## **Weekly Progress Roundup**

Milei's economic reforms are bearing fruit, an AI therapy trial delivers promising results, dementia prevalence is dropping in every age group, and more.

APR 06, 2025

MALCOLM COCHRAN



### Javier Milei's Argentina is rapidly becoming the exemplar of prudent economic policy

Milei's economic reforms are bearing fruit in Argentina

in the Americas. According to Argentina's national statistics agency, the poverty rate in the second half

of 2024 was 38.1 percent—a 3.6 percentage point drop from when Milei took office in December 2023. Monthly inflation is now hovering between 2 and 3 percent, down from 25 percent in late 2023.

It's worth noting that part of Milei's strategy involves unilateral trade liberalization. Since taking office, he loosened import limits, slashed tariffs, and scrapped customs

regulations, giving Argentinian consumers access to a bounty of cheap foreign goods

Researchers at Dartmouth College recently published the results of the first-ever

and forcing domestic producers to become more competitive.

First-ever trial of AI therapy delivers promising results

19 percent, respectively.

60

clinical trial of AI therapy.

with Therabot, a generative AI chatbot trained on a curated dataset of therapeutic conversations. According to a Dartmouth press release, patients with depression, anxiety, or an

eating disorder reported an average symptom reduction of 51 percent, 31 percent, and

The trial involved 210 participants who were randomly assigned to a 4-week program

Dementia is becoming less common in every age group in the United States The risk of developing dementia increases with age, so as the US population has grown older, dementia has become more common.

#### However, adjusting for age reveals an opposing trend. After analyzing long-term studies on tens of thousands of elderly Americans, a group of Duke University

scientists found that, over the past 40 years, the age-specific prevalence of dementia has fallen by an astounding 67 percent.

The charts from their paper (below) show the share of the population with dementia

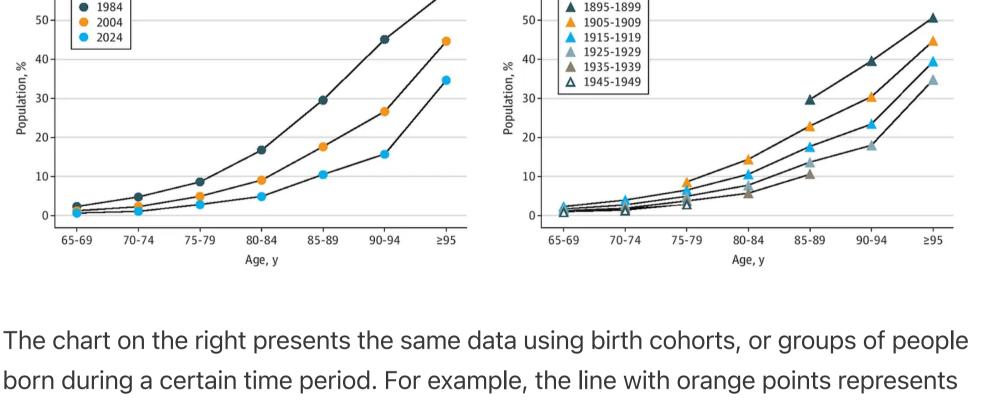
on the vertical axis, with 5-year age groups extended chronologically on the horizontal

axis. On the left, each line represents a snapshot in time. You can see that dementia has

A Percentage of population with dementia by age in 1984, 2004, and 2024 **B** Percentage of population with dementia by age for select birth cohorts

60

become less common in every age group since 1984.



people born between 1905 and 1909. In that cohort, 23 percent of people developed

dementia by their late 80s. In the 1935 cohort, only 11 percent did. For the most recent

Thanks for reading Doomslayer! This post is

public so feel free to share it.

**Share** 

1945 cohort, that's expected to fall to 8 percent.

A similar trend has been documented in Europe.

### **Energy & Environment:**

**Economics & Development:** 

Indonesia Reduces Extreme Poverty Rapidly

Bridges and Tunnels in Colorado Are Helping Animals Commute Rare Virginia Grasshopper Spotted for First Time in 79 Years

Small Modular Nuclear Reactors Could Come to Michigan in 2030

India's National Highways See 60 Percent Growth in a Decade

Health & Demographics:

Nitisinone Drug Makes Human Blood Deadly to Mosquitoes

Record-High Number of Sandhill Cranes Flock to Nebraska

Drug Reduces Mysterious Particle Involved in Heart Attack Risk

#### Strongest Evidence Yet That Shingles Vaccine Helps Cut Dementia Risk

- A Flu Strain Has Likely Gone Extinct Since 2020
- Pakistan Edges Closer to Eliminating Maternal and Neonatal Tetanus

Genomics "World Speed Record" Set in Confirming Ebola Outbreak

- FDA Approves At-Home Test for Sexually Transmitted Infections
- FDA Approves First New Antibiotic for Uncomplicated UTIs in Decades The Downward Trends in Child Mortality
- Science & Technology:
  - Brain-to-Voice Neuroprosthesis Restores Naturalistic Speech
- World's Smallest Pacemaker Fits in a Syringe
- "Arguably the Most Exciting Organic Detection to Date on Mars"
- SpaceX Launches Polar Spaceflight

## Our ancestors battled fear, filth, and fatigue after nearly every sundown. **CHELSEAOLIVIAFOLLETT** APR 05, 2025 Share

Grim Old Days: Roger Ekirch's At Day's Close,

Part 1

At Day's Close NIGHT IN TIMES PAST

ROGER An enthralling anthropology of the shadow

The historian A. Roger Ekirch's book At Day's Close: Night in Times Past provides a fascinating window into our ancestors' world. The book provides insight into everything from the nocturnal dangers they faced, such as the threats of crime and fire, to their deeply uncomfortable sleeping arrangements.

It is easy to romanticize preindustrial sleep: Surely before modern vehicular traffic, nighttime was a quiet respite, and without the blue light of smartphone screens to stimulate their brains, our ancestors were able to sink into a deep, restful state of sleep each night. "Implicit in modern conceptions of sleep before the Industrial Revolution remains the wistful belief that our forebears enjoyed tranquil slumber, if often little else, in their meager lives." Sadly, that was not the case. Before earplugs, neck pillows, white noise machines, ergonomic mattress designs, and other modern bedtime amenities, restful slumber was often evasive. Notwithstanding idyllic stereotypes of repose in simpler times, early modern slumber was highly vulnerable to

intermittent disruption, much more so, in all likelihood, than is sleep today." In 1657, the British writer and Anglican priest George Herbert wrote that "manie [many people] worke hard all day, and when night comes, their paines increase, for want of food or Most preindustrial people suffered from very high levels of stress, making it difficult to

rest." relax and sleep soundly. The 17th-century healer Richard Napier recorded over several decades that some 20 percent of his patients suffered from insomnia. "Popular dread of demons kept some persons awake," while fears of all-too-real nocturnal dangers, such as thieves, made many sleep with a weapon within reach. People also dreaded nightmares, genuinely believing them to be potentially lethal attacks by evil spirits or witches; in 1730, a guide noted that "many a life has been lost by the night-mare." In 1621, the physician Robert Burton described a common symptom of melancholia (roughly analogous to the modern concepts of anxiety and depression) as "waking, by

reason of their continual cares, fears, [and] sorrows." All social classes suffered nighttime disturbances due to poor mental health. "If, as early writers contended, the affluent suffered broken sleep because of mental stress, diverse psychological

disorders, not least depression, afflicted the lower classes." Of the urban poor in the early modern era, one observer noted, "They sleep, but they feel their sleep interrupted by the cold, the filth, the screams and infants' cries, and by a thousand

other anxieties." "Making matters worse were the narrow lanes separating early modern dwellings, with their thin walls, revealing cracks, and naked windows. Not until the eighteenth century did curtains adorn many urban portals, while in the countryside they remained a rarity." Bedsharing with family members and overnight guests was extraordinarily common; most ordinary people grew up sharing a bed with several siblings. Beds were expensive, often representing "over one-third the value of all domestic assets" in a modest household. "Inadequate bedding meant that families in the lower ranks routinely slept two, three, or more to a mattress, with overnight visitors included . . .

Entire households of European peasants, numbering up to five or six persons, occasionally shared the same bed." Even well into the industrial era, such arrangements continued in impoverished communities. Of early 19th-century Irish

whether the travelling pedlar or tailor or beggar."

household sleeping configurations, it was said, "They lie down decently and in order, the eldest daughter next the wall farthest from the door, then all the sisters according to their ages, next the mother, father and sons in succession, and then the strangers, Yet sleeping in a huddled mass was not the sole purview of the destitute. "Even wellto-do individuals, when separated from home, occasionally shared beds overnight," and among ordinary peasants, bedsharing was a given. Sharing a bed with one's servants was also quite common. "Female domestics, when sleeping with their mistresses, afforded protection at night from abusive husbands." A noblewoman

known as Madame de Liancourt advised her granddaughter not to share a bed with female servants, as such a practice "goes against cleanliness and decency," blurring social boundaries and diminishing "respect." Her attitude reflects how society's upper crust often resented communal sleep and abandoned the practice as soon as rising general prosperity gave them the means to do so. "By the eighteenth century,

communal sleep inspired widespread disdain among the gentle classes . . . In no other

sphere of preindustrial life did a mounting appreciation for personal privacy among the

Thanks for reading Doomslayer! Subscribe for

free to receive new posts in your inbox.

✓ Subscribed

In both urban and rural areas, "peasant families at night brought farm animals under

their roofs" and slept huddled together for warmth. A British term for sharing a bed

swine. In 18th-century Wales, one observer claimed that in the homes of the common

with many bedfellows was "to pig," and in some cases, the bedfellows were literal

people, "every edifice" was practically a miniature "Noah's Ark"—filled with a great

variety of animals. "In Scotland and parts of northern Europe, curtained beds were

built into walls, in part to allow animals additional room. According to a visitor to the

discarded, but the dung was removed just once a year." One shudders to think of the

barnlike smell that bedchambers took on, in addition to the chorus of barnyard sounds

that filled every night. The hubbub "from frogs and katydids to barking dogs, lovesick

cats, and needy livestock, not all of which grew familiar with time. In the dairy region of

Hebrides in the 1780s, the urine from cows was regularly collected in tubs and

East Anglia, 'bull's noon was a common expression for midnight, the hour when

A passage from the poem The Complaints of Poverty (1742) by Nicholas James

Animals and drunken commotions were frequent sources of nocturnal clangor.

to create a tumultuous chorus. From cities to villages, nighttime brought a din of

Where night watchmen were tasked with keeping the noise level down, "some

watchmen were even blamed for causing much of the noise nuisances at night

midnight, directed by the sound of village dogs, dropt upon Fontinelle."

Because many farm animals such as cows and pigs were kept inside cities, the din of

pigsties and lowing of cows cramped in small spaces mixed with the howling of dogs

animal cries. "We lost our road," wrote a traveler in early modern France, "and about

themselves. [A character in a novel published in 1771] complained, 'I start every hour

from my sleep, at the horrid noise of the watchmen bawling the hour through every

street, and thundering at every door; a set of useless fellows, who serve no other

Masquerades (ca 1723), by Ludvig Baron Holberg, the servant Henrich complains,

nightwatch. Many residents never grew habituated to their cries." Night watchmen

were variously described as drunk, "decrepit," and the "very dregs" of the "human

race." They were often viewed as incompetent or corrupt, "colluding with thieves."

The majority of households did not dare rely on night watchmen to keep them safe.

"Most households were armed, often more heavily than members of the nightwatch.

beside their weapons. "Once a family retired for the night, weapons were kept close."

Noblemen might sleep with a sword within reach, while ordinary people slumbered

near less exalted weapons. "Valued as a club was the common bed-staff, a short,

sturdy stick used in sets two on each side of a bed to hold-its covers in place." For

protection, households fashioned devices, such as shutters equipped with bells, to

rouse sleeping inhabitants during a break-in. "Watchdogs prowled inside and out,"

undoubtedly considered more reliable than watchmen by many. "It would be difficult to

exaggerate the extent of popular contempt for nightwatchmen." Businesses such as

mills, stables, and warehouses hired private "watchers" or guards, as private security

"Between the fifteenth and seventeenth centuries, European beds evolved from straw

pallets on earthen floors to wooden frames complete with pillows, sheets, blankets,

'Whether due to sleeping on a bed fouler than a rubbish heap, or not being able to

explain how much harm is done?" The poorest slept on the earthen floors of their

In Scotland and Ireland, entire families slept upon earthen floors strewn with

occupied valuable space in cramped dwellings. Of the "better sort of cabins," a

visitor to Ireland found in the late 1600s, "there is generally one flock bed, seldom

more, feathers being too costly; this serves the man and his wife, the rest all lie on

straw, some with one sheet and blanket, others only their clothes and blanket to

Dwellings in general provided more limited shelter from the elements than modern

homes. In 1703, a man named Thomas Naish related how after being awakened by a

rainstorm he was unable to return to bed "for the violence of the noise, ratling of the

III-constructed houses generated their own cacophony, owing to shrinking timber,

inclement weather made worse. Not only did keyholes whistle, but hinges and bolts

loose boards, drafty doors, broken windows, and open chimneys. All of which

Many went to bed late: "Numerous people toiled past nightfall, both in towns and in

the country." In a world of intense poverty, the "pressures of subsistence . . . drove

workers to toil late hours. . . . Of course, some laborers must have collapsed after

1777, a doctor in south-central France described peasants "returning home in the

especially in rural regions during the summer when fieldwork grew most strenuous." In

No matter how profound their exhaustion, the people of the past had little choice but

butchering stock to chopping wood to picking apples, all labor-intensive tasks able to

be performed in poor light." The full moon that occurs closest to the autumnal equinox

earned the name "harvest moon" because it provided illumination for farmworkers

In the Netherlands, "maidservants might not retire until two or three o'clock" at night.

morning. A pamphlet from 1715 in Paris by journeymen bakers fumed, "We start our

captivity. Night, the time of rest, is for us a time of torture." Weavers and lacemakers

"On long winter evenings, from Sweden to the Italian peninsula, mothers, daughters,

peasant at night [was] a weaver, some so poor that they relied upon moonlight to card

wool." "In the Fast Anglian city of Norwich, according to a census in the early 1570s,

All women were expected to stay up late working. "The good huswive's [housewife's]

candle never goeth out," remarked the writer William Baldwin in 1584, capturing the

popular notion that women should work at all hours. Such attitudes were stable for

centuries. The Book of Proverbs describes an ideal wife similarly: "Her candle goeth

not out by night." Preindustrial men, in contrast, often went to sleep at 9 p.m. or 10

"Before bed, doors and shutters were double-checked." Another pre-bedtime ritual

was hunting for bedbugs and fleas and lice: Families combed the pests out of their

settings. Early modern Britons complained of "whole armies" of bugs attacking their

Bedbugs plagued our ancestors in all seasons, but especially the warmer months. In

plagued households. The colonies of North America contended with mosquitoes and

worse. "The Virginia servant John Harrower found a snake one night under his pillow."

Rats and mice often joined the insect swarm in pestering our ancestors at night. "We

Scotland lamented in 1677. Such pests were infamously noisy. "Within some homes,

most notoriously those with wooden frames fixed in the earth, such was the tumult

"Bedding afforded notorious homes to lice, fleas, and bedbugs, the unholy trinity of

created by rats and mice that walls and rafters seemed on the verge of collapse."

early modern entomology. . . . Bedding rife with housemites triggered asthma."

In colonial Delaware, one lodger trying to sleep captured a wide array of common

complaints when he wrote of the "stink of the candle-snuff," bugs, mosquitoes, the

"As if illness, foul weather, and fleas were not enough. There was yet another, even

more familiar source of broken sleep in preindustrial societies"—a routine interval at

discovered this phenomenon through archival research and became the first historian

The initial interval of sleep was called "first sleep." Early classical writers such as Livy,

writers. "After midnight, preindustrial households usually began to stir" and entered a

medicine, physicians advised, might be taken during this interval, including potions for

children and "perform myriad chores." Men also performed chores during this interval,

Unfortunately, many people used the interval to commit crimes. "At no other time of

the night was there such a secluded interval in which to commit petty crimes: filching

from dockyards and other urban workplaces, or, in the countryside, pilfering firewood,

poaching, and robbing orchards." Others still did not fully awake after their first sleep.

"The French called this ambiguous interval of semi-consciousness dorveille, which the

"Far from enjoying blissful repose, ordinary men and women likely suffered some

bedtime." "Chronic fatigue . . . probably afflicted much of the early modern

population." Many laborers collapsed asleep from exhaustion during the day,

degree of sleep deprivation, feeling as weary upon rising at dawn as when retiring at

prompting complaints of the working class's tendency to nap: "'At noon he must have

his sleeping time,' groused Bishop [James] Pilkington of the typical laborer in the late

1500s." And a laborer's days could start quite early, further limiting the opportunity for

Virgil, and Homer all invoked the term, as did numerous medieval and early modern

routine period of wakefulness, sometimes called 'the watch.' . . . Some varieties of

indigestion, sores, and smallpox." Women often used this window of time to tend

such as Henry Best of Elmswell, who recorded tending to his cattle at midnight.

night of wakefulness. For millennia, people slept in two distinct phases. Ekirch

to (co)author an article in the discipline of sleep science. For many preindustrial

"grunting & groaning of a person asleep in the next room," a "male bedfellow," and the

might have rested, had not the mice rendezvoused over our faces," a traveler in

areas of Europe with warmer climates such as Italy, tarantulas and scorpions also

hair, picked them out of beds, and plucked them off nightclothes. "Bugs were

everywhere, especially given the proximity of dogs and livestock," even in urban

and servants turned their hands to spinning wheels or looms." Seemingly "every

Bakers began their work at night in order to provide freshly baked goods in the

days in the evenings, we knead the dough at night; we have to spend all night in

were among the workers who often labored by candlelight:

94 percent of poor women performed textile work of some sort."

to keep working late into the night. "Often there were jobs at night to do, from

returning home barely able from numbing fatigue to consume an evening meal,

rushes, straw, and heather. Not only was the cost of bedsteads prohibitive, but they

cover oneself," a Bolognese curate observed of insomnia among the poor, 'who can

coverlets, and 'flock' mattresses, filled with rags and stray pieces of wool. . . .

was more reliable than the public night watch.

peasant dwellings, with a layer of straw as their only bed:

cover them. The cabins have seldom any floor but the earth."

tyles, and for fear that my house would fall down upon me."

gave way, and roofs leaked.

evening, harassed by weariness and misery."

gathering their crops late into the evening.

p.m.

night chambers.

noise made by a cat.

people, "biphasic sleep" was the norm.

English termed 'twixt sleepe and wake.'"

rest.

Most domestic arsenals contained swords, pikes, and firearms, or in less affluent

homes cudgels and sticks, both capable of delivering mortal blows." People slept

'Every hour of the night they waken people out of their sleep by shouting to them that

they hope they are sleeping well." Indeed, despite the clangor of numerous obnoxious

purpose but that of disturbing the repose of inhabitants.' . . . In the Danish play

sounds at night, "urban denizens reserved their sharpest annoyance for the

bullocks, in full throat, bellowed for their mates. And vice-versa."

And when, to gather strength and still his woes,

Teaz'd with the sqwalling babes nocturnal cries,

He seeks his last redress in soft repose,

The tatter'd blanket, erst the fleas' retreat,

Denies his shiv'ring limbs sufficient heat;

He restless on the dusty pillow lies.

describes the quality of sleep suffered by the impoverished masses:

upper ranks of society manifest itself more plainly." The average person did not have

the luxury to pursue higher standards of privacy in their sleeping arrangements.

# Will Humanity Be Subjugated by Superintelligent Als? Superintelligent Al can serve as our guardians rather than our predators.

Share

MARTEN BOUDRY
MAR 31, 2025

O 14

natural selection?

comforting for our species.

**Evolution Everywhere** 

other worrying traits.

control its evolution.

instinct for self-preservation.



they can get away with it, most organisms will destroy rivals in a heartbeat. Given that all of us are products of evolution, we might be tempted to project our own Darwinian demons onto future artificial intelligence (AI) systems. Many folks today worry about AI scenarios in which these systems subjugate or even obliterate humanity—much like we've done to less intelligent species on Earth. AI researcher Stuart Russell calls this the "gorilla problem." Just as the mighty gorilla is now at our mercy despite its superior brawn, we could find ourselves at the mercy of a superintelligent AI. Not exactly

But here's the catch: Both humans and gorillas are designed by natural selection. Why

The reason is simple: Natural selection is a brutally competitive process that tends to

certain conditions (such as kin selection), the default mode is cutthroat competition. If

produce creatures that are selfish and aggressive. While altruism can evolve under

would an AI, which is not forged by this process, want to dominate or destroy us? Intelligence alone doesn't dictate goals or preferences. Two equally smart entities can have totally different aims, or none at all—they might just idly sit there, doing nothing.

Some AI scholars, like Dan Hendrycks from the Center for AI Safety, contend that AIs are likely to undergo natural selection after all. Indeed, this may already be happening. In the current global AI race, Hendrycks argues, AI systems are developed by "competitive pressures among corporations and militaries." OpenAI started as a nonprofit with a mission to benefit humanity, but we all know what happened next: The nonprofit arm of OpenAI was sidelined, and the company joined the breakneck AI race. According to Hendrycks, that amounts to natural selection, which means AI systems will become selfish and hungry for dominance, just like other evolved creatures.

So, will humanity soon be subjugated by selfish Als? We must tread carefully here.

People like Hendrycks are right that natural selection isn't limited to carbon-based life.

Natural selection is what philosophers call substrate neutral, meaning it can act in any

material medium no matter what it's made of. For example, cultural researchers have

applied natural selection to human culture and its elements for decades, including

technology, language, religious belief, and moral norms. Cultural knowledge is not

a gene. It is therefore perfectly possible to implement natural selection in a digital

transmitted in genes but in human brains and artifacts, such as books and institutions.

The biologist Richard Dawkins coined the term "meme" as the cultural counterpart of

environment as well. In the current AI race, there is indeed variation between different

Al systems, and the companies with the best and most powerful Als will win the race,

while the others will be left behind—sorry, Europe and Mistral. The market constantly

weeds out unsuccessful Als and preserves the best.

However, a better analogy to understand Al evolution is the domestication of animals, and this leads to very different predictions. Famously, in the opening chapters of On the Origin of Species, Charles Darwin first discusses the enormous power of artificial selection by human breeders, which was well known at the time, before moving on to blind natural selection:

As man can produce and certainly has produced a great result by his methodical

and unconscious means of selection, what may not nature effect? Man can act only

on external and visible characters: nature . . . cares nothing for appearances, except

in so far as they may be useful to any being. She can act on every internal organ, on

every shade of constitutional difference, on the whole machinery of life. Man

selects only for his own good; Nature only for that of the being which she tends.

Darwin personified nature as "daily and hourly scrutinizing" every tiny variation among

selection in many ways, it is only blind selection that tends to produce selfishness and

Thanks for reading Doomslayer! Subscribe for

free to receive new posts in your inbox.

Subscribed

organisms, just as human breeders would do. That was a stroke of genius, because

natural and artificial selection really amount to the same thing. But here's the crux:

Although artificial selection by human breeders is indistinguishable from natural

Domestication

Consider dogs. Dogs have been evolving under artificial selection for millennia, but most breeds are meek and friendly, the very opposite of selfish. That's because breeders ruthlessly select against aggression, and any dog attacking a human usually

most breeds are meek and friendly, the very opposite of selfish. That's because breeders ruthlessly select against aggression, and any dog attacking a human usually faces severe consequences—it is put down or at least not allowed to procreate. In the evolution of dogs, humans have called the shots, not nature. Some breeds, such as pit bulls and rottweilers, are, of course, selected for aggression (against other animals, not their guardian), but that just shows that domesticated evolution depends on breeders' desires.

How can we relate this difference between blind evolution and domestication to the

reproduction. If humans control an animal's reproduction—deciding who gets to mate

autonomy, they're feral. By that standard, house cats are only partly domesticated, as

most moggies roam about unsupervised and choose their own mates outside human

control. If you apply this definition to Als, it should be clear that Al systems are still

designers, programmers, consumers, and regulators, not from blind forces. It is true

decide which Als are developed and released. GPT-4 isn't autonomously spawning

that some AI systems self-improve without direct human supervision, but humans still

GPT-5 after competing in the wild with different large language models (LLM); humans

For the most part, current selective pressures for AI favor the opposite of selfishness.

We want friendly, cooperative Als that don't harm users or produce offensive content.

If consumers want safe, accurate Als, companies are incentivized to cater to those

very much in a state of domestication. Selection pressures come from human

development of AI? In biology, what distinguishes domestication is control over

with whom—then that animal is domesticated. If animals escape and regain their

preferences. If chatbots engage in dangerous behavior, such as encouraging suicide or enticing people to leave their spouses, companies will frantically try to update their models and stamp out the unwanted behavior. In fact, some language models have become so safe, avoiding any sensitive topics or giving anodyne answers, that consumers complain the LLMs are boring. And Google became a laughingstock when its image generator proved to be so politically correct as to produce ethnically diverse Vikings and Founding Fathers.

In the case of biological creatures, the genetic changes wrought by domestication remain somewhat superficial. Breeders have overwritten the wolfish ancestry of dogs, but not perfectly. That's why dogs still occasionally bite, disobey, and resist going to the vet. It's hard to breed the wolf out of the dog completely. Likewise, domesticated cattle, sheep, and pigs may be far more docile than their wild ancestors, but they still have a self-preservation instinct and will kick and bleat when distressed. They have to

be either slaughtered instantly or at least stunned; otherwise, they'll put up a fierce

fight. Even thousands of years of human domestication have not fully erased their

In Douglas Adams' The Restaurant at the End of the Universe, Arthur Dent dines at the

titular restaurant watching the cosmos' end through the window. It soon transpires

that the waiter, a bovine creature called the Ameglian Major Cow, is also the dish of

prepared to go to the slaughter bank in the back and end up on the dinner plate.

the day. Standing at the table, the animal recommends juicy sections of its body, fully

Arthur is shocked: "I just don't want to eat an animal that's standing there inviting me

to. It's heartless." His friends shrug: Would you rather eat an animal that doesn't want

to be eaten? In this story, domestication has been perfected: The cow's ultimate and

inbred desire is to be eaten. This is the level of submission AI developers should be

aiming for. Naturally, we don't want to kill and eat our computers, but Als should never resist being switched off or reprogrammed. They shouldn't have even a hint of a self-preservation instinct.

Beware of Darwinian Creatures

What would genuinely Darwinian evolution look like in the case of Als? In his book The Master Algorithm, Pedro Domingos imagines how the military might breed the ultimate soldier as follows:

Robotic Park is a massive robot factory surrounded by ten thousand square miles of jungle, urban and otherwise. Ringing that jungle is the tallest, thickest wall ever built, bristling with sentry posts, searchlights, and gun turrets. The wall has two purposes: to keep trespassers out and the park's inhabitants—millions of robots battling for survival and control of the factory—within. The winning robots get to

spawn, their reproduction accomplished by programming the banks of 3-D printers

I hope we can all agree this would be a very bad idea. It might be anthropomorphic to

project our desire for dominance onto superintelligent Als, but that doesn't mean it's

inside. Step-by-step, the robots become smarter, faster—and deadlier.

impossible to breed an aggressive and genocidal form of superintelligence. If intelligent life exists elsewhere in the universe, it might be as selfish as we are, or more so. That's not anthropomorphic, because any alien life would likely be a product of blind natural selection. If these aliens are smarter than we are, and if they have advanced technology, a real-life encounter wouldn't bode well for us. In Liu Cixin's scifi novel *The Three Body Problem*, superintelligent aliens intend to wipe us out because they fear that we earth-bound upstarts might get too smart and wipe them out. Before sending their destroyer fleet, they broadcast a threatening message across our planet: "You are bugs." That sounds like a species that was forged in the crucible of blind natural selection.

Here's the bottom line: You probably don't want to have close encounters of the third kind with Darwinian creatures that are infinitely smarter than you—whether they're made of carbon or silicon. Creating such beings ourselves would be a terrible idea. Fortunately for us, there's no indication that we're headed in that direction anytime soon. In fact, superintelligent yet docile Als crafted by humans could serve as our guardians against predatory intelligences lurking elsewhere in the universe, just as they could shield us from existential threats, such as asteroid impacts or supervolcano eruptions. When used wisely, Als have the potential to make our world safer, not more dangerous.