“NEW POWERS IMPLY NEW DATA USES” THE AUTONOMOUS CAR*

GUILLAUME GUEGAN**

Introduction

If we could make a quick observation, we could now notice that all over the world, in all sectors of society, science is converging on the intelligence brought to objects and machines. Computer science is now leading to robotics and the computer is interacting with us.

In fact, according to the United Nations, robotics will be the technological revolution of the 21st century, just like the automobile and computers in the previous century. Currently, domestic robots clean carpets, mow the lawn and in the next few years, they will become essentials in the field of assistance to the elderly or to promote the education of children.

The term robotics covers a very complex reality, especially because it is impossible to define precisely what a robot is since this definition evolves with technological developments. In fact, the words of Josef Engelberger, one of the fathers of robotics, are eloquent: “I don’t know how to define a robot, but I know a robot when I see one”.

In any case, all robots will differ according to several criteria that can be found in all definitions:

- Their nature
- Their level of autonomy
- Their field of application
- The type of relationship they’re likely to have with the man.

From these criteria a very different robotic reality emerges. For example, aerial UAVs are not characterized according to their interaction with humans, whereas this will be the most important characteristic for androids.

In the very near future the robot will become “intimate” with men, it will learn and its behaviour will change according to its experiences, or the lessons it has chosen to learn or that it has been taught, thanks to artificial intelligence. By this means, through its development and its diversity, robotics constitutes a real economic lever that is difficult to apprehend or understand.

It is in this context that the question of law comes into play, since to develop, robotics implies finding a delicate balance between the interests of robot’s users and those of professionals. This challenge is that of acceptability so that the law can be able to integrate the robot into the human social fabric and it is this problem that we must solve.

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** Attorney at law, PhD in Law from Toulouse I Capitole University
In France as in Europe, the regulatory and ethical frameworks are still rather vague... There is no specific legal framework for robotics but a stack of regulations, since there is no unitary framework.

Generally speaking, according to the legal acceptability of artificial intelligence there are two problems:

- The first one is related to the issue of liability because it leads to the question of the transfer of liability from the user to the robot manufacturer as the degree of autonomy of the robot increases.
- The second is the legality of certain devices, as certain types of robots, in both professional and domestic environments, may raise questions relating to individual freedoms and in particular to the respect of human dignity and privacy.

The challenge is therefore to determine whether robotic activity and the development of artificial intelligence can find their place in our legal organisation chart or whether a specific, innovative legal framework needs to be created. To explore this issue, we will take the example of the autonomous car.

I. Autonomous Car and Liabilities Issues

Not so long ago, autonomous cars still seemed to be a fashionable phenomenon, even science fiction. However, the autonomous vehicle, which is above all a connected vehicle, is now a reality that is relayed by presses all over the world. This international enthusiasm is perhaps a sign that we are at the dawn of a major revolution in the world of transport and mobility.

To be truly autonomous, the autonomous vehicle, which is above all a connected vehicle, must communicate permanently with other vehicles but also with road infrastructures. The deployment of these cars will therefore have an obvious impact on the evolution of society, in particular through new mobility needs. But these new societal needs resulting from the densification of cities are also associated with economic, social, security and environmental issues. In view of these new challenges and the billions of personal and physical data that will be collected and processed, new players with a strong digital appetite are taking a very close interest in the development of intelligent transport (E.g. Google).

Today, “semi-autonomous” experimental cars are already on the roads all over the world, starting with the United States, the United Kingdom, Japan and France. There is no doubt that in the very near future, it will become quite commonplace to watch a film or read a book while being transported from point A to point B in complete safety. However, this future is part of the collective imagination because to achieve it it’s necessary to overcome several degrees of autonomy. Precisely with regard to the 2018 SAE standard.

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1 Eg. Reduction of time in transport
2 Eg. Reducing transport costs
3 Eg. Allowing people with disabilities to move around
4 Eg. Accident prevention
5 Eg. Reducing the environmental footprint
In Europe, the philosophy of “semi-autonomy” presides over the development of “autonomous” and “intelligent” cars. Indeed, if the first 3 are already a thing of the past thanks to the Citroën 2CV (level 0), ABS (level 1), parking assistance (level 2), the following levels raise many technological and legal issues. While several projects began in 2019 in France concerning vehicles with a range of level 3, fully autonomous cars (level 5) should not circulate before, at least...2030.

Whether the vehicles are partially automated or completely autonomous, their operating principle is based on 3 axes “perception, decision and action” which centralize all technological and legal issues.

An autonomous or “semi-autonomous” vehicle is composed of many sensors designed to complement the driver’s senses. But it is by combining them that we obtain a robust mapping of the perception of the environment. In other words, a reliable image at a given moment “t” of the world around the car. This is where artificial intelligence comes in. The real “brain” of the autonomous car must therefore simultaneously process all data flows, in search of critical signals likely to trigger an alert for the driver, or even an emergency brake application: does a light go red? Does a pedestrian cross?

Thus several types of algorithms will process the same information with the main mission of limiting the deficiencies of the machine or man resulting from the redundancy of data collected by sensors (GPS, lasers...)^7.

Learning through algorithms from the external environment is therefore essential (e. g. detection of road signs) and even constitutes the cornerstone of tomorrow’s transport, which will be collective, shared, comfortable, accessible and connected. However, this societal advance is being met by a real social concern to which the law is responsible. Is this technological revolution then without legal danger or will it lead in its wake to a real legal tsunami? Will the existing legal regimes, French, American, German, South Korean, Japanese, etc., really have to face the turmoil announced by the international press, which keeps asking itself who is responsible in the event of an accident?

The problem is topical and even central since we are witnessing a slow evolution in the typology of road accidents. Indeed, there are several cases of accidents related to a driving automation system.

In 2016, a first fatal accident involved a TESLA vehicle equipped with the “Autopilot”^8 system. The latter has focused the spotlight of the law on the potential shortcomings of liability law in the face of these new technological players. In this case, the vehicle struck a truck when neither the driver nor the system had detected the truck’s manoeuvring or applied the brakes. The investigation conducted by the National Safety and Transportation Council in the United States revealed that the driver had not reacted, despite having received several alerts from the system. The manufacturer’s liability is therefore a priori excluded and de facto leaves the driver alone to assume the obligations of vigilance and control of the vehicle. As a reminder, the driver had to remain in control of his vehicle.

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6 Abdelkrim Doufene, Director of Strategy and Programme at IRT SystemX
7 The challenge is to limit the number of false positives or negatives resulting from this redundancy of information. In other words, to avoid any untimely laughing at a misinterpretation (false positive); or, more framatically, to reproduce the fatal accident that occurred in early 2018 when a uber vehicle hit a cystic fibrosis that it had not dug up (false negative)
8 “Autopilot” is defined by the manufacturer as an “improved autopilot” system - www.tesla.com
In 2018, in the United States, an accident involving a vehicle testing Uber’s services fatally hit a pedestrian pushing his bike across the road outside the protected crossings in 2018, even though night had fallen. The investigation will reveal that Uber had chosen to remove some sensors. However, determining the origin of accidents remains fundamental to identifying responsibility, especially since the Tempe Chief of Police, in charge of investigating the accident of the vehicle, stated: “it would have been difficult to avoid this collision regardless of the driving world, given the way the victim appeared on the road”. Perhaps the solution to the trolley dilemma lies here⁹: « would you kill one person to save may others ?»

All these accidents, including those involving an autonomous shuttle, have contributed to the acceleration of international governmental actions to determine the applicable liability regime and to supervise the deployment of “autonomous vehicles”. Thus, the issue of transferring the responsibility for driving from the driver to the manufacturers or manufacturers of the “intelligent” components of the vehicle appears to be a major area of reflection¹⁰. It is of increasing interest to the European authorities and to legal doctrine, which is already considering whether it is appropriate to modify the legal regimes in force. But it is also a new issue for insurers, who will have to be able to offer appropriate commercial offers.

The problem of determining liability in the event of an accident with the arrival of autonomous cars is therefore a definite societal advance but represents a real social concern.

Ultimately, the quality of the data is therefore important in decision-making in the autonomous car because by its treatment it will be possible to influence the acceptability of autonomous cars but more generally on Artificial Intelligence. This is why the AI of tomorrow must be trustworthy and for that it must meet three criteria:

- Explicability: Artificial intelligence must be able to explain, i.e. make things intelligible and contextualized so that Man is able to make a decision.
- Validity: having an AI in conformity with its specifications, i.e. able to prove that the system will do what is expected of it.
- Responsibility: this means that a system must comply with the legal frameworks (by design), i.e. by default during design.

A “by design” conception is thus a first response to the problem induced by the development of intelligence in our everyday objects such as a car. There is no doubt that this solution will be refined over time. However, it has the merit, today, of not reversing the burden of proof. By this conception, it seems that the balance between the interests of industrialists and those of victims is initially found.

Basically, civil liability and criminal liability are differentiated by the purpose of the sanction. While the purpose of criminal liability is to punish and prevent, in civil liability law the conduct that caused damage is punished by reparation. We will focus only on civil liability. It should simply be noted that the legislator, with regard to criminal liability, takes into account the particularity of artificial intelligence and its sector of activity by having created a new


¹⁰ The opinion of the Council of State on the draft Pact law (EC, opinion, 14 June 2018, n° 394.599 and 395.021) as well as the resolution of the European Parliament of 15 January 2019 on autonomous vehicles in European transport (2018/2089(INI))
offence attributable to experimentation.

Nevertheless, in criminal or civil matters it seems difficult to prove the origin of a damage or an offence. Indeed, the driver’s liability remains despite the reservations linked to a possible exoneration of his liability by the proof of an event presenting the characteristics of force majeure. So how to prove the origin of the accident?

II. Data Uses and Liabilities Issues

Determining who is at fault in a traffic accident involving an “autonomous vehicle” is essential and needs, as a first step, proof of the origin of the accident. Indeed, in civil cases, this proof will be important for the insurance company which compensated the victim or even for the driver alone involved in the accident, whereas in criminal cases it will be necessary from the moment the offence is established.

The question of recording the data and the behaviour of the vehicle has therefore arisen for all the players, including the manufacturers. In this way, manufacturers wish to ensure that they have proof of the safety or security of the vehicle right from the design stage.

The concept of providing proof “by design”, i.e. from the design stage, is not prohibited, since the principle according to which “no one can provide proof of his own” is not applicable for the demonstration of a legal fact. In this respect, the object of the proof will relate to the event generating a subjective fact, in other words, either to the legal act as such or to the legal fact which gave rise to it.

Thus, two conditions will delimit the object of proof. On the one hand, it must be constituted by a “relevant” fact, in other words a fact which has had a certain influence on the future decision, and on the other hand, it must be the consequence of a “contested” and “questionable” fact.

However, in certain hypotheses, Article 1354 of the Civil Code admits that the victim demonstrates the existence of related facts which make the existence of the fact that would normally have to be proven likely: these are presumptions.

“The presumption that the law attaches to certain acts or facts by holding them to be certain exempts the person for whose benefit it exists from having to prove them. »

According to Article 1353 of the Civil Code, the burden of proof lies with the plaintiff, i.e. the one who wishes to assert a fact justifying the success of his claim, i.e. potentially damage. If he succeeds in proving the alleged facts, then the burden of proof will be transferred to the defendant, and failing this, the plaintiff will have to bear the risk of legal action.

“He who claims performance of an obligation must prove it. »

Conversely, paragraph 2 of article 1353 of the Civil Code provides that a person who disputes that he owes an obligation must prove either the absence of the obligation or the performance of that obligation11.

“Reciprocally, a person who claims to be discharged must justify the payment or the

11 Eg. First Chamber of The French Suprem Civil court February 25th 1997, no.94-19.685
The fact which produced the extinction of his obligation.

However, the fact can be proved by any means\textsuperscript{12} and judicial measures may be ordered by the judge ex officio or at the request of a party if this makes it possible to resolve a dispute. However, it seems delicate for a person to prove the defect, a fact resulting from a decision of an algorithm.

Proof of the origin of the accident involving an “autonomous vehicle” could therefore be envisaged through the introduction of devices allowing the recording of data preceding the accident. A kind of black box for land motor vehicles.

Several data recording devices are being studied, in particular within the working groups at WP29 (Working Party at the World Forum for Harmonization of Vehicle Regulations of the United Nations Economic Commission for Europe (UNECE) in Vienna. The aim of these discussions is to enable the introduction of devices for recording data, in order to facilitate, in particular, proof of the identity of the person in charge of driving.

For example, the introduction of data recording devices could facilitate the demonstration of proof of the origin of the accident, and hence of the person responsible. Nevertheless, the use of such intrusive procedures for the exploitation of all or part of the personal data of the vehicle user presupposes that the rules guaranteeing the right to privacy are observed. Right protected by the French Constitution.

The concept of “privacy” is very broadly accepted, allowing it to be appreciated both in the sphere of the individual and in that of the employee. In this respect, automobile experts whose status is regulated and codified in Articles L. 326 et seq. of the Highway Code, as well as legal experts subject to the provisions of the Decree of 23 December 2004\textsuperscript{13} share the same problematic.

However, the use of data collected by a vehicle is extremely regulated. In this respect, the use of vehicle data has many limits that must be understood, particularly in view of the European Regulation on the protection of personal data (GDPR) which entered into force on 25 May 2018. The latter has revolutionised the collection and processing of data from companies managing the data of European citizens.

III. The Limits to the Introduction of a Data Logger

1. The European Data Protection Regulation (GDPR)

There are many data recording processes (data recorders can be divided into three categories: DATA Recorder events (EDR) for accident reconstruction, DSSA (Data Storage System for ACSF - Automatically Comanded Steering Function) and ADDR (Automated Driving Data Recorder), which are dedicated to recording the delegated driving phases and the data exchanged for the operation of a service) and represent a technological innovation that makes it possible to store the data generated or even sent by the vehicle.

\textsuperscript{12} Article 1348 of the Civil Code: “Set-off may be pronounced in court, even if one of the obligations, though certain, is not yet liquid or due. Unless it is decided otherwise, the set-off then produces its effects at the date of the decision”

\textsuperscript{13} D. n° 2004-1463, 23 December 2004, relating to legal experts: OJ n° 303, 30 December 2004, p.22351, text n° 63
However, the data collected by the vehicle will be extremely varied and will relate to the location of the vehicle as well as the activation of the system or the actions of the driver on the steering wheel, the brake, etc.

In addition to the numerous data collected by the cars, the data exchanged with other vehicles will also be added.

The objectives of data collection and processing are manifold:
- Traffic improvement
- Pollution reduction
- Improving road safety

Above all, however, the collection of this data will enable the driver to be identified at the time of the accident. That is to say either the human or the vehicle itself when it is in automated mode. However, access to the data is very strictly regulated and limited by the GDPR.

Indeed, there is no property right on the data in European law. However, data trade is a reality and trade in personal data is only possible if it complies with national and international legal rules, including the GDPR. The rights of data subjects in relation to the collection, processing and use of their data have thus been strengthened by the GDPR, which came into force in all member states of the European Union on 25 May 2018.

The GDPR mainly pursues two objectives. On the one hand, it reinforces the rights of individuals through the obligation for data controllers to obtain the consent of the persons whose data they collect, but also through the creation of a right to data portability.

The collection of consent is probably the most important point of the European regulation. It must be free, informed and unambiguous. This therefore implies that the controller must carry out a mapping of the processing operations in order to know where the data are located.

On the other hand, the implementation of the GDPR is intended to give responsibility to the different actors involved in the data and in particular with the principle of accountability. The principle of accountability is defined by the CNIL as “the obligation for companies to implement internal mechanisms and procedures to demonstrate compliance with data protection rules”\(^\text{14}\). To this end, the principle of minimisation has been established, which obliges data controllers to collect only the data necessary for processing. In this respect, the mandatory system shows that it is possible to separate the information collected by distinguishing between information that does not require consent and information that requires the consent of the data subject.

2. A Necessary and Limited Use of Data

Article 4 of the GDPR defines personal data as “any information relating to an identified or identifiable natural person”. As such, it is deemed to be an “identified person, directly or indirectly”, i.e. a person who is likely to be identified by “an identifier (e.g. by name or by location data), or by one or more elements specific to his or her physical, physiological, genetic, mental, economic, cultural or social identity”.

This definition is very broad, which means that the solutions previously adopted by case

\(^\text{14}\) www.cnil.fr/fr/definition/accountability
law, which had accepted that an IP address is personal data, are now incorporated into the legal system. In this respect, the “connected vehicles and personal data” compliance pack issued by the CNIL in 2017 also specified that geolocation data, technical data related to the condition of the vehicle and its parts, etc. constitute personal data.

Consequently, all vehicle data constitute personal data within the meaning of Article 4 of the RGPD since their cross-checking makes it possible to obtain at least the name of the owner of the vehicle. As such, the data should and must be anonymous.

3. The Essential Use of the Autonomous Cars’ Data

But why is it so important to be able to use the data? The reason is mainly twofold. Firstly, the data processing will make it possible to identify the person responsible for a possible accident.

Indeed, the Badinter Act introduced a system of compensation for victims that is not based on proof of fault on the part of the driver, but on the involvement of a land motor vehicle in a traffic accident. The driver is defined in this framework as the keeper of the car and will therefore be considered as the person at fault in the event of an accident. However, the driver or even the owner of the vehicle is protected through the mechanism of compulsory insurance and will therefore not have to bear the burden of compensating the victim.

On the other hand, the person who will have compensated the victim, the solvens, i.e. very regularly the insurance company, may have a strong interest in identifying the person responsible. Thus, the data collected by the vehicle would be perceived as an extremely effective identification tool. The identification of the person responsible for an accident is therefore a first purpose for the exploitation of the data collected by the cars. As the legal basis of the processing is a legal or contractual obligation, the controller would not need to obtain the consent of the individuals. But what to do in case of loan of the vehicle?

A second use of the data could be the adaptation of insurance schemes and in particular the creation of a specific insurance scheme for autonomous cars. Moreover, adapting the insurance system is one of the solutions to the difficulty of determining who is at fault in the event of an accident involving a level 5 stand-alone car.

However, the setting of tariffs is a matter of contractual freedom. Attached to the insurance contract, the insurance premium is determined by the insurer after the insured’s answers, in particular to the risk questionnaire enabling him to define his commitment.

Nevertheless, some general principles of insurance law could be abused. Indeed, the pooling of policyholders around a risk of the same nature could be called into question by the use of data. There is no doubt that with the processing of data on cars, journeys and driving style, we will end up with personalised insurance.

Indeed, the insurance premium of the car contract is traditionally fixed with objective criteria such as the location of the parking place (car park, street, etc.), the use of the vehicle (private / professional) or the age of the driver. These systems will therefore evolve with the operation and processing of data collected by autonomous vehicles.

Today, policyholders’ consent to the introduction of a box in their car in order to record certain driving data: acceleration, braking, speed in bends and overall speed, without any

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15 EUCJ, October 19th 2016, case C-582/14
offence data being collected or recorded. Of course, these devices have been validated by the French regulation commission, subject to compliance with regulations on personal data.

The evolution of the insurance criteria has already begun in order to meet the demand and the arrival of autonomous vehicles. Nevertheless, the emergence of an individualised insurance product could give rise to difficulties from the point of view of risk selection, in particular because the individualised offer could generate discriminatory practices following the integration of individual data.

Finally, it is necessary to guard against the use of data based on new uses or new differentiation practices, which could incorporate an increasing error variable in the absence of an accurate estimate of the frequency and cost of the claim.

Indeed, the use of such data could result in an increase in the rates applied to these increasingly individualised risk measures. However, without denying the personalisation of risk, insurers are relying on another emerging practice: peer-to-peer self-insurance or collaborative insurance, which consists of pooling risks within a community of consumers.

The collection and processing of data therefore opens up a field of possibilities whose importance is not yet measured.

**Conclusion**

Proof of the origin of the accident and therefore of the person ultimately responsible for the debt and/or the offence is essential in order to promote the acceptability of artificial intelligence and therefore the advent of autonomous vehicles.

Such proof could thus be provided by data recorders such as those used on aircraft, the intrusiveness of which has been shown not to constitute a regulatory prohibition.

However, the use of vehicle data, in particular by automotive experts, presupposes a rethinking of the status of the data, in accordance with the GDPR, but also its access according to the purpose of the recorded data. While the use of the data to facilitate the search for the person responsible seems necessary and commendable, the use of the data to develop commercial or insurance services requires prior consideration of the use that will be made of the data. This is why, to date, granting a right of ownership over data does not seem to be the solution to the problems inherent in the 4th Revolution.