

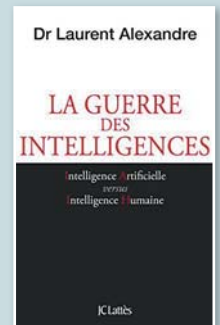
# THE GEOPOLITICS OF AI AND ROBOTICS

Interview of Laurent Alexandre  
by Nicolas Mialhe



Laurent Alexandre is a urological surgeon and co-founder of the Web Doctissimo site. He is fascinated by the issues raised by artificial intelligence, robotics and transhumanism. His latest book, *La Guerre des Intelligences* (JC Lattes, 2017), has just been published. His previous publications are *Les robots font-ils l'amour ? : le transhumanisme en 12 questions* (Dunod, 2016), and *La Mort de la Mort* (JC Lattes, 2011)<sup>1</sup>.

In this interview, Laurent Alexandre explores the geopolitical issues raised by the rise of AI and robotics. He takes a harsh view of how Europeans have fallen behind in this sphere, and paints a picture of a new type of conflict.



<sup>1</sup> The War of Intelligence; Do Robots Make Love? Transhumanism in 12 Questions; Death of Death.

## KEYWORDS

- ARTIFICIAL INTELLIGENCE
- ROBOTICS
- GEOPOLITICS
- DIGITAL GIANTS
- NEUROTECHNOLOGY
- AUGMENTED INTELLIGENCE
- EDUCATION
- EUGENICS
- TRANSHUMANISM
- GAFAMI
- BATX
- INDUSTRIAL STRATEGY

## Nicolas Mialhe: We're hearing a lot about an artificial intelligence revolution. What exactly is it?

**Laurent Alexandre:** A combination of vast databases, increasingly powerful computers and machine-learning algorithms, produced mainly by the American and Chinese digital giants, has accelerated the progression of artificial intelligence at a speed that's surprised even its promoters, the heads of Google, Apple, Amazon, Facebook, Microsoft and IBM. Google and Facebook, in particular, didn't see it coming. The first industrial revolutions were a challenge to our bodies, while AI focuses on our minds.

## N.M.: What power issues are linked to this major revolution?

**L.A.:** The industrialization of intelligence, whether biological or artificial, is turning the very foundations of political and social organization upside-down. The production of intelligence will be the source of all forms of power in the future. The battle for control over semi-strong AI will become key. It will ensure victory in industrial battles—there are no longer any sectors that do not depend on it. The example of the automobile industry's self-driving car is just the beginning. Medicine is undergoing a revolution, with doctors taking a subsidiary role to computers. The same applies to banking and even agriculture. Semi-strong AI will also make it possible to paralyze an adversary by immobilizing their economy and army. The fact is that we don't know how to regulate the geopolitical competition that will drive us to use AI to take a leadership role, regardless of the risks. Regulating AI will become a crucial challenge for international law, and will transform geopolitical strategies.

## N.M.: Will machines become more intelligent than humans?

**L.A.:** Artificial intelligence is a very important theme for the future of humanity, but if you ask the top one hundred specialists about it, their opinions differ hugely! There's never been such a lack of consensus among experts in the whole history of technology.



***“THE FACTOR THAT IS GOING TO RADICALLY STEP UP THE AI TSUNAMI OVER THE NEXT 20 YEARS IS THE DEVELOPMENT OF BRAIN-COMPUTER INTERFACES. THIS CRUCIAL NOTION HAS BEEN SEIZED ON BY SILICON VALLEY, PARTICULARLY ELON MUSK WITH THE LAUNCH OF HIS NEW STARTUP, NEURALINK.”***

Elon Musk, the inventor of Tesla and Space X, is pessimistic and worried, as is Jack Ma from China, the founder of online retail store Alibaba. Tim Cook, the head of Apple, and Facebook's Mark Zuckerberg, on the other hand, never refer to the risks of AI. IBM's senior management also takes a reassuring line and denies that it could acquire human capacities.

## N.M.: What's the “new frontier” for AI?

**L.A.:** The factor that is going to radically step up the AI tsunami over the next 20 years is the development of brain-computer interfaces. This crucial notion has been seized on by Silicon Valley, particularly Elon Musk with the launch of his new startup, Neuralink. The idea is to insert devices via veins in the neck and avoid opening the cranium. The devices are designed to position themselves between the neurons and veins so they can boost the neurons and provide access to databases or the cloud. If Elon Musk wants to win the battle of the self-driving car, he has to call on artificial intelligence. He sees the possibility of a fusion between human and machine as the only solution. He believes there's no future for the neuronal brain: only a mixed brain will be able to survive.

## N.M.: With what geopolitical consequences?

**L.A.:** Further down the line, we'll discover a new geopolitical reality corresponding to this new neuro-technological complex. And worthy sentiments risk losing us the battle. A variation on the slogan “jobs for robots, life for us” proposes task specialization. Technical professions are likely to become the exclusive domain of artificial intelligence, with humans in charge of activities requiring empathy, care and kindness: “the data tsunami for them, love for us” seems to be a sensible approach. Since we can't compete in terms of computing power, we'll turn our focus to

managing emotions. For example, in medicine this will mean that we'll let AI process the billions and billions of biological data, particularly genetic data for treating children with leukemia, while the nice nurses will be able to develop their people skills further than they can today.

The situation between AI and us is equivalent to the Ricardian law of specialization, known as the law of comparative advantage, posited by David Ricardo in 1817 based on the wine and textile trade between Portugal and England. Concentrating on what we do best is rational from a microeconomic viewpoint, but dangerous if we specialize in an area that is fragile or likely to diminish our technological and thus our geopolitical power. Holding the hands of sick children is of course fundamental, but it should not lead us to overlook another battle: the fight for neuro-technological power.

### N.M.: So what will 21<sup>st</sup> century geopolitics look like in the light of AI and robotics?

**L.A.:** Eventually geopolitics will no longer be territorial—China against California, India against China, etc.—but will reside mainly in the neuro-technological complex. We need to prepare ourselves for fierce power battles inside the huge complex that will link our brains to the AI embedded in the internet. There will be plots, power grabs, secessions, manipulations, traitors and malevolence that will make the Wannacy and Petya viruses of spring 2017 seem harmless in comparison. Right now, AI is non-existent in psychological and emotional terms, but this is a temporary situation and should not lead us to specialize human brains in “care” and abandon the neuro-technological field to silicon brains: it would be as suicidal as having your defense industry specialize in producing fireworks during the atomic bomb era.

As shocking as it may seem to my generation, the battle within the neuro-technological complex will become key to our survival as a biological species. Evidently, the kindness of pediatric nurses is essential, but it would be suicidal if the whole of humanity specialized in the emotional sphere. It's unlikely that AI will always remain aligned with us and instilled with Judeo-Christian ethics. We have to be kind, it's the basis of our humanity. But that's not all there is. The *Game of Thrones* of the neuro-technological complex will be no less violent than the TV version: ensuring that our biological humanity still plays a role in it implies knowing how to do something other than stroking the cheeks of sick children. No digital Maginot line will protect us lastingly if we're weak. Ricardo was right in 1817; he couldn't be more wrong in 2017.



Humanity's capacity to unite on the basis of common values, shared progress and the refusal to entrust everything to silicon brains is our life insurance against the emergence in 20, 200 or 2,000 years of hostile and malevolent forms of AI.

### N.M.: Let's look at some less dramatic issues. Can we really regulate AI development?

**L.A.:** Competition between businesses and between states means that we can't bring AI research to a halt. This makes the possibility of regulation extremely complicated. Elon Musk recently issued a stark warning about AI and demanded strong American regulation, but the Trump administration doesn't seem particularly concerned by the issue, preferring to focus on growth and employment. However, and most importantly, the immediate reaction from several Silicon Valley bosses was to say that it would mean the USA leaving the field clear for China to become the leading world power.

### N.M.: But our societies don't really seem ready for this revolution...

**L.A.:** A debate is emerging over unemployment and jobs along the lines of “AI and robots are going to replace people.” This is not a rational fear in the short term, for at least two reasons. The first is that it assumes we will immediately have multi-purpose robots, which won't be the case on a large scale before 2030 at the earliest. Repetitive industrial jobs are indeed under threat, but it will be many years before we see the widespread availability of multi-purpose robots capable of replacing a cleaner. Unlike the AI development trajectory — which can appear explosive as Moore's law continues to hold sway, driven by the ongoing progress of nanoelectronics — robots have developed on a more linear path. The second reason is that we're deluding ourselves, as usual, if we believe that automatization will result in the end of work: a wealth of new professions are still to be invented. In 1930, the mayor of Palo Alto, in California, wrote a letter to the US president, Herbert Hoover, imploring him to take measures to regulate the technology that was going to destroy American society and jobs. We know what happened next: Palo Alto became the epicenter of Silicon Valley and thus of the world economy.

## N.M.: Does that mean we can hope that AI produces a new wave of “creative destruction” that generates more jobs than it destroys?

**L.A.:** Just like with the previous industrial revolutions, we can imagine which professions will disappear; drivers, for instance. But we can't tell what tomorrow's professions will be. There are plenty of examples of professions today we wouldn't have dreamed of 30 years ago: digital marketing, webmasters, app developers, and so on. By definition, we can't know the professions of the future. If we could, entrepreneurs would already have grabbed the opportunity! It's also true that our societies think in terms of a status quo, without seeing that we will be able to use AI to do new things in the decades and centuries to come: conquer the cosmos, delay death, augment our brains, etc.

## N.M.: Can we expect inequalities to soar?

**L.A.:** Since AI will be cheap whereas human intelligence is expensive, the least talented and least innovative people risk being left behind. So reducing inequalities depends on reducing intellectual inequalities. And the best way to do it is by using traditional methods: education and training. But it won't be enough. I'm convinced that we'll use technology to enhance our intellectual capacities. Democracy will not survive if the current gaps between IQ and intellectual capacities persist. In a society where AI is practically free, there's room for people who are flexible, enterprising and creative. And not everyone is! It's not politically correct to say so, but it's a reality. The least talented people will struggle significantly and we will need to help them.

## N.M.: Should the domination currently being established by the Chinese and Americans in the AI race be a concern to Europeans?

**L.A.:** France and Europe have become digitally dependent: today we're dependent on the USA, tomorrow it'll be China. We mustn't bury our heads in the sand. We export our best minds to the USA — such as Yann Le Cun, Facebook's AI director, a Frenchman educated in France — and import AI via our smartphones each time we use our favorite apps. We won't make any progress if we continue to fail, whine and put in place legislation that offers consumers a very high level of protection but is hostile to manufacturers. We have to face facts: if we're a digital Cinderella, it's not because of a global plot or the digital giants cheating. It's because the giants are excelling and we're lousy. For the last 30 years, we Europeans have been blind to the internet and AI revolution. It's been 20 years of governments and regulatory authorities like the CNIL [*French National Commission for Data Protection and Liberties*], which fail to understand that a major revolution is under way. Our US and Chinese competitors, on the other hand, have a perfect grasp of the situation and have rolled out a coherent model. They're very determined. As for us, we have 28 pieces of separate legislation, equivalent to 28 CNILs. We have always prioritized consumer protection to the detriment of building up an industrial base capable of launching us

into the digital revolution. If we prevent European firms from creating, exploiting and monetizing industrial-scale databases, we will never have powerful AI players, because machines need data to learn. And AI and robotics are inextricably linked. We shouldn't fool ourselves.

## N.M.: How can Europe catch up?

**L.A.:** I'm convinced that making way for a new generation is vital. At the very least, we have to stop having political leaders who don't understand anything about technology and the data economy. Jean-Claude Juncker, the European Commission president, boasted earlier this year that he doesn't have a smartphone. Honestly, how are we meant to get anywhere like that? Until Europe appoints a geek at its head, we're not likely to have an adequate governance model. We need to climb out of the hole of denial we're in, assess the situation efficiently and get to work. Otherwise we'll go under!

## N.M.: Is our legislative model too restrictive?

**L.A.:** The French and Europeans have based their thinking on the idea that any AI produced by IT services companies would be code-based. We have consistently failed to grasp that large consumer-focused platforms harvesting vast amounts of data are what's needed. But we don't have any. We do, of course, have some successful IT companies, like Atos, but they are still far removed from the end user and so don't harvest the necessary wealth of data. If Europe wants to produce AI, it needs to provide its industrial players with the means to harvest and exploit billions of data items. It has been concerned exclusively with consumer protection and competition law without ever really trying to create a large single market for data.

## N.M.: So your solution is based on two actions, liberalizing the data market, and radically changing our education and training models, is that it?

**L.A.:** Exactly, on a Europe-wide scale. Europe is in a state of relative decline, whereas it was the world center of telecoms just 15 years ago! It has trouble understanding that it's being left behind by history and losing its power. In France, when people discuss Google and its omnipotence, the main question they ask is where the company is paying its taxes. The real challenge is to create European digital giants. Protectionist solutions are no good.