

# TECHNOLOGY MUST NOT LEAVE HUMANITY BEHIND

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STRAIGHT TALKING BY

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## EXECUTIVE SUMMARY

Lord Clement-Jones CBE addresses how technology fusion with human bodies has seen major physical and mental enhancements and is now getting to a point where humans can explore the ability to exist outside the boundary of our own bodies. This and major developments in AI applications in prosthetics and other wearable high-tech can transform our life experiences.

However, Lord Clement-Jones CBE goes on to explain how there is a danger that we are creating divided societies due to unequal access to benefit from these new technological advances which mainly (or only) the rich can afford.

Other reasons for a divided society are related to who controls how data are collected, used, and owned and the relationships between persons, big tech, platforms, and governments in this regard.

Whereas some developers would argue for freedom for corporates in data governance, Lord Clement-Jones CBE argues for government regulation to ensure public trust that the developments and applications of AI and bio-tech are ethical and socially desirable. Having an ethical framework is not anti-innovation says, Lord Clement-Jones CBE. Rather it creates innovation confidence and trust.

Finally, whether AI robots shall have legal personalities is a topic for discussion.

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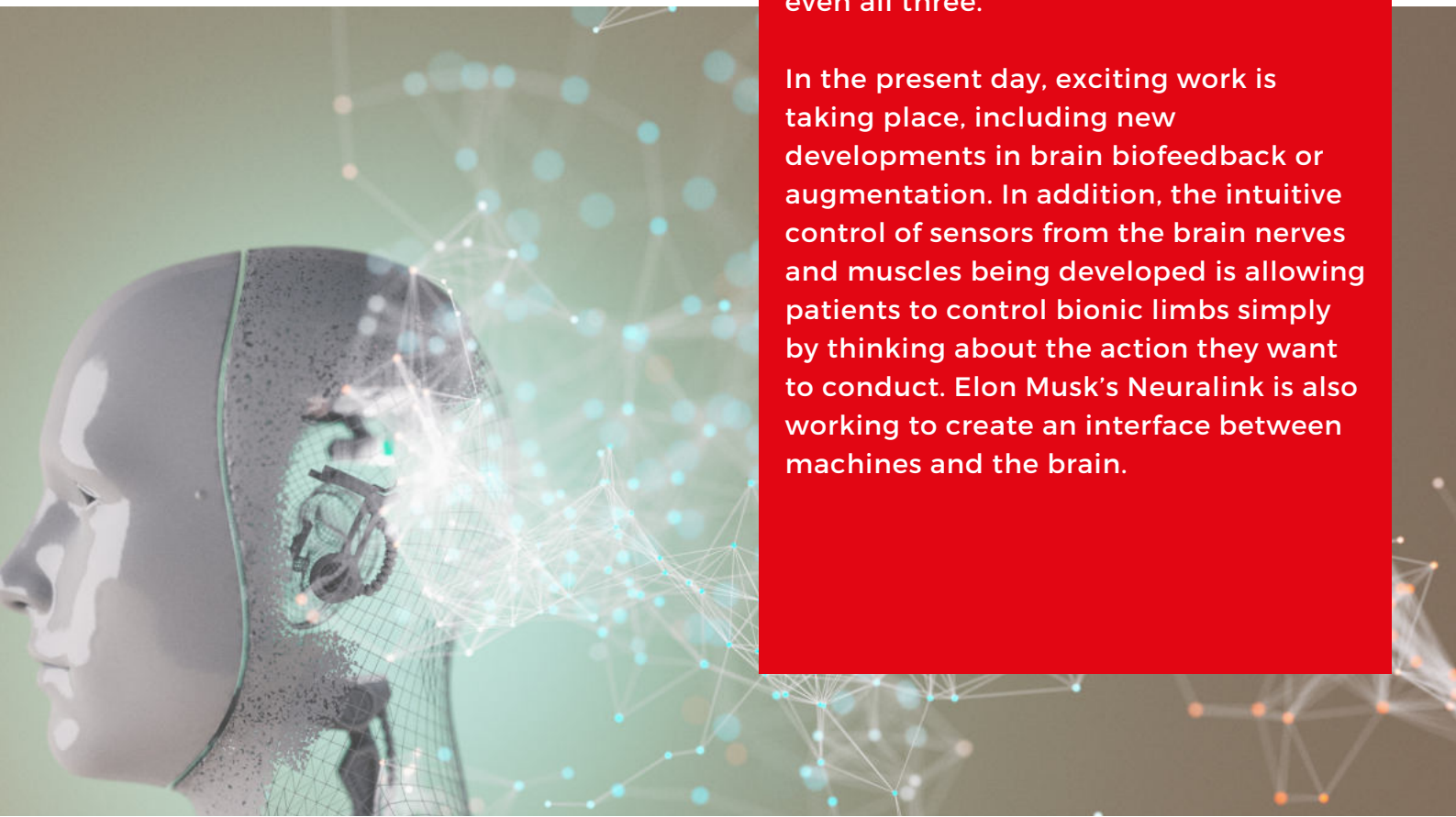
## 1. There's a long narrative tradition about humans trying to extend or enhance life:

- Oscar Wilde's 1819 novel 'The Picture of Dorian Gray', is a prime example of where his portrait ages, but not him.
- In mythology, immortality is the possession and gift of the gods that many humans desire.
- Powerful prosthetics feature in Peter F Hamilton's salvation trilogy in which we see a mixture of both life prolongation and prosthetic enhancement.

What we're now seeing is the advancement of science to make life prolongation and prosthetic enhancement a reality, although immortality is not yet possible.

Just two years ago at the World Government Summit in Dubai, I saw what felt like a chilling exhibition Human2.0 demonstrating the predicted trajectory from 2013 to 2090, starting with major physical and mental enhancements and getting to a point where (in the words of the exhibition) we would be able to explore the ability to exist outside the boundary of our own bodies. A meta body created by mapping the entirety of an individual brain and recreating it inside another form: biological, digital, or robotic or even all three.

In the present day, exciting work is taking place, including new developments in brain biofeedback or augmentation. In addition, the intuitive control of sensors from the brain nerves and muscles being developed is allowing patients to control bionic limbs simply by thinking about the action they want to conduct. Elon Musk's Neuralink is also working to create an interface between machines and the brain.



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## 2. Billionaires

So, science and technology will march on, and we need to be prepared for the ethical and societal implications. We now have the prospect of the rich, or those in riches societies, being able to enhance or replace parts of the human body and pay for life-extending treatments that are not available to the wider population.

A recent article in the New Statesman by Bruno Maçães entitled 'The spirit of the age: why tech billionaires want to leave humanity behind' chimed with this theme. He asserts:

**"Elon Musk would be able to use radically new technologies to extend his lifespan by centuries. The rest of us? Well, tough luck. Money is the portal, taking the happy few across to the technological self"**

There is clearly a fascination about life extension and anti-ageing among billionaires.

**Amazon founder Jeff Bezos, PayPal founder Peter Teal and Oracle's Larry Ellison, Google founder Sergey Brin and Larry Page helped launch Calico a Google subsidiary focused on combating aging in 2013.**



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## 3. Divided Society

We're heavily at risk of a divided society, indeed, a divided world akin to that of the Eloi and Morlocks in HG Well's 'Time Machine' - An overclass with access to life extensions and enhancements and an underclass without that access.

With regards to the use of robotic limbs it's not extreme to envision a world in which replacement limbs become the norm. One recent exoskeleton development, for example, reduces the physical effort of walking by 25%. Lowe's, a retail chain in the US is already testing the use of exoskeletons to help it start with lifting task. Work is being done to encourage the use of open source and low-cost 3D printed prosthetic limbs, organs, and standardized interfaces to facilitate access, but prosthetics can be prohibitively expensive.

If this trajectory continues it will cause a societal divide, which would be very difficult to reverse. It's clear a fusion of robotics and machines, with the human body does lead to major new ethical questions. We have nothing in the way of an ethical code or regulations to guide us. This is even before we discussed the potential increase in intergenerational inequalities, economic and political consequences, and impact on innovation of an ever-aging population.

What about the status of robots who may perform human acts as opposed to humans who have robotic capabilities?

Here again, science fiction comes to our aid. Carol Capek in R.U.R. in his 1920 science fiction play invented the word robot. In his Foundation series, Isaac Asimov posited his 'Three Laws of Robotics' which some have used as the basis for modern ethical governance codes. Also, we have the powerful popular and negative narrative of films, like the Terminator series.

There is a whole global debate taking place about AI and whether it can be a creator or inventor of intellectual property. Should robots like Ai-Da, for instance, who's just been banned from Egypt on security grounds have rights? There has been a significant legal debate on whether liability and AI matters could be settled by granting an AI its own legal personality. After all, in the 19th century, we did this for companies and corporate entities.

The European Parliament has rejected the proposal to grant legal personality for AI, stating that any legal challenges should start with a clarification that AI systems have neither legal personality nor human conscience.

Instead, the European Parliament suggested a two-stage liability, by which operators of high-risk AI would be strictly liable for their AI's damage (AIs sometimes do have significant potential to cause damage), and operators of any other AI will be liable on a fault-based assessment.

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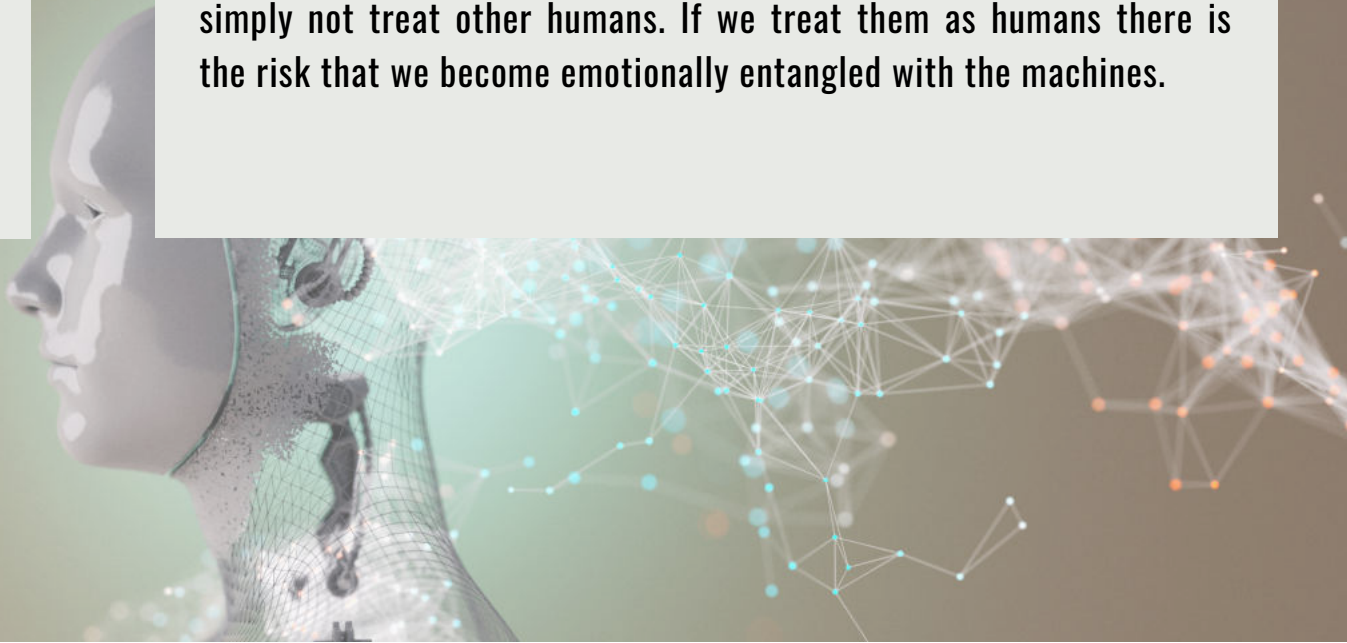
## What is the right direction?

One of the key features of modern robotics is the AI or machine learning feature - the capacity for the robot to gather data and use it to develop and make new decisions that it has not been explicitly programmed to do. Legal liability requires a party to be responsible for the outcomes of its actions.

Should a developer or user be liable where those outcomes were not necessarily foreseeable to those involved in the development or application?

If we give AI robots rights or legal personality (and machines acquire intelligence on par with our own) and begin to treat them as capable to carry out roles usually done by humans, should ethics govern their treatment?

Their lack of humanity may make us treat them in ways that we would simply not treat other humans. If we treat them as humans there is the risk that we become emotionally entangled with the machines.



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## 4. Governance of human-machine Fusion must be ethical and inclusive

I believe that a sound ethical framework should be the responsibility of those who developed the robots, and there are consequences.

Algorithms and machines are becoming increasingly capable and better positioned to replace more routine professional tasks. In this context, there is no more live question than, whether we should insist on a human in the loop when regulating AI behaviour or decisions which are made using AI.

Article 22 of the General Data Protection Regulation (GDPR) here in Europe gives us the right to demand fully automated decisions to be explained (especially important since robots have no emotions or care beyond what they are programmed to do). This is intimately bound up with the question of AI governance which looms large in almost every major jurisdiction.

You may also ask, in future, how we are going to be able to distinguish between a human with implants and prosthetics and a bio-enabled robot with implanted human memory?

How shall producers of Artificial General Intelligence (AGI) be prepared to submit public judgements on ethical and social desirability?

There is a need for an ethical context and transparency in the new technology fields in which we operate. If we're not careful, if we don't have some kind of ethical regulation of AI systems, we are going to have a divided society. Social media is both good, it emphasises some of the best things about us, but also some of the worst things, and that is exactly the point about new tech, in what we're talking about in terms of life enhancement through human-machine fusion.

If we're going to get the right type of society, we must have to have some sort of framework - but working out what that framework should be is extremely difficult. We now have AI created by AI, and areas of much greater autonomy as Artificial General Intelligence (AGI) will become. Here it is going to be even more difficult to instil an ethical framework.

I helped to write a report, three years ago, on the regulation of the ethics that we should apply to the development and use of artificial intelligence. We said we need to develop it now before Artificial General Intelligence (AGI) comes along. Brain-computer interfaces face the same issue, - as soon as they start getting a degree of autonomy, we start losing control and that's why we need to embed ethical principles in the technology that we're developing now.

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I'm actually a big fan of new technology, I think it can help with the Sustainable Development Goals (SDGs).

I have great faith in AI for good, and those of us who care for the sheer potential of AI want regulation, so we can get the best out of the new technology.

If you don't have public trust in the technology, then you're not going to see the developments of the technologies that we want to see. We're shooting ourselves in the foot if we simply insist that there should be no regulation and it's all down to the individual developer.

Is there an international institutional consensus about the ethical framework of high-tech human machine fusion, using AI, Artificial General Intelligence (AGI) and Brain computer interfaces?

I think there's a much bigger consensus about the ethical framework in Europe than there may be transatlantically (e.g. across Europe and the USA or China).

In fact, there's a growing consensus about the need for risk assessment, not only for things like online harms and social media but so that we, in a transparent way, understand what the impact of these algorithms are.

Also, various forms of AI systems (such as live facial recognition) will be used in the workplaces, including where you are procuring, adopting developing AI.

There will be a need for risk assessment or clear governance (e.g., to avoid algorithm biases), and I don't think that's going to be onerous or something that will stifle innovation. We just need to know what the developers think are the risks involved, then evaluate what those are, and then manage them. A lot of risks are about mitigation, it's not about banning or preventing.

**I simply don't believe that having an ethical framework by reference to which you assess the risks - (and in case of high risks you take certain steps to mitigate) - is anti-innovation.**



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