**Book Review -Hans Steege, Ilaria Amelia Caggiano, Maria Cristina Gaeta and Benjamin von Bodungen (eds) *Autonomous Vehicles and Civil Liability in a Global Perspective: Liability Law Study across the World in relation to SAEJ3016 Standard for Driving Automation* (Springer, 2024)**

Luci Carey[[1]](#footnote-2)

In "Autonomous Vehicles and Civil Liability in a Global Perspective," the editors have assembled a significant and timely comparative analysis of civil liability related to autonomous vehicles across multiple jurisdictions. This book is particularly noteworthy for its global scope, covering insights from five continents and incorporating perspectives from the Global South, thereby enriching the discourse surrounding the legal complexities of automated driving. The book’s aims are twofold, first to provide analysis from each country that assesses whether there is civil liability legislation in place that protects an injured person in an accident involving a self-driving care in each country and how the cost of insurance and compensation is allocated. The second, to assess the capability of the civil liability legislation to ensure comprehensive, consistent regulation of automated vehicles, whether modifications to the existing regime are necessary, or if a new framework of rules for autonomous cars is required.

The book broadly examines two liability approaches. Firstly, where States rely on general liability concepts and road traffic rules. Second, where States have enacted specific legislation that displaces the traditional liability scheme with the principle of strict liability and considers the owner, the operator and the manufacturer as the liable parties. The authors of the individual chapters of the book provided answers to a questionnaire containing six questions relating to their jurisdiction. The answers to some of these questions are helpfully set out in chart form[[2]](#footnote-3) although it is not immediately clear what the charts relate to as they are positioned before the discussion (despite the discussion stating that the chart is below).

The book aims to provide an interdisciplinary view to help the reader understand, not only the legal analysis of existing laws and their operation but to also provide an analysis of the technical, social, and economic implications of self-driving vehicles.

The introduction notes that while automation in vehicles is expected to reduce the number of car accidents, there are concerns whether the incorporation of artificial intelligence (AI) may cause unexpected harm and whether the existing liability regimes may undercompensate or not compensate the injured party at all. These concerns stem from a variety of factors. For example, it may be difficult to identify the cause of the harm because of the complexity and opacity of AI systems, data has potential to be flawed (either collected by the vehicle itself or other providers) and lead to an incorrect decision of the vehicle, there could be an error of the device both in the case of a decision made by a human or by the vehicle, and there may be unexpected technical defects.[[3]](#footnote-4)

The legal response in these situations will depend upon the tort law of the particular jurisdiction which may be either a fault-based or strict liability regime. The authors suggest that due to the reduction of the level of human control of the acts of the vehicle, then a strict liability model is appropriate but identifies that this is not without challenges. Firstly, it might be difficult to identify the subject of liability, be it the owner of the car, the manufacturer, and in turn the producer of the application/AI system involved. Second, to detect the cause of the accident may be difficult in an environment where there are autonomous and semi-autonomous vehicles, where human error may play a part. The research is conducted using the SAE International standard J3016[[4]](#footnote-5) as the reference framework.

The SAE International standard J0316 for automated vehicles has six levels:

Level 0: No Driving Automation

Level 1: Driver Assistance

Level 2: Partial Driving Automation

Level 3: Conditional Driving Automation

Level 4: High Driving Automation

Level 5: Full Driving Automation

Before examining specific country examples, the book provides an overview of the legal regulation on automated vehicles at an international and European Union (EU) level. This is a helpful and comprehensive discussion of various relevant instruments including the EU’s AI Act,[[5]](#footnote-6) and the Vienna Convention on Road Traffic 1968,[[6]](#footnote-7) pointing out that one of the fundamental principles of this Convention is that every vehicle must always have a driver fully in control and responsible for the behaviour of the vehicle. This requirement was waived for automated driving systems by Article 34*bis* in July 2022.

The authors identify the potentially enormous influence the EU is likely to have on the allocation of liability for harm caused by autonomous vehicles, not just within the EU but globally, highlighting, in particular, the new Product Liability Directive and its interplay with the AI Liability Directive. The authors’ position is that because current EU regulations have not been designed specifically to address the challenges introduced by the use of automated vehicles, the current regulatory framework will be inadequate and therefore there will be an *ad hoc* development of regulations. A minor point, but the discussion uses AI Act and AIA interchangeably which is a touch confusing.

The introduction is followed by a chapter on the technical aspects of autonomous vehicles.This chapter is a very useful inclusion in a legal textbook. It provides a clear explanation of the technology required for the operation of autonomous vehicles. Such technical information is often missing from legal publications relating to this novel technology and providing technical information in a way that is comprehensible for laypersons is most welcome.

The subsequent parts of the book provide regional case studies. These are structured by region allowing the reader to draw comparisons and identify patterns across different legal systems.

Part I discusses South Africa’s liability regime and its application to motor vehicle collisions. Those who have suffered personal loss or damage because of a road accident are compensated by the Road Accident Fund which is funded by a compulsory levy on fuel purchases. However, there are limits to the compensation payable. The loss must have been caused by driving of a motor vehicle, and it does not compensate a victim for damage to property – only bodily injury or financial loss resulting from the injury or death of a breadwinner. The authors submit that the doctrine of *actio de paupiere* could be expanded to apply to the owner of an automated vehicle which is an innovative and persuasive solution.

Part II provides a discussion of civil liability in the Americas. The first part of this section considers the civil liability for motor vehicle crashes for both conventional vehicles and autonomous vehicles in the United States. The second part considers the legal position for liability in Colombia.

In the United States (as of June 2020), 35 states and the District of Colombia have enacted statutes expressly addressing autonomous vehicles. The regulations are largely concerned with what is required for the operation of autonomous vehicles including rules to govern operators and rules concerned with technical features of the driving system.

Federal legislation has yet to be enacted but it is suggested that federal regulations will ultimately determine the liability of autonomous vehicles but until these are enacted, state law will apply. Geistfeld argues that as manufacturer liability may not apply and instead there ought to be a system of no-fault insurance.

In Colombia, civil liability for driving is based on the doctrine of dangerous activities with the person liable for damage caused by the vehicle being the keeper of the vehicle. The driver is presumed to be the keeper as well as the owner or the transport company. The authors therefore say that although there is no specific legal regulation for autonomous vehicles in Colombia, the activity of those vehicles would be considered a dangerous activity therefore the liability regime for autonomous vehicles will be the doctrine of dangerous activities complemented with product liability and the Electronic Commerce Act.

Part III considers four jurisdictions: China, Japan, Singapore, and Korea.

China has comprehensive regulations for the testing of autonomous vehicles placing liability for damage caused by the testing on the entity that conducts and organises the testing. It comments that the Civil Code, the Law on Road Traffic Safety, and the Product Quality Law apply to vehicles which will face challenges for Levels 3 and above.

There is no specific legislation in Japan that regulates civil liability for autonomous driving. Therefore, the issue is dealt within the framework of the current legislation that applies to conventional driving, namely the Civil Code, the Act on Securing Compensation for Automobile Accidents and the Product Liability Act. In most cases, damage will be covered within the framework of the Act on Securing Compensation for Automobile Accidents with insurance. Therefore, this chapter suggests the Product Liability Act will be of limited use and tort liability will be of secondary importance. Since the existing legal framework is not structured to specifically deal with issues resulting from autonomous driving, future legislation is anticipated. Nevertheless, the existing legal framework can accommodate automated vehicles up to level 5.

The discussion regarding Singapore explains that research and development trials for autonomous vehicles are already underway in Singapore. In 2016, the legal implications of autonomous vehicles were identified when a self-driving car was reported to have hit a lorry during a test drive. The developer of the car later announced that the accident was caused by an extremely rare combination of software anomalies. Shortly after this incident Parliament passed amendments to Singapore's Road Traffic Act to establish a regulatory framework for the undertaking of trials and use of autonomous vehicles on Singapore roads.

The chapter explains that currently for levels 3 to 4 the liabilities are more complex. As yet, it has not been determined whether or not programmer, developer or operator would be held responsible for any civil, criminal or product liability claims arising from incidents involving the use of autonomous vehicles.

The chapter concludes by suggesting that Singapore appears to be well positioned to lead the progression in the autonomous vehicle sector due to the strength of the infrastructure and, interestingly, consumer acceptance of autonomous vehicles.

In Korea in 2015, the Motor Vehicle Management Act was amended to include autonomous vehicles under the definition of motor vehicle which are classed as a different type of vehicle as distinguished from regular vehicles. The Act on Promotion and Support of Commercialisation of Autonomous Vehicles (the AV Act) came into effect in 2020. Both Acts define an autonomous vehicle as a motor vehicle which can self-operate without any operation by its driver or passengers. Under Korean law, levels 0 to 2 autonomous vehicles are treated as regular motor vehicles. This means a driver must properly operate the steering system, brakes and other related devices while driving. Therefore, liability in traffic accidents with levels 0 to 2 vehicles will be the same as for conventional vehicles. This chapter proposes a scenario to illustrate how liability for damages would be attributed in Korean law. This is a nice touch.

For liability in accidents involving Level 3 autonomous vehicles the chapter provides a theoretical discussion on who would be considered an operator under the Motor Vehicle Accident Compensation Guarantee Act (Compensation Act). Under the Compensation Act, the operator of a motor vehicle will be strictly liable, and the vehicle owner must purchase a liability insurance policy that covers damage to a third party. If the cause is attributable to a defect in the vehicle, then the manufacturer will be liable. An insurance company is allowed to claim for product liability against a manufacturer on behalf of the insured through a subrogation clause or claim for the right to indemnity.

For levels 4 and 5, it is still being considered whether the rules of the Compensation Act will apply. Given that level 5 vehicles do not require driver intervention, the authors contend that it seems contrary to the principle of self-responsibility to hold the ‘driver’ liable. The table provided in this chapter[[7]](#footnote-8) provides a clear overview of the major liabilities in the case of accidents involving the operation of autonomous vehicles in Korea. This is a very helpful snapshot.

Part IV discusses the status of automated vehicles in Australia and future challenges. Automated vehicles at level zero to two can already be covered by existing legislation as a human driver remains the dominant controlling party during the vehicle operation. However, the law will struggle to accommodate automated vehicles at Level 3 to 5 because these vehicles can operate without a driver. This chapter also includes a very helpful table providing an overview of the levels of automation which helps the reader follow the discussion clearly.

Automated vehicle trials are underway in Australia but have been much smaller in scale compared to other countries with large automotive and IT industries, such as European countries and the United States. Automated vehicles of higher automation levels cannot legally operate on Australian roads. Thus, organisations seeking to run automated vehicle trials must obtain a permit or exemption from the road transport agency of the relevant state or territory in which the trial is proposed to be conducted.

Safety obligations in current legislation are predominantly addressed to the human driver, with limited statutory liabilities and obligations for the registered owner. Both the manufacturer, which includes an importer, and the supplier may be liable for injury or damages caused by defects in automated vehicles at levels 0 to 2. In Australia, the manufacturers and or suppliers’ liability for defective products is derived from a combination of common law principles and legislation. In addition to the common law tort of negligence, the Australian Consumer Law (ACL) imposes strict liability for manufacturers of goods that have a safety defect. The ACL defines ‘manufacturer’ broadly and includes, amongst others, a person who imports goods into Australia where the manufacturer of goods does not have a place in business in Australia.

Criminal negligence offences may apply to remote drivers, but the authors submit that national inconsistency and the nature of these provisions mean that these laws will unlikely be effective in practice. The remote driver is a human who takes control of the automated vehicle upon the request of the automated driver system but is not typically an occupant within the vehicle. In relation to automated vehicles at levels four and five the law requires updating as a remote driver may not even be in Australia. The chapter identifies the complex nature of the law reform underway in Australia pointing out that the challenge is going to be to identify the responsible person or persons and to apportion the liability amongst them.

Part V examines the legal frameworks for autonomous vehicles in nine European countries: Belgium, Germany, France, Spain, Italy, the Netherlands, Austria, Romania, and Sweden. While all are EU members, the focus is on domestic laws.

In Belgium, 2018 saw the introduction of rules for testing autonomous vehicles, highlighting the absence of a specific liability regime. Vulnerable road users benefit from a no-fault compensation system, while others rely on general fault or product liability. Challenges increase for vehicles at levels 3 and above, especially concerning liability and the potential invocation of force majeure to escape liability. The custodian's role is crucial in determining liability, as ownership does not automatically confer custodianship.

Germany's Federal Road Traffic Act underwent updates for conditional automation in 2017 and 2021. The liability framework distinguishes between the driver, vehicle keeper, and manufacturer, imposing strict liability on the keeper for damages. Amendments for levels 3 and 4 maintain traditional liability structures, with no specific rules yet for level 5 vehicles.

France introduced laws in 2016 for testing autonomous vehicles, with further amendments in 2020. The traditional liability scheme applies, but as automation increases, the need for producer liability becomes more justified. The 2021 Criminal Liability Ordinance outlines user responsibilities and professional duties related to autonomous vehicles.

In Spain, automated vehicle damages remain unregulated, but general compensation systems for damages apply. For level 5 vehicles, liability falls on the owner and insurance company, while manufacturers may also be liable for defects.

Italy relies on general civil liability principles, with Article 2054 of the Civil Code serving as the primary regulation. For levels 0 to 2, driver and owner liability applies, while levels 3 to 4 may use existing rules. Level 5 requires new regulations, shifting liability primarily to the owner and manufacturer.

The Netherlands permits testing of semi-autonomous vehicles but lacks specific regulations. Liability may involve multiple parties, with owner or keeper primarily liable for level 5 vehicles due to strict liability provisions.

Austria's Automated Driving Regulation allows testing for various autonomous vehicles, maintaining existing civil liability rules for levels 0 to 2. Liability for semi-autonomous vehicles remains with the driver but can shift depending on the situation.

Romania's lack of specific regulations means levels 0 to 2 follow fault-based liability, while levels 3 to 5 impose strict liability on legal guardians. Producer liability applies for defective vehicles.

In Sweden, the liability legislation regarding vehicles focuses on main three main parties, the manufacturer, the owner and the driver. The liability rules in force are adapted for driving at levels 0 to 3, while the legislation regarding traffic insurance is such that it could be applied to all levels of automated vehicles. For levels four and five, Swedish liability law requires intervention, especially regarding the driver’s responsibilities during automated travel.

Part VI: The United Kingdom

Part VI discusses liability for automated vehicles in the United Kingdom. In 2018 the world's first insurer liability scheme for automated vehicles was enacted in the Automated and Electrical Vehicles Act 2018. The UK chapter provides a detailed overview of the existing law and the insurance requirements for vehicles at level zero to two in Great Britain. Thereafter, it continues at an extensive analysis of the new insurer liability regime for automated vehicles, which are levels three to five under the Automated and Electric Vehicles Act of 2018. It sets out a review of the Commission, the various recommendations of the Law Commissions in their three consultation papers and their joint report in 2022. It also examines how automated vehicle insurers might then recover their losses under the Consumer Protection Act 1987, alongside the law of delict and in Scotland and tort in England and Wales, as well as contract law.

**Conclusion**

This is an impressive collection of contributions that provides an invaluable comparative reference and addresses an important contemporary legal issue. By providing a global review of jurisdictions’ response to developments in automated driving, the reader can quickly see legal trends and gaps.

The contributions demonstrate that while there are differences in approaches and terminology, broadly speaking the concerns regarding liability begin for levels 3 and above with regulation failing to keep pace with technology developments. This book does not purport to find solutions for levels 3 and above, but it is an excellent resource as the basis for future discussions and reform.

A future edition would benefit from more contributions from Africa and the Americas. It would also be useful to see how India is approaching this technology. A minor point, there are a number of typos in the text, these are often basic spelling mistakes which are a touch distracting, that said, this is a an extremely useful resource and one which I shall be consulting for my own research.

1. Lecturer in Commercial Law, University of Aberdeen. [↑](#footnote-ref-2)
2. At pp 16-18. [↑](#footnote-ref-3)
3. p 5. [↑](#footnote-ref-4)
4. The standard classifies six different levels of automation. See <https://www.sae.org/standards/content/j3016_202104/> and also p 37. [↑](#footnote-ref-5)
5. Artificial Intelligence Act, Regulation (EU) 2024/1689. [↑](#footnote-ref-6)
6. Convention on Road Traffic opened for signature 8 November 1968, UNTS 1042 (entered into force 21 May 1977) [↑](#footnote-ref-7)
7. At p 203. [↑](#footnote-ref-8)