

Neuralink wants to wire your brain to the internet – what could possibly go wrong?

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Credit: AI-generated image ([disclaimer](#))

Neuralink – which is "developing ultra high bandwidth brain-machine interfaces to [connect humans and computers](#)" – is probably a bad idea. If you understand the science behind it, and that's what you wanted to hear, you can stop reading.

But this is an absurdly simple narrative to spin about Neuralink and an unhelpful attitude to have when it comes to understanding the role of technology in the world around us, and what we might do about it. It's easy to be cynical about everything Silicon Valley does, but sometimes it comes up with something so compelling, fascinating and confounding it cannot be dismissed; or embraced uncritically.

Putting aside the hyperbole and [hand-wringing](#) that usually follows announcements like this, Neuralink is a massive idea. It may fundamentally alter how we conceive of what it means to be human and how we communicate and interact with our fellow humans (and non-humans). It might even represent the next step in human evolution.

Neurawhat?

But what exactly is Neuralink? If you have time to read a brilliant 36,400-word explainer by genius Tim Urban, then you can do so [here](#). If you don't, Davide Valeriani has done an excellent summary right here on The Conversation. However, to borrow a few of Urban's words, NeuraLink is a "wizard hat for your brain".

Essentially, Neuralink is a company purchased by Elon Musk, the visionary-in-chief behind Tesla, Space X and Hyperloop. But it's the company's product that really matters. Neuralink is developing a "[whole brain interface](#)", essentially a network of tiny electrodes linked to your brain that the company envisions will allow us to communicate wirelessly with the world. It would enable us to share our thoughts, fears, hopes and anxieties without demeaning ourselves with written or spoken language.

One consequence of this is that it would allow us to be connected at the biological level to the internet. But it's who would be connecting back with us, how, where, why and when that are the real questions.

Through his [Tesla](#) and [Space X](#) ventures, Musk has already ruffled the feathers of some formidable players; namely, the auto, oil and gas industries, not to mention the [military-industrial complex](#). These are feathers that mere mortals dare not ruffle; but Musk has demonstrated a brilliance, stubborn persistence and a knack for revenue generation ([if not always the profitability](#)) that emboldens resolve.

However, unlike Tesla and Space X, Neuralink operates in a field where there aren't any other major players – for now, at least. But Musk has now fired the starting gun for competitors and, [as Urban observes](#), "an eventual neuro-revolution would disrupt almost every industry".

Part of the human story

There are a number of technological hurdles between Neuralink and its ultimate goal. There is reason to think they can surmount these; and reason to think they won't.

While Neuralink may ostensibly be lumped in with other AI/big data companies in its branding and general desire to bring humanity kicking and screaming into a brave new world of their making, what it's really doing isn't altogether new. Instead, it's how it's going about it that makes Neuralink special – and a potentially major player in the next chapter of the human story.

Depending on who you ask, the human story generally goes like this. First, we discovered fire and developed oral language. We turned oral language into writing, and eventually we found a way to turn it into mechanised printing. After a few centuries, we happened upon this thing called electricity, which gave rise to telephones, radios, TVs and eventually personal computers, smart phones – and ultimately the [Juicero](#)

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Over time, phones lost their cords, computers shrunk in size and we figured out ways to make them exponentially more powerful and portable enough to fit in pockets. Eventually, we created virtual realities, and melded our sensate reality with an augmented one.

But if Neuralink were to achieve its goal, it's hard to predict how this story plays out. The result would be a "whole-brain interface" so complete, frictionless, bio-compatible and powerful that it would feel to users like just another part of their cerebral cortex, limbic and central nervous systems.

A whole-brain interface would give your brain the ability to communicate wirelessly with the cloud, with computers, and with the brains of anyone who has a similar interface in their head. This flow of information between your brain and the outside world would be so easy it would feel the same as your thoughts do right now.

But if that sounds extraordinary, so are the potential problems. First, Neuralink is not like putting an [implant in your head designed to manage epileptic seizures](#), or a pacemaker in your heart. This would be elective surgery on (presumably) healthy people for non-medical purposes. Right there, we're in a completely different ball park, both legally and ethically.

There seems to be only one person who has done such a thing, and that was a bonkers publicity stunt conducted by a Central American scientist [using himself as a research subject](#). He's since suffered life threatening complications. Not a ringing endorsement, but not exactly a condemnation of the premise either.

Second, because Neuralink is essentially a communications system there is the small matter of regulation and control. Regardless of where you stand on the whole privacy and surveillance issue (remember [Edward](#)

[Snowden](#)) I cannot imagine a scenario in which there would not be an endless number of governments, advertisers, insurers and marketing folks looking to tap into the very biological core of our cognition to use it as a means of thwarting evildoers and selling you stuff. And what's not to look forward to with that?

And what if the tech normalises to such a point that it becomes mandatory for future generations to have a whole-brain implant at birth to combat illegal or immoral behaviour (however defined)? This obviously opens up a massive set of questions that go far beyond the technical hurdles that might never be cleared. It nonetheless matters that we think about them now.

Brain security

There's also the issue of security. If we've learned one thing from this era of "smart" everything, it's that "smart" means exploitable. Whether it's your [fridge](#), your [TV](#), [your car](#), or your [insulin pump](#), once you connect something to something else you've just opened up a means for it to be compromised.

Doors are funny like that. They're not picky about who walks through them, so a door into your head raises some critical security questions. We can only begin to imagine what forms hacking would take when you have a direct line into the minds of others. Would this be the dawn of Cognitive Law? A legal regime that pertains exclusively to that squishy stuff between your ears?

What it really all comes down to is this: across a number of fields at the intersection of law, philosophy, technology and society we are going to need answers to questions no one has yet thought of asking (at least not often enough; and for the right reasons). We have faced, are facing, and will face incredibly complex and overwhelming problems that we may

well not like the answers to. But it matters that we ask good questions early and often. If we don't, they'll be answered for us.

And so Neuralink is probably a bad idea, but to the first person who fell into a firepit, so was fire. On a long enough time line even the worst ideas need to be reckoned with early on. Now who wants a Juicero?

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