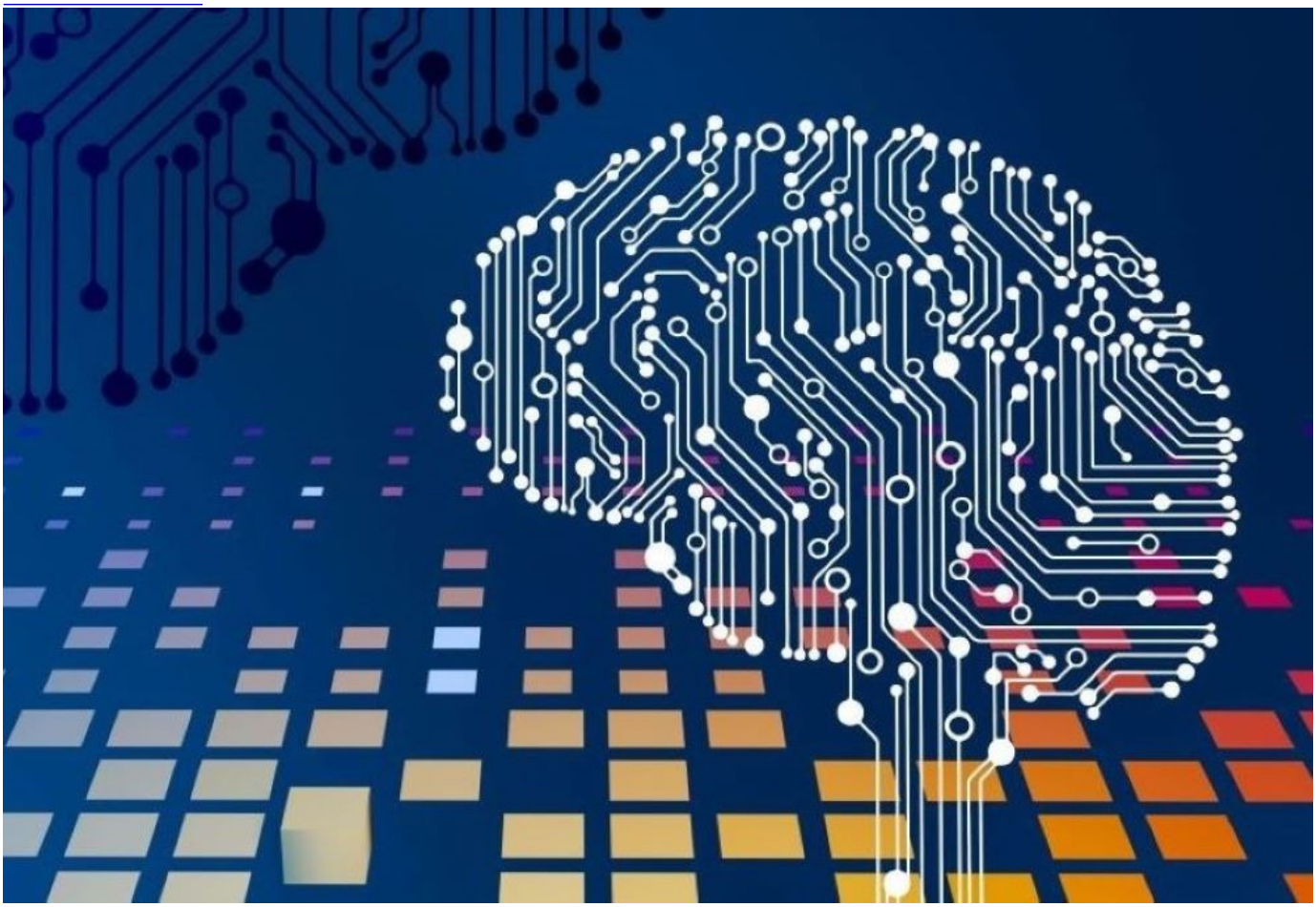
Opinion
Guest Voices



(Unsplash/Steve Johnson)



by Scott Hurd

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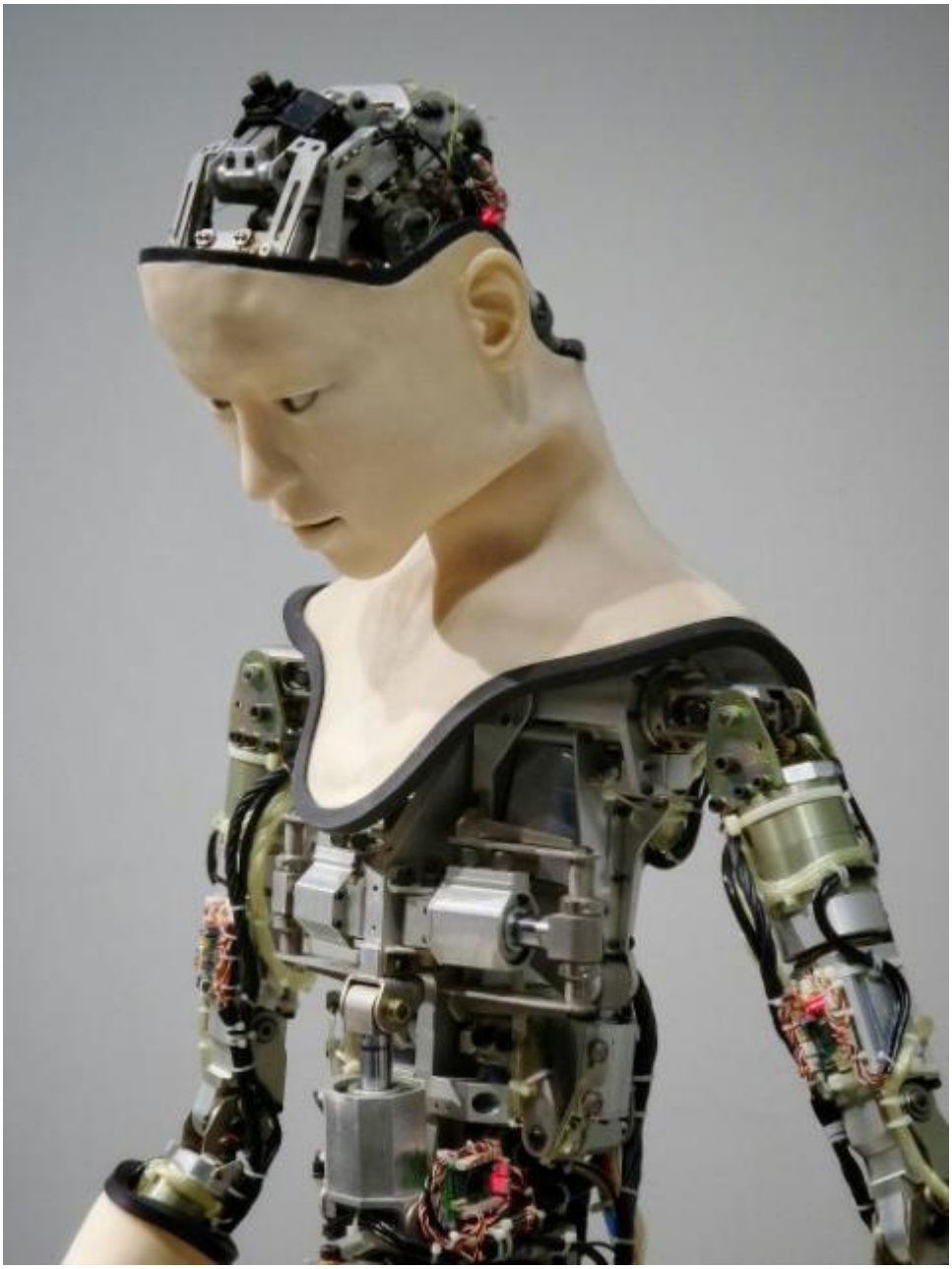
September 3, 2024

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In the fifth Harry Potter book, Professor Dumbledore is alarmed that Voldemort can enter Harry's mind to extract his feelings and memories. To protect him, Dumbledore enlists Snape to instruct Harry in the art of Occlumency, the "magical defense of the mind against external penetration." Given their prickly relationship, the lessons go poorly, and Harry's mind is left vulnerable to one with sinister intentions.

Harry Potter is, of course, popular fantasy fiction — unlike the very real advancements at mind-reading presently being made, not by an imaginary Dark Lord, but by pioneering scientists and the titans of Big Tech. Neurotechnologies that connect brains with machines are beginning to read our thoughts, manipulate our feelings, alter our memories and peek into our imaginations. Are these emerging capabilities to be welcomed as beneficial advancements? Or, like Harry Potter, should they be resisted as dangerous threats to the private sanctuary of the mind?

For people with certain disabilities, these new technologies can be life-transforming. Amputees can now control advanced prosthetic limbs with brain commands. Through "thought dictation," individuals with paralysis can type at rates similar to texting on a smartphone. Other developing innovations seek to translate thoughts into speech and display on a screen the images and stories in the minds of those who cannot talk. Deep brain stimulation through electrodes or implanted chips may help restore normal movement to those with Parkinson's disease.



(Unsplash/Possessed Photography)

Related technologies promise therapeutic benefits for those experiencing mental illnesses. Deep brain stimulation and brain-computer interfaces might help alleviate severe depression or other mood disorders. The Pentagon's research and development department, the Defense Advanced Research Projects Agency (DARPA), is exploring the use of tiny electronics embedded in brain tissue to "alter memory formation so as to counteract traumatic brain injury," which can lead to PTSD.

"It is right to rejoice in these advances," Pope Francis wrote in *Laudato Si'* about technological innovations, "and to be excited by the immense possibilities which they continue to open up before us." At the same time, given the invasive nature and growing power of human-computer connections, advanced neurotechnologies elicit grave risks. According to a 2023 address to the Vatican's Pontifical Academy for Life, Sorbonne Université's Herve Chneiweiss warns that these advancements threaten freedom of thought, autonomy, privacy, human identity and human flourishing.

These risks arise from certain aspirations of technologists themselves, which go well beyond assisting people with disabilities. Researchers at the Pentagon's DARPA, for instance, wish to "free the mind from the limitations of even *healthy* bodies" and dream of creating super-soldiers who "control robots with their thoughts." Justin Sanchez, former director of DARPA's Biological Technologies Office, has opined that "the mission is to make human beings something other than what we are." And should this sound like idle daydreaming, keep in mind DARPA's success in developing an earlier invention: the internet.

In Silicon Valley, Elon Musk's Neuralink designs brain implants to merge humans with artificial intelligence. Meta/Facebook's Mark Zuckerberg dreams of vacation memories being shared mind-to-mind with wearable brain-machine interfaces. Snapchat is exploring neurotechnologies, Apple has patented future Airpods that scan brain activity, Google/Alphabet's Verily Life Sciences is "pioneering precision neuromodulation," and Microsoft's CEO enthuses that "we're entering this new era" in which computers "instantly see us, hear, (and) reason about our intent and our surroundings."

> Nazi Germany spread propaganda through distributing free radios. What might they have done with free brain-mind headsets?
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One University of Texas researcher is "confident" that soon there will be "many devices that can read your thoughts." This onrush of brain-reading capacity gives rise to pressing ethical concerns, which is why church thinkers are actively addressing "neural privacy." In June, the Pontifical Academy for Life hosted a conference on "Religion and Neuroscience: What is the Relationship?" And in a

section entitled "Digital Violence," the Vatican's recent declaration on human dignity, Dignitas Infinita, describes technologies that "shamelessly peer into every detail of (our) lives" as "a dark side of digital progress."

The Catholic spiritual tradition has understood the mind as a private, sacred space for reflection and meditation, accessible only to God. "I, the LORD, explore the mind and test the heart," according to a classic verse from Jeremiah. St. Teresa of Avila described mental prayer as "nothing else than a close sharing between friends" — a practice through which, according to the Catechism of the Catholic Church, one reveals "the secrets of the heart." But what would change if something — or someone — intruded on that sharing between friends and was privy to those secrets?

The ability to unveil a mind's secrets would represent a "misuse" of technology and help engender "the rise of a surveillance society," as Pope Francis warned in his 2024 World Day of Peace message on artificial intelligence. Yet existing "behavior-reading" technologies are paving the way for this by imputing a person's mental state, intentions, political beliefs and sexual orientation from facial expressions, internet and social media behavior, choice of music, writing tone, eye movements and manner of speech. Last year, for instance, cameras in UK train stations used Amazon's "emotional recognition technology" to surveil unwitting passengers' feelings, according to a civil liberties group, Big Brother Watch.

"Big Brother," of course, refers to George Orwell's 1949 dystopian novel, *Nineteen Eighty-Four*, in which a totalitarian state constantly monitors its populace with "telescreens" — the very embodiment of what Pope Francis calls a "technological dictatorship." What Big Brother didn't have, however, were mind-reading lie detectors to root out "thoughtcrime." Yet such devices are currently under development. It's easy to imagine how they could be misused by repressive regimes, domineering parents, abusive spouses, suspicious employers, school administrators and even zealous church inquisitors in an earlier era.

Related: Pope Francis pinpoints moral dangers of 'amazing and powerful' AI

The ethics of melding minds and machines must also contend with the human temptation to concede decision-making to advanced computers assumed to be "smarter" and whose output is considered as being "endowed with the qualities of unquestionable certainty," as Pope Francis' cautioned the leaders of the G7 nations. In one infamous example, computers implicated UK postmasters in theft. The

postmasters pleaded innocence, but people believed the computers, ruining careers. The postmasters were later vindicated, but for some it was too late: They had committed suicide.

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The dangers of human deferral to computers are magnified by developing neurotechnologies that seek not only to "read" our minds, but "write" on them as well. Successful experiments with rats, for instance, suggest that information can be transferred from one mind to another via tech. Research with mice has discovered that their brains, when manipulated with lasers, can be tricked into believing that imaginary mental images are real. Other research with mice was able to substitute bad memories for good ones, or use nanoparticle "switches" to control appetite, friendliness and maternal behavior.

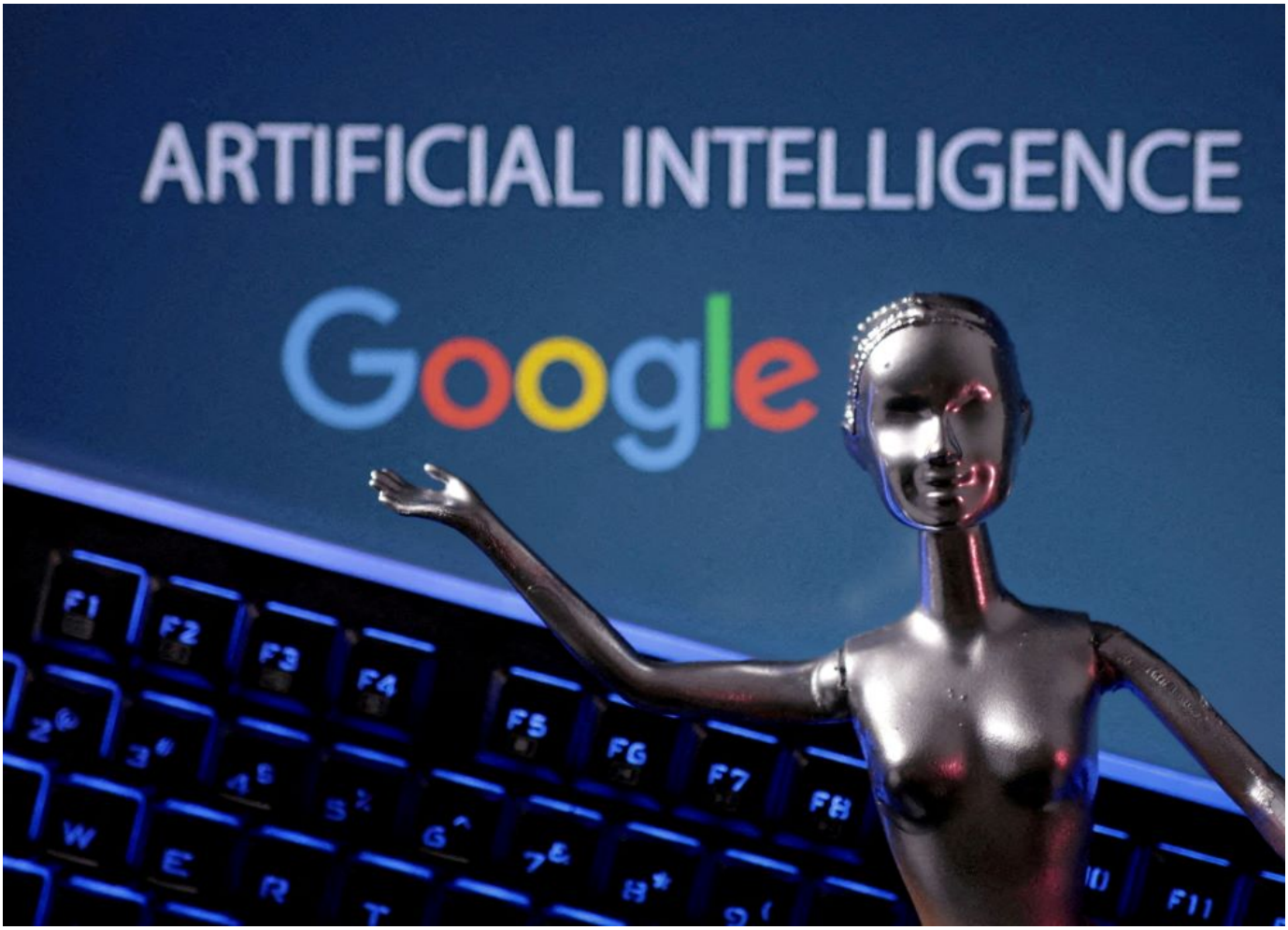


Italian Prime Minister Giorgia Meloni looks on as Pope Francis gives a speech on the benefits and dangers of artificial intelligence to world leaders attending the Group of Seven summit in Borgo Egnazia in Italy's southern Puglia region, June 14, 2024.

(CNS/Vatican Media)

If successfully adapted for human use, such "two-way" capabilities could enable dangerous new "forms of manipulation or social control" — to again borrow from Pope Francis' World Day of Peace message — through the imposition of systems and processes that reinforce the biases and worldviews of their programmers, or expand the efforts of repressive government to revise or erase history, suffocate free thought and extinguish political dissent. Nazi Germany spread propaganda through distributing free radios. What might they have done with free brain-mind headsets?

Neurotechnology's threats have led to urgent calls for regulation and new laws. A coalition of concerned scientists, The Neurorights Foundation, is advocating for rights related to personal identity, free will, mental privacy, fair access to mental augmentation and protection from bias. Chile enshrined the right to mental privacy in its constitution, and Brazil, Uruguay and Mexico are actively considering protective legislation. The European Union bans "cognitive behavioral manipulation." But the U.S. lags far behind. While medical neurotechnologies require FDA approval, other products are unregulated. However, the new Colorado Privacy Act and the proposed bipartisan American Privacy Rights Act seek to close this gap.



The Google logo and AI Artificial Intelligence words are seen in this May 4, 2023, illustration. (OSV News/Reuters/Dado Ruvic)

The United Nations is also engaged. Already its Universal Declaration of Human Rights from 1948 enshrines inalienable rights to privacy and unmanipulated thought. Building upon this, the U.N. secretary-general's 2021 report, "Our Common Agenda," addressed neurotechnology and asserted that people have a right to private thought, should not be punished for their thoughts, must not manipulate others' thoughts, and that it's the duty of states to create climates in which free thought can flourish. These prescriptions are echoed in the Pontifical Academy for Life's 2020 " Rome Call for AI Ethics" which three times references the U.N.'s Universal Declaration, and insists that "digital innovation and technological progress" must "respect the privacy of users."

"I urge the global community of nations to work together," pleaded Pope Francis on the World Day of Peace, "to adopt a binding international treaty" that ensures "the

protection of fundamental human rights." Rights that include privacy, which he specifically mentioned twice. Pope Francis may have been speaking of artificial intelligence, but his words are just as applicable to neurotechnologies — and not just because the two increasingly work hand in hand. Because like AI, while neurotechnologies may bring wonderful benefits, they also present dangers that are just as great.

Dumbledore was right to worry about Harry's defenselessness against insidious incursions into his mind. Because without protection, a mind left to its own devices may well find itself easy prey to the intentions — and the devices — of others.