THE SUBROGATION TRAP IN SELF-DRIVING CAR INSURANCE

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ABSTRACT

The entry of fully autonomous cars (Levels 4 and 5) threatens the foundational principles of the law of motor vehicle liability and insurance, founded on the negligence of human operators. In traditional systems the insurers recoup their loss in subrogation of the party to fault by references of the evidence available. The self-driving cars are disrupting this paradigm since the liability ceases to rest with the drivers but with the designers and programmers in the strict sense of product liability.

To ensure that victims receive compensation on time, countries such as the United Kingdom and the European Union are pressurizing motor insurers to join the first-time payers in the event of an autonomous vehicle-induced accident. Although the statutory rights of action against the manufacturers have been granted to the insurers, this paper argues that the rights are only malusory. Algorithms decision logs, sensor logs, and software update logs are proprietary information, and manufacturers have exclusive access to these crucial technical evidences. The aforementioned information asymmetry renders it virtually impossible to assign the flaws of the design and successfully pursue the claims of subrogation of the insurers.

This leads to the general insurance pool bearing the economic costs of the maker defects and distorting actuarial models, increasing premiums and moral hazard by creating less responsibility in the maker. The article suggests new legislation, including the introduction of mandatory data reporting, assumptions of burden sharing, and liability enterprise platforms, to restore fairness, financial security, and safety incentives in autonomous vehicle insurance.

Introduction

A fully automated vehicles (Avs) that reach levels of 4 and 5, i.e., have the ability to independently drive without human involvement, are posing a challenge to the principles of motor vehicles liability and insurance. Conventional systems impose blame on driver negligence and insurers make a subrogation against parties who are at fault, based on the available evidence such as police reports and eyewitness testimonies. Avs change this paradigm instead to responsibility of the manufacturers in relation to the algorithmic defects in strict product liability. However, legislations that impose restrictions on insurers to act as first payers provide recourse rights that are not real because manufacturers have the monopoly of proprietary data.

Human Negligence to Algorithmic Liability Paradigm Shift

The liability in the case of torts is determined by the violation of duty by a driver, which is subject to mandatory liability insurance in the context of fault- based torts. No fault jurisdictions distribute liability among insurers without consideration of faults. They both are based on visible human actions. AVs disrupt this: autonomous vehicle cause faults due to design fault of software, seniors or AIs, not drivers[1].

This has been met with legislative responses as the legislatures appoint insurers to be the first paid to cover up the victims. Automated And Electric Vehicles Act 2018 (as revised by the 2024 Act) places the liability to pay claims based on AV accidents in automated mode on the motor insurers, which gives the AV operator a statutory right of recovery against the responsible person in most cases the manufacturer or the software provider[2]. The stricter liability that was imposed on AI and software under the EU product Liability Directive 2024/2853 strengthens the allegations against manufacturers[3]. States in US have no unified federal requirements on applications of existing product liability laws[4].

This system gives priority to the victims but imposes complicated subrogation actions on insurers. The burden to establish a design defect requires showing defective algorithms, training

[1] Bryant Walker Smith, Automated Driving and Product Liability, 74 Mich. St. L. Rev. 1, 27–33 (2017).
[2] Automated and Electric Vehicles Act 2018, c. 18 (UK), as amended by Automated Vehicles Act 2024.
[3] Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products, 2024 O.J. (L 2853).
[4] U.S. Gov't Accountability Off., *Vehicle Automation: Comprehensive Plan Needed for Federal Oversight*, GAO-21-88, at 22–26 (2021).

data, senior data or a history of updates; all of which are a trade secret. In the absence of this information, recourse is not available and this forces insurers to transfer the risks of the manufacturers to the general pool.

Missing evidence issues

Strict product liability eliminates the requirement to demonstrate negligence and just requires demonstration that a product was faulty and resulted in injury[5]. In autonomous vehicles (Avs), defects tend to be associated with software or algorithm design (e.g., inability to identify obstacles or make safer decisions than alternatives), whereas in safer autonomous vehicles, defects are more often associated with vehicles engineering or vehicle construction (e.g., a mechanical failure). However, even by simpler measure, plaintiffs and insurers will have a significant obstacle since all technical information regarding the operation of the AI system is controlled by manufacturers regarding information asymmetry renders it very hard to discover and establish the exact flaw that led to the accident[6].

Conventional tort theories are also unproductive. Res ipsa loquitur is hardly applicable since AV accidents may be caused by different factors such as weather, road conditions, or by hacking that is, the manufacturer does not have a monopoly. The application of the AI as a virtual driver under the negligence law is a disregard of the actual problem of the failure of the algorithm[7]. Even though discovery may force a company to disclose its data, manufacturers tend to fight it by invoking trade secrets and cybersecurity threats, which makes the litigation process both lengthy and costly. Cyberattacks also make the situation even more complicated, because hacks may look like software bugs, and without complete access to the internal systems of the organizations, plaintiffs will not be able to readily tell the difference between the two.

[5] Restatement (Third) of Torts: Prods. Liab. § 2 (Am. L. Inst. 1998).
[6] Jane Bambauer, Andrea Roth & Catherine Sharkey, The New Evidence Law of Sensors, 96 B.U. L. Rev. 131, 149–55 (2016).
[7] Ryan Abbott, The Reasonable Computer: Disrupting the Paradigm of Tort Liability, 86 Geo. Wash. L. Rev. 1, 34–39 (2018).

Tables illustrate the transformation:

Table 1: Fault Attribution in Traditional vs. AV Regimes

Element	Traditional Vehicles (Human-Driven)	AVs (Levels 4/5 Automated Mode)	Insurer Recourse Impact
Fault Focus	Driver negligence (behavioral risk)	Design defect (algorithmic risk)	Shifts from open evidence to proprietary data
Legal Standard	Negligence or no-fault	Strict product liability	Heightens proof burden for technical claims
Key Evidence	Witnesses, police reports, telematics	Sensor logs, AI decisions, training data	Asymmetry blocks subrogation
Recovery Mechanism	Subrogation vs. driver's insurer	Statutory claim vs. manufacturer	Illusory without data mandates

Table 2: Global Frameworks and Gaps

Jurisdiction	Victim Compensation	Insurer Recovery Right	Data Access Provision
UK (AEVA 2018/2024)	Insurer pays first	Vs. manufacturer	None explicit; trade secrets prevail
EU (PLD 2024/2853)	Strict liability for software/AI	Enhanced product claims	Implicit transparency, no litigation mandate
US (State Tort Laws)	Victim sues directly	Standard discovery	Costly, voluntary; NHTSA data not shared

These gaps render subrogation a "Sisyphean burden": legally granted but practically unenforceable.

Financial and Safety Distortions from Failed Recourse

In case of subrogation failure, the cost of product defects is factored into the actuarial models used in human risks. The actuaries are good in pricing behavioural data provided by the dashcams and the usage telematics, but are weak with the opaque AI failure. Such confusion drives up the premiums across the economy with everyone covering tech failures. AV insurance

loses actuarial integrity which may make adoption aversive or may result in market instability.

Worse, moral hazard emerges. The theory of economics assumes that the cost ought to be borne by the risk-minimizing party which is the manufacturers who are in a better position to repeat algorithms[8]. Information control allows them to outsource the defects and blunt incentives to safety beyond human standards (e.g., 94 percent of crashes with a human error cause). The same risks become socialized and mandatory insurance is an OEM subsidy that undermines the principles of indemnity.

Things get aggravated by cyber elements. Manufacturers are able to blame failures to unauthorized modifications passing the burden of questioning to owners or hackers. The burden to demonstrate proximate causation requires security logs in their possession that reflect data breach litigation, where plaintiffs identify source of concrete injuries.

Case for Legislative Reform: Bridging the Scission

Restoring equilibrium demands targeted interventions beyond voluntary guidelines like NHTSA's AV STEP[9].

Mandatory Data Transparency

Enact post-accident "black box" mandates: standardized, tamper-proof logs of sensor data, decisions, and updates, accessible to insurers, courts, and regulators within days. Tie compliance to type approval—non-disclosure voids market authorization. Third-party auditors ensure privacy while enabling claims. This mirrors aviation's flight data recorders, proven in liability allocation.

Burden-Shifting Presumptions

Enact rebuttable presumptions: where an AV does not pass a reasonable driver test, and the data is not disclosed, then assume that the manufacturer was at fault. Defendants have to prove their logs are false through flipping asymmetry. Delays are avoided by time-bound discovery (e.g., 30 days). This conforms to the trends of EU PLD lightening the AI burdens of proof[10].

[8] Guido Calabresi, *The Costs of Accidents: A Legal and Economic Analysis* 135–40 (Yale Univ. Press 1970).
[9] Nat'l Highway Traffic Safety Admin., *Automated Vehicles for Safety: Enabling Safety Innovations* (2020).
[10] European Commission, Liability Rules for Artificial Intelligence COM (2022) 496 final.

Enterprise Liability Funds

Potentially politically controversial and yet effective: AV accidents manufacturer-funded no-fault pools, with tort immunity. The money is refunded directly to the victims, and the contributions are pegged to safety information provided to the watchdogs. This makes it in-house, drives innovation and makes insurance easier. An example is the road traffic fund in Germany, but modified to technology.

1. Short-term: Amend AV acts with data mandates and presumptions.

2. Medium-term: Pilot funds in high-AV zones (e.g., UK trials).

3. Harmonization: EU-UK-US alignment via trade pacts, standardizing logs.

These fix the "subrogation scission," ensuring manufacturers bear algorithmic risks.

Broader Implications for Law and Policy

This discussion reveals a fault line in the doctrine: the common law evidentiary measure is made to operate in mechanical times, but not AI obscurity. Policymakers balanced the compensation of the victims but did not take care of the recourse enforcement, putting AV implementation at risk[11]. Reforms make insurance viable, provide incentives to maintain safety and fairly price tech risks.

Multi-disciplinary dimension enhances urgency. Premiums can be made accurate because of undistorted pools. On the economic front, they reduce the moral hazard[12]. Learning is fastened by technological flows of data. Lacking action, AVs promise volatile markets; with, more secure roads.

Conclusively, Information asymmetry destroys subrogation, yet it can be repaired by specific legislative actions, which should reestablish the liability where control is held: in the case of manufacturers.

[11] U.S. Gov't Accountability Off., *Vehicle Automation: Comprehensive Plan Needed for Federal Oversight*, GAO-21-88 (2021).
[12] Guido Calabresi, *The Costs of Accidents: A Legal and Economic Analysis* 135–40 (Yale Univ. Press 1970).