

# Artificial intelligence

How will the law begin to develop to provide a framework for this fast-developing area? **Luis Franco of Perez-Llorca** gives some answers.

**Do you think the apparently imminent arrival of driverless cars will hasten the development of the necessary regulatory, legal and insurance framework?**

Without a doubt. In fact, several countries have already started to take on the topic of autonomous vehicles: in Europe, Germany and the UK are working towards legislation for driverless cars and in the US, several states (Nevada, Florida, California, and Michigan) have already passed laws to allow the use of driverless cars.

It is important to consider that, up until now, automated machines have only been present in a limited number of scenarios, in which the environment has been controllable and access has been relatively restricted (for example in scientific labs and factories). However, in the case of driverless cars, the legislator will be faced with an automated machine present in the public domain. Moreover, far from simply performing a given set of specific and predesigned tasks (like, for example, an assembly robot in a car factory), driverless cars will be evaluating and reacting with their environment and, in a way, acting upon their own decisions.

Furthermore, road transport, in all of its manifestations (freighters, public transport, private cars, etc.), is affected by a wide range of laws and regulations, which will all have to be reviewed and amended, such as, for example, driving licenses, vehicle registration certificates, traffic regulation, insurance policies and liability in the event of damages or injury.

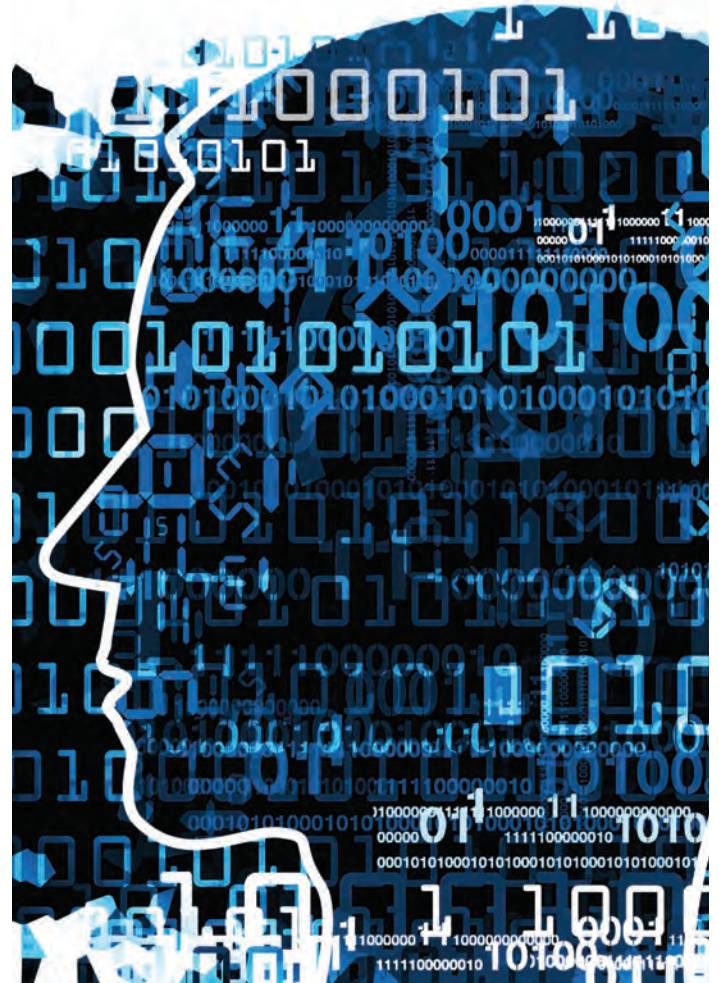
In short, I believe that driverless cars present a superb opportunity and a test ground for developing the necessary regulation for AI.

**How do you expect regulation to develop as we move to greater reliance on robots and AI?**

As already mentioned, I believe that road and air traffic regulations will likely be among the first regulations to be amended to take into account driverless cars and drones, given their imminent arrival. In addition to legalising the use of such vehicles, legislators will be handed the task of considering the implications of accident liability and, in accordance with these new terms, insurance regulations will also have to be adapted.

With regard to insurance regulations (already under review in the UK in order to take into account driverless cars), I believe that the most significant matter in hand will be determining who exactly should bear the cost of covering damages caused by autonomous vehicles when no malfunctioning was involved; that is to say, when damage occurs as a result of current technological advances not being able to predict or avoid the damage. In these cases, I believe that a reasonable solution would be for the manufacturer and owner to share the cost of insuring that risk although perhaps not in equal proportion, given that they are both assuming said risk and profiting from the vehicle. Another possibility would be to regulate this risk in the same way in which natural disasters are insured (given that there would be no one to blame for causing the damage), either through reinsurance policies or through publicly funded coverage.

Personal data protection regulations will most likely need to be reviewed in the short term, considering the increasing capabilities of technological systems in automatically managing and learning from information, as well as the ever expanding amount of information available on the Internet. In relation to these points, there are a number of closely related issues that I believe that regulators should take into careful consideration, along with the questions that they pose, namely



the sharing of information between systems (Is this possible? Under what circumstances and or conditions may the information be shared? To what end may that shared information be used?) and the access to information by the system itself (How can systems access information? Which kind of information can they manage?).

**Is there a danger that regulators will become too cautious?**

I would not be surprised if regulators become too cautious. After all, there will always be those that distrust new technologies and will therefore try to limit their use (consider for example the reactionaries of the 19th century after the industrial revolution).

I personally believe that AI has the potential to bring about great advances in science and, therefore, be instrumental in moving humankind forward. For this reason, it is important that we facilitate the development of AI with open minded regulations. However, as several renowned scientists have pointed out, AI also brings with it certain risks. Therefore, I believe that regulators should promote steady, but careful, development of AI, especially in certain areas.

One such area is the establishment of safety standards for driverless cars, to ensure that the vehicles have been thoroughly tested before these vehicles are allowed to drive on public roads.

Another field in which legislators should be extremely careful is within the arms industry. A number of associations and individuals currently demand a complete ban on the development of fully automated weapons (for example, the International Committee for Robot Arms Control, Human Rights Watch and Harvard Law School's International Human Rights Clinic). I do not believe that we should completely dismiss the notion, given that AI weapons may be able to significantly reduce the number of collateral and civil casualties that we

## AI: A new area of law

see in armed conflicts today. However, I believe that weaponry is most definitely not the best testing ground for AI. Actually, it is quite the opposite, considering the dire consequences of any mistake made in this. Therefore, I believe that the development of autonomous weapons should be left until AI is sufficiently mature and reliable enough to avoid accidents.

**Do you share the concerns that Professor Stephen Hawking (“The development of full artificial intelligence could spell the end of the human race”) and IT entrepreneur Elon Musk have expressed over AI? Why or why not? How can lawyers and regulators play a role in reducing these dangers?**

I do not think that we can fully disregard these prospects, but my approach is quite different to that of Professor Hawking and Elon Musk; I believe that such a risk is highly remote.

Both Stephen Hawking and Elon Musk have addressed the matter from the perspective of Darwin’s theory of evolution (i.e. the survival of the fittest). Indeed, during the same interview as that quoted above, Professor Hawking also states that “Humans, who are limited by slow biological evolution, couldn’t compete [with AI], and would be superseded”.

Such an approach from their perspective is logical, as they are both scientists, however, I do not consider this to be the most appropriate way of comprehending this matter. We must be aware that the dangers to which Professor Hawking refers (the extinction of humankind before a more evolved species) can only come to pass in the event that truly sentient machines can be developed.

Whether sentient robots can be developed or not is a highly controversial issue within the scientific community. Mark Bishop, Professor of Cognitive Computing at Goldsmiths, University of London, for instance, is against the idea, as he believes that “there are some key human abilities, such as understanding and consciousness which are fundamentally lacking in so-called “intelligent” computers”. I am certainly not qualified to offer an opinion on this matter from a technical point of view, however I am inclined to think that sentient robots are a possibility.

Consider the human brain: we know how it is built and, more or less, from a biomechanical point of view, how it works (electric impulses pass from neuron to neuron to specific areas in the brain, which control specific functions) but, ultimately, we do not know what makes us sentient (and, therefore, human), nor, concretely, what gives us our own personalities. Taking this into account, it is not inconceivable that someone may be able to create a synthetic brain which may be able to develop sentience. In fact, recent investigation on AI involves working on artificial neural networks).

However, even if we assume that the creation of sentient machines may be possible, I still believe that the risk of being superseded by them is extremely unlikely. As a matter of fact, I believe that in such an event, Darwin’s theory would become obsolete, and that the matter should be approached from a sociological point of view. Darwin’s theory is primarily applicable to nature, where the fittest survive and the weak do not (even amongst the same species). However, the development of human society has completely changed the rules of evolution, at least amongst humans, and there is no longer the problem of evolution or extinction (even if, of course, there has been and, regrettably, still are, wars and conflicts in human history). Therefore, I believe that if sentient machines were to be created, there would not be a conflict between the evolution of both species.

In view of the above, I believe that the role of lawyers and regulators in the event of sentient machines being developed should involve considering the legal status of such machines, in order to promote integration and cooperation instead of conflict.

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**In the pipeline - next issue:**

- **Robots: are the three rules of Asimov a good starting point for a law on robots?**
- **Algorithms: are they dangerous? do they need to be regulated? Responses from mathematicians**

## Robots: personality



## Will God need a licence from Google?

By Nick Gillies

Google X’s patent for robots with adjustable personalities ‘prevents competition’, says MIT-based robot ethicist Dr Kate Darling. She asks if it is in line with the US Supreme Court’s decision in Alice.

Personality robot development is going to be a huge area of business, for customer interfaces such as airlines, hotels, and for robot receptionists (the first of which was installed in a Tokyo department store this April). And Japan, with an ageing population, has been in the vanguard of creating ‘caring’ robots for healthcare. Darling says: “It’s hard to imagine that anyone in the field of robotics has not envisaged this. Patents are supposed to support innovations not obvious to anyone skilled in the field.”

Patent 8,996,429 granted by the (US) Patent & Trade Marks Office on March 31 this year, is for robots that change personalities based on circumstances and user information. This information can be taken from other devices or the cloud. Examples given are how the user is known to react to bad weather or the time of day. The patent suggests that personalities could be customised or tuned to give certain in-character responses, for example “perplexed (the Woody Allen robot)”.

In the announcement of the patent, Sebastian Thrun, founder of Google X (the laboratory of Google), suggested it might “get to the point where we can outsource our own personal experiences

entirely into a computer, possibly our own personalities.”

God may have something to say about a monopoly on human immortality, and also it is something Google may struggle to reach in the 20-year life of a US patent. The Chair of the American Bar Association’s AI and Robotics Committee, Matt Henshon, of Boston law firm Henshon Klein, counsels calm. “From the inventor’s point of view you try to carve out as much [protection] as you realistically can.” And he points out that, although the patent was first applied for in 2011, the Examiner would have assessed it in the light of Alice. He says that Google will have to reach accommodations with other inventors.

Alice Corps –v- CLS Bank, decided unanimously by the Supreme Court in June 2012, brought US patent law closer to the EU’s practice, which has been much more hostile to business-method and software patent applications. It gave two hurdles for an application to leap: is it about something well-known, and is the kernel of the application something novel? The case itself was about escrow (a familiar thing) by the use of nothing more than a bit of software. At the time practitioners criticised Alice as “Google Friendly”, but it has led to a marked decline in patent troll claims, according to the ABA Journal.

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