expressive and useful. Most of them were convinced that being in the Bay Area was crucial—they saw themselves as part of tribes that were based there, whether this meant the neo-agrarians, for whom even Michael Pollan and Alice Waters are too soft on big agribusiness, or the entrepreneurial social networks that tie Stanford and Silicon Valley to the rest of the world. So much activity, so many visions of what a future transformed by these activities might look like. So many prototypes, each one a fragment of a larger artifact called the future.

There is an enormous difference between trying to predict the future and trying to build it piece by piece. In a rough but incomplete sense, this describes the tension between the predictive Cold War-era futurisms of 1960s California and futurist practice in the Golden State today. Contemporary futurist discourse draws great energy from entrepreneurial figures who stand before crowds (at a TED talk or the Aspen Ideas Festival or South-by-Southwest) and offer ideas and products that will, in language that has become both ubiquitous and tiresome, “change the world.” Where futurists once tried to broaden the horizon and inputs of planning practices, today futurists sell things by telling persuasive stories about the future. The representative figure of the futurist today is a pitchman (or woman) not a policy wonk. There is a decided shift of emphasis from knowing, on the model of foresight, to making and selling.



There is, of course, no really hard line between predictive and participatory or “fabricational” models of futurism; both have long been a part of futurist practice. In the early 1970s, Palo Alto’s Institute for the Future created games that could serve as tools to catalyze futures thinking, as did Stewart Brand. Futurism and a participatory culture of making may mesh together so well because even predictive futurism relied on making tools, either in the sense of methods for thinking about the future or computers used for accumulating and processing data sets.

Not everyone engaged in futurism has displayed the optimism of Helmer and his colleagues. Some mid-twentieth century European futurists, such as Ossip Flechtheim who coined the term “futurology” while in American exile in the 1940s, would find only peril in our contemporary celebration of makers-as-futurists. A celebrant of a utopian form of thinking in which “the future” meant outcomes that broke

radically from current trends, Flechtheim saw the techniques of organizations like RAND as merely symptomatic of bourgeois capitalism’s fetish for control. He might well have viewed our current trends as reflecting not the liberatory power of the idea of the future but simply a belief in economic growth and technological progress, both accelerated by market competition. The increasing visibility of libertarianism among Silicon Valley’s elite would hardly dissuade him, nor would the widespread belief that technological progress can fix problems that we don’t have the means to address politically.

From knowing, on the model of foresight, to making and selling.



It seems likely that a figure like Flechtheim would scarcely smile on one of the most widely discussed tropes of early twenty-first century futurism, namely the idea of a technological “singularity,” formulated first by the mathematician and science fiction writer Vernor Vinge and later popularized by inventor-turned-businessman Ray Kurzweil. According to Kurzweil the pace of technological progress is not linear but exponential. Progress itself progresses, just as in the well-known case of Moore’s Law, which observes that the number of transistors we can fit onto an integrated circuit doubles roughly every two years, doubling computing power. Kurzweil subsumes Moore’s Law within what he terms the larger “law of accelerating returns,” which he applies across all technological sectors, and predicts that the rate of change in many crucial technological areas will soon reach an inflection point beyond which everything is utterly transformed. On the graphs Kurzweil presents,

progress is a gradually rising line moving on as the years go by that suddenly shoots upward toward the mathematical heavens.

In an irony often noted by Kurzweil’s detractors, the term “singularity” denotes a point beyond which the laws of physics have broken down, creating a horizon beyond which we cannot make observations with any certainty. This is where prediction should end, in other words. However, Kurzweil foresees, by about 2045, the advent of true artificial intelligences and the merging of human consciousnesses with machines. One result of this is that those humans alive at the time of the singularity will be able to “upload” themselves to an artificial substrate and enjoy indefinite lifespans if not actual immortality—and Kurzweil has been very public about his own desire to live long enough to benefit from this, even publishing a guide to diet and health for longevity, entitled *Transcend: Nine Steps to Living Well Forever*.



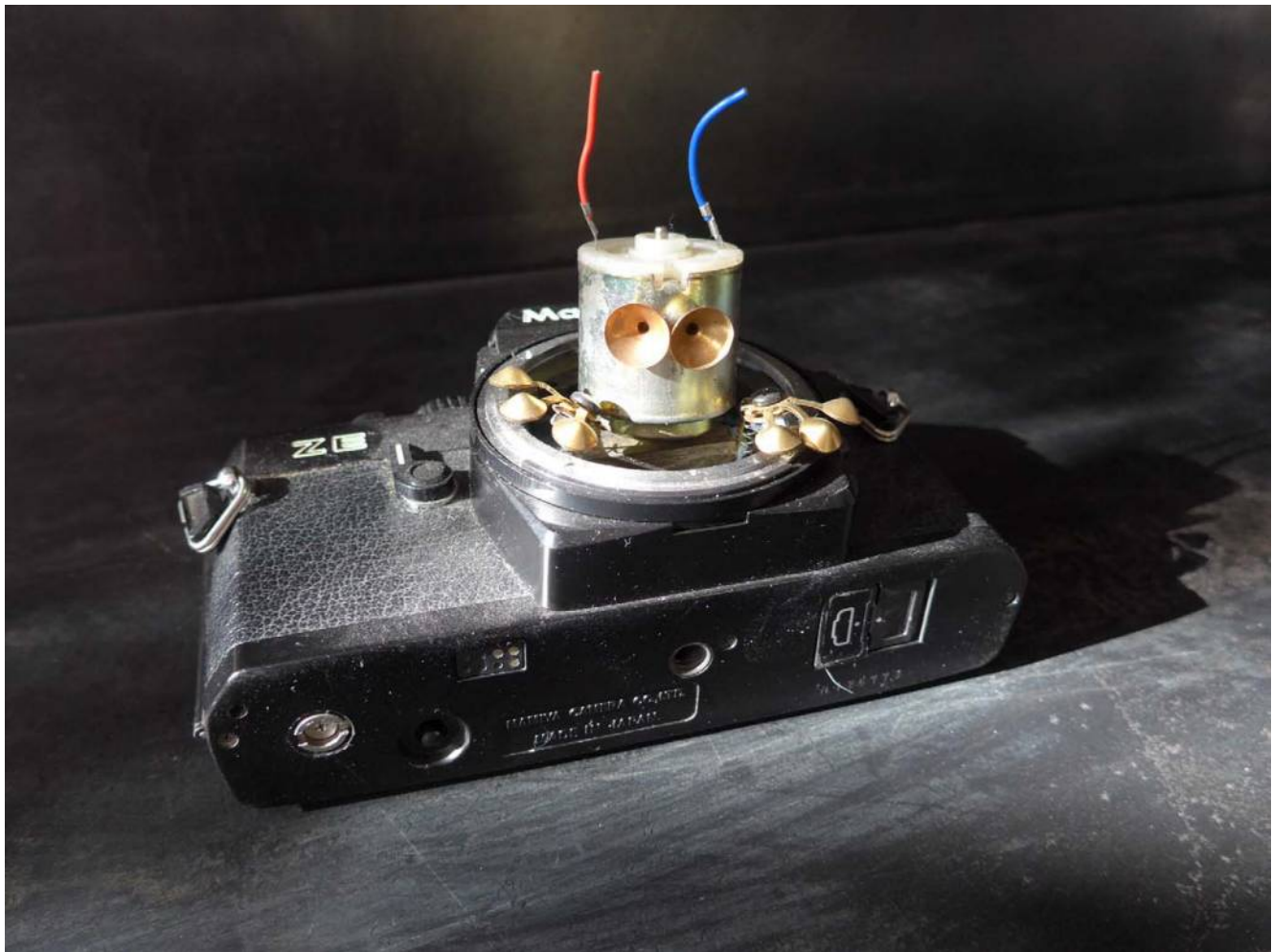


This is a futurism to defeat extinction, but—and this is the driving force of many of Kurzweil’s critics—it raises questions about what forms of human experience Kurzweil is willing to sacrifice in exchange for a cybernetic age. Kurzweil, notably, is as much a successful businessman as an inventor, and a regular feature of the Silicon Valley scene, though he has been based in Boston for most of his career. Google recently hired him as their director of engineering—with the express portfolio of guiding the construction of an artificial brain—and he has founded something called Singularity University, not far from Palo Alto. This is effectively

We assemble artifacts  
to understand both past  
and future.

a startup incubator designed to leverage the power of exponential growth and help catalyze the very trends Kurzweil predicts. While many are either bemused or offended by Kurzweil’s immortalism, critics are appalled by his belief that sheer technological progress will allow us to escape the “gravity” not just of mortality but of global warming, economic injustice, and other forms of hardship.

Places like the Huntington’s Japanese gardens remind me that we assemble artifacts in the course of our efforts to understand both past and future. The buildings and plants gathered here to conjure traditional Japan could be thought of as the historian’s equivalent of the forecasting tools and emerging technologies used by futurists. These are persuasive objects, koi ponds, and plants to conjure with. They remind us not only of the past, but of all the possibilities contained within it, only one of which was realized by the future that developed—our present. California, with its



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complex relationship with both the past and the future, can in turn remind us that both history and futurism are activities in which the present is implicated. Our interest in history is partly an interest in our origins. Our interest in the future is an interest in our destiny, and we need a sense of both the past and the future in order to guide our present actions.

It seems likely to me that artifacts—whether they are 10,000-year clocks or, more prosaically, new types of computer processor or perhaps even regenerated organs that give us a few more years or decades of healthy life—will

help us think about the future for years to come. There may not be a singularity ahead of us, but we are increasingly fascinated by the acceleration of technological change, the new objects that keep coming at us.

As I think this through, I am in northern California, standing on a platform at the Chabot Space Center in the hills above Oakland. It is night and below me stretches the East Bay, then the string of lights of the Bay Bridge and then San Francisco itself over the water. I'm here to view celestial objects—the center opens its telescopes to the public on

Friday and Saturday nights, and I often come up to gaze at one of Jupiter's moons, or a cloud of stellar dust, or the surface of Mars. There's usually a little crowd of people, and the interpreters are friendly and informative. As I look up from the platform with naked eyes, I feel small and too quick by half, aware that celestial births and lives and deaths are occurring on a scale beyond me, and that the light that reaches me describes a state of affairs from which these stars have already moved on. There will be futures without us, certainly, and perhaps some futures in which we can participate. More importantly, however, there is always a temporal horizon line—a present filled with the possibilities and contingencies—that no single futurist vision could ever encompass. **B**

#### Notes:

*Photographs of robots courtesy of Ursula K. Heise. Thanks to Nils Gilman, Benjamin Oppenheim, Shannon Supple, and Lewis Wurgafi for comments on earlier versions of this essay.*

<sup>1</sup> Peter Schwartz uses this phrase to describe the goal of the important French futurist Pierre Wack. See Schwartz, *The Art of the Long View* (New York: Doubleday, 1991).

<sup>2</sup> See Carey McWilliams, *California: The Great Exception* (Berkeley: University of California Press, 1949).

<sup>3</sup> Olaf Helmer, "Analysis of the Future: The Delphi Method," RAND Corporation, March 1967, 1.

<sup>4</sup> Jenny Andersson, "The Great Future Debate and the Struggle for the World," *The American Historical Review* (2012) 117 (5): 1411–1430. 1416.

<sup>5</sup> In his *Out of Control: The New Biology of Machines, Social Systems and the Economic World* (New York: Basic Books, 1994), Kevin Kelly makes a strong case for prediction being a modality of control. Complex systems (including the "complex biological systems" that we humans are) use prediction in order to deal with change and survive either as individuals, as family lines, or as civilizations. See especially Chapter 22, "Prediction Machinery."

<sup>6</sup> Fred Turner, *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism* (Chicago: University of Chicago Press, 2006).

<sup>7</sup> William Gibson, *Burning Chrome* (New York: Harper Collins, 2003), 178.

<sup>8</sup> Art Kleiner, *The Age of Heretics: Heroes, Outlaws, and the Fore-runners of Corporate Change* (New York: Currency Doubleday, 1996), 150.