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FACULTY OF LAW

THE LAW APPLICABLE TO LIABILITY ARISING FROM THE USE OF SELF-DRIVING CARS IN THE WAKE OF THE FOURTH INDUSTRIAL REVOLUTION: A GLOBAL COMPARATIVE ANALYSIS

by

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Abstract

This study explores the liability associated with the use of autonomous vehicles. With the increase in efforts by automobile industries to manufacture driverless cars, the issue of liability occupies the front seat of the discussion. A major benefit of autonomous and connected vehicles is their potential to ameliorate, if not eradicate, avoidable accidents on roads. Currently, it is estimated that 90% of road accidents are caused by human error. The epoch of driverless vehicles, where the narrative will drastically change, is upon us. This means a shift away from human liability to machine liability, since these technologies have in-built algorithms to ensure autonomous decisions by the vehicle.

Product liability becomes crucial in the wake of driverless cars. The gradual and ultimate shift of liability from the traditional human driver to the machine 'driver' coupled with the cross-border sale of driverless vehicles provide justification for scholarly attention. Accidents may now be attributed to technological error and not human mistake. Conflict of law issues become central in instances where manufacturers and users live in different parts of the world.

This paper critically examines the current state of product liability law at the global, supranational and national levels. It interrogates the law applicable in cross-border accidents in the event of malfunction of the driverless vehicle technology. Further, it reflects on the 1971 Hague Traffic Accidents Convention and the 1973 Hague Convention on Products Liability. At the supranational level, the product liability provisions of the Rome II Regulation of the EU are highlighted and their interconnections with the two Hague Conventions are discussed. The legal perspectives in the United States of America (US) and Africa are discussed relative to driverless vehicle technology.

Finally, the study advocates a global legislative framework to regulate product liability to ensure legal certainty and predictability. This paper suggests a fusion of provisions in existing legislative systems to strengthen legal predictability.

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PART I

Introduction

1.1 History of the fourth industrial revolution

The first industrial revolution was propelled by the invention of railway technology and steam engines to expand the frontiers of mechanical operation.[1] Mass production was the hallmark of the second industrial revolution, ushering in the invention of electric power and industrial plants.[2] The third witnessed the emergence of digital or computer technology, paving the way for computing and the use of the internet.[3] Schwab describes the fourth industrial revolution as follows: "it is the fusion of these technologies and their interactions across the physical, digital and biological domains that makes the fourth industrial revolution fundamentally different from the previous revolutions".[4] This digital interaction has birthed 3D printing, advanced robotics, quantum computing, artificial intelligence and autonomous vehicles, among others.[5] The theme of this dissertation centres on self-driving cars and product liability associated with them in the field of private international law.

1.2 Emergence of autonomous vehicles

Self-driving vehicles were first developed in the 1930s due to the advancement in military technology at that time.[6] In 2005, the Defense Advanced Research ·Projects Agency (DARPA) organised a contest among civilian engineers to invent self-driving cars for the use of the military.[7] In its 2007 edition, DARPA needed autonomous vehicles that could self-

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[1] Schwab *The Fourth Industrial Revolution* (2016) 6-7; Garbie *Sustainability in Manufacturing Enterprises* (2016) 1.

[2] Bartodziej *The Concept Industry 4.0* (2017) 32; Kayembe and Nel "Challenges and opportunities for education in the fourth industrial revolution" 2019 *African Journal of Public Affairs* 79 81.

[3] Karacay and Aydm "Internet of things and new value proposition" in Ustundag and Cevikcan (eds) *Industry 4.0: Managing the Digital Transformation* (2018) 173.

[4] Schwab (n 1) 8; Gilchrist *Industry 4.0: The Industrial Internet of Things* (2016) 195.

[5] Bogoviz, Osipov, Chistyakova and Borisov "Comparative analysis of formation of industry 4.0 in developed and developing countries" in Popkova, Ragulina and Bogoviz (eds) *Industry 4.0: Industrial Revolution of the 21st Century* (2019) 157; Kelly *Constructing Leadership 4.0* (2019) 35; Yang and Cheng "Educational mobility and transnationalization" in Gleason N (ed) *Higher Education in the Era of the Fourth Industrial Revolution* (2018) 40.

[6] Sejnowski *The Deep Learning Revolution* (2018) 4; Levy "No need to reinvent the wheel: why existing liability law does not need to be preemptively altered to cope with the debut of the driverless car" 2015 *Journal of Business Entrepreneurship and Law* 355 361.

[7] Levy (n 6) 361.

drive through cities, comply with traffic regulations, switch lanes and manoeuvre around obstacles with the aid of the Global Positioning System (GPS).[8] Google seized the opportunity to engage a successful team to develop its own system.[9]

The state of Nevada was the first in the United States of America (USA) to regulate driverless cars technology. In its regulation, it defined autonomous vehicles in the following terms:

> "Autonomous technology means technology, which is installed on a motor vehicle, which has the capability to drive the motor vehicle without the active control or monitoring of a human operator."[10]

According to the National Highway Traffic Safety Administration (NHTSA)[11] policy, a vehicle is a driverless car if that "vehicle can do all driving in all circumstances".[12]

1.3 Mechanics of self-driving cars

A basic feature of autonomous vehicles is a computer programmed navigation system.[13] This helps the vehicle to decide the best route and provides traffic information.[14] The programmed navigation system is enhanced by utilisation of the GPS, digital maps, Light Detection and Ranging (Lidar) and cameras.[15] It has a 360-degree-rotating Radio Detection and Ranging (Radar) on the roof of the vehicle which picks up signals of other vehicles, pedestrians, objects and obstacles.[16] Experts say that the radar can differentiate between a "paper bag and

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[8] Reschka "Safety concept for autonomous vehicles" in Maurer, Gerdes, Lenz and Winner (eds) *Autonomous Driving* (2016) 477.

[9] Levy (n 6) 361.

[10] Levy (n 6) 360.

[11] < https://www.nhtsa.gov/technology-innovation/automated-vehicles> (25 July 2019).

[12] *et seq*.

[13] Roe "Who's driving that car?: An analysis of regulatory and potential liability frameworks for driverless cars" 2019 *Boston College Law Review* 317 324.

[14] Faisal, Yigitcanlar, Kamruzzaman and Currie "Understanding autonomous vehicles: a systematic literature review on capability, impact, planning and policy" 2019 *Journal of Transport and Land Use* 45 49.

[15] Wang *Road Terrain Classification Technology for Autonomous Vehicles, Unmanned System Technologies* (2019) 1; Lipson and Kurman *Driverless Intelligent Cars and the Road Ahead* (2018) 21; Bruyne and Vanleenhove "The Rise of Self-Driving Cars: Is the Private International Law Framework for non-contractual obligations posing a bump in the road?" 2018 *IALS Student Law Review* 14 15.

[16] Bruyne and Vanleenhove (n 15) 15.

a small animal at 100 yards".[17] Google's lidar (Light Detection and Ranging unit) has a visual range of 100 metres and can pick up signals at 1.3 million readings per second.[18] Proper functioning of the radar, lidar, cameras and computerised algorithms enables the autonomous vehicle to secure an accurate perception of the road and take appropriate traffic decisions.[19] It follows that failure or malfunctioning of a system involved in the operation of an automated vehicle can have very grievous consequences.

The first known casualty of a vehicle with automated technology was recorded in Tempe in Arizona on 18 March 2018, where a self-driving car moving at 45 miles per hour struck and killed a pedestrian.[20] Concerns have arisen due to the fact that autonomous vehicles' radars can efficiently pick up signals only at relatively slow speeds and are unable to overcome bad weather conditions or respond to emergencies like ambulance sirens adequately.[21] The issues of hacking and cyberattacks are still not fully resolved in the self-driving technology. In July 2015, a hacker demonstrated how he could use his device "Ownstar" to locate, unlock and start the engine of an autonomous vehicle through its iOS and Android app.[22]

Can a driver or vehicle user, not in control of a fully autonomous vehicle, be held liable for system malfunctioning which results in an accident? Should the manufacturer be blamed for hardware, software or technical failure of the computer programme of the driverless vehicle? While answers to the above questions are quite straightforward at the substantive law level in national laws, the same cannot be said in respect of cross-border liabilities involving self-driving cars. A lacuna exists in the field of private international law on the applicable law to liabilities arising out of the use of driverless technology. Some academics predict a shift from

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[17] Levy (n 6) 363.

[18] 363 *et seq;* Poczter and Jankovic "The google car: driving towards a better future?" 2014 *Journal of Business Case Studies* 7 8; Lari, Douma and Onyiah "Self-driving vehicles and policy implications: current status of autonomous vehicle development and Minnesota policy implications" 2015 *Minnesota Journal of Law, Science & Technology* 735 744.

[19] Bruyne and Vanleenhove (n 15) 15.

[20]Neels and Fredericks "Liability arising from traffic accidents involving self-driving cars in private international law" 2019 unpublished paper 1; Roe (n 13) 317;

[21] Levy (n 6) 364.

[22] 385 et seq.

drivers and keepers to manufacturers in respect of liability arising out of the use of self-driving cars.[23]

1.4 Aim and objective

The main purpose of this dissertation is to evaluate the law applicable to liability arising from the use self-driving vehicles at the international level with an emphasis on product liability. Pursuant to this objective, the current global legal framework will be critically examined. Focus will be placed on international conventions on product liability and strides made in the European Union (EU), United States of America and Africa. The object is to ascertain whether the current legal framework is adequate to deal with issues of product liability and whether the same can ensure predictability and legal certainty. In the final analysis, this study will make recommendations based on the findings of this study.

1.5 General delictual liability

The consensus among academics is that there are fundamentally two forms of delictual liability – strict liability and fault-based liability.[24] It is instructive to note that some academics dispute the difference and describe this as a "false dichotomy".[25] Under fault-based liability, it must be demonstrated that not only did the tortfeasor cause the damage but he was also negligent.[26] In countries like England, Ireland and Belgium delictual liability is fault-based.[27] It is noteworthy that legal systems that utilise fault as a basis for the allocation of liability possess an effective insurance mechanism that ensures that victims of tortious acts are adequately compensated.[28]

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[23] Graziano "Cross-border traffic accidents in the EU – the potential impact of driverless cars" 2016 *Policy Department C: Citizens' Rights and Constitutional Affairs* 30.

[24] Lahe "Forms of liability in the law of delict: fault-based liability and liability without fault" 2005 *Juridica International* 60 62.

[25] Goldberg and Zipursky "The strict liability in fault and the fault in strict liability" 2016 *Fordham Law Review* 743 743.

[26] Graziano (n 23) 20; Alheit "Delictual liability arising from the use of defective software: comparative notes on positions of parties in English law and South African Law" 2006 *CILSA* 265 271.

[27] 20-21 *et seq*.

[28] Liivak and Lahe "Delictual liability for damage caused by fully autonomous vehicles: Estonian perspective" 2018 *Masaryk University Journal of Law and Technology* 49 58.

On the other hand, strict liability stems from the concept of the source of greater danger.[29] The concept stipulates that the defendant who has custody of an object of greater danger must be held liable regardless of fault.[30] The Prussian Railway Act of 1838 in Germany was the first substantive law introduction of strict liability.[31] Then, in 1896, the French Court of Cessation awarded damages for an industrial accident without examining the fault of the company.[32] Currently, countries like Germany, France, Spain, Italy, Switzerland, Austria and the Netherlands apply strict liability in delictual claims.[33] In Germany, strict liability applies to traffic accidents and the use of electricity, gas and atomic energy.[34]

1.6 Autonomous vehicles and product liability

Should the owner or keeper or user of a driverless car be held liable despite his inability to exercise control over an autonomous vehicle to ensure safety? An affirmative answer may seem unfair where the user or owner of the driverless vehicle has no power to regulate the algorithms computed by the manufacturer.[35] Product liability rules are therefore important to ensure legal certainty and predictability.

At the international level, the 1973 Hague Convention on Products Liability and the 1971 Hague Convention on Traffic Accidents regulate choice of law rules in contracting states. At the supranational level like the European Union, the Rome II Regulation[36] and the Product Liability Directive[37] regulate conflict of law rules on product liability and impose strict liability on cross-border manufacturers of defective products.[38] There are instances where international laws and supranational laws overlap; therefore, there is a need for a coherent formulation of conflict of law rules to ensure legal certainty and predictability.

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[29] 57 *et seq*.

[30] 57 *et seq*.

[31] Lahe (n 24) 62; Van der Walt "Strict liability in the South African law of delict" 1968 *CILSA* 49 57.

[32] 62 *et seq*.

[33] Graziano (n 23) 21.

[34] Opoku "Delictual liability in German law" 1972 *International and Comparative Law Quarterly* 230 240.

[35] Wagner "Robot Liability" https://ssrn.com/abstract=3198764 (25 June 2019).

[36] (EC) No 864/2007.

[37] Directive 85/374/EEC.

[38] Stone "The Rome II Regulation on choice of law in tort" 2007 *Ankara Law Review* 95 112.

1.7 Organisation of work

1.7.1 Part II

Part II of this dissertation discusses the historical trajectory of the general approaches to choice of law in cross-border tort. The principles discussed are the *lex fori, lex loci delicti commissi,* the proper law and the *lex damni*. The objective is to give a chronological analysis of the development of these approaches and the criticisms levelled against each of them.

1.7.2 Part III

Part III of this dissertation explores the existing legal positions in the international and supranational legal instruments relating to driverless technology. This part will discuss the 1973 Hague Convention on Products Liability, the 1971 Hague Convention on Traffic Accidents and the Rome II Regulation. A comparative analysis of the two Hague Conventions will be offered so as to ascertain whether the two should be modified relative to the advancement in vehicular technology. Also, the efficacy of the Rome II Regulation in respect of driverless cars in European law will be examined.

1.7.3 Part IV

Part IV focuses on the conflict rules in Europe, the United States of America and Africa. Legislation and attempts at regulating autonomous vehicles will be discussed. The emphasis will be on current legislation in respect of product liability. In Africa, countries like Ghana and South Africa which have expressed a keen interest in Industry 4.0 will be discussed to determine whether their conflict rules can regulate the driverless technology.

1.7.4 Part V

Part V offers general observations, recommendations and concluding reflections on the way forward. This dissertation advocates for a coherent uniform legal order to regulate cross-border delictual liability arising from driverless cars.

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PART II

General approaches to applicable law in cross-border delict

This part discusses general principles in cross-border delict. The principles to be discussed are the *lex fori*, *lex loci delicti commissi*, the proper law and the *lex damni*. It is instructive to note that there is no academic consensus on the best approach to be utilised in transnational delict.[39] The analysis in this part excludes the double actionability rule as espoused in *Phillips v Eyre*[40] because of the academic consensus that it is a rule of jurisdiction and not choice of law.[41]

2.1 *Lex fori*

Savigny is the leading proponent of the *lex fori* approach to dealing with cross-border delict.[42] He reasons that foreign law cannot be employed to resolve criminal or delictual issues because both have proclivity to the public policy of the forum.[43] Professor Ehrenzweig argues in support of the *lex fori* to the effect that it is the basic rule, irrespective of any foreign element which may enhance the rights of the parties.[44] The *lex fori* approach was at play in *The Halley case*,[45] where the Privy Council applied English law instead of Belgian law on the basis that English law provides no remedy for such negligence. The Privy Council held the following:

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[39] Forsyth *Private International Law* (2012) 352; Schoeman, Roodt and Wethmar-Lemmer *Private International Law in South Africa* (2014) 65.

[40] (1870) LR 6 QB 1. The later cases of *Boys v Chaplin* [1971] AC 356 and *Red Sea Insurance Co v Bouygues SA* [1994] 3 WLR 926 (PC) created an exception to the effect of the law of the country with the most significant relationship. The Private International Law (Miscellaneous Provisions) Act 1995 per section 11(c) designates the law with the most significant relationship.

[41] Pearl "Tort in the conflict of laws" 1968 *Cambridge Law Journal* 219 220.

[42] Schoeman, Roodt and Wethmar-Lemmer (n 39) 66; Kahn-Freund "The lex loci delicti and its crisis" 1968 *Hague Academy of International Law* 36 40; de Boer "The purpose of uniform choice of law rules: the Rome II Regulation" 2009 *Netherlands International Law Review* 295 296; Hook "New Zealand's choice of law rules relating to tort" 2017/2018 *Yearbook of Private International Law* 313 314.

[43] Reed "The Anglo-American revolution in tort choice of law principles: paradigm shift or pandora's box?" 2001 *Arizona Journal of International and Comparative Law* 868 870.

[44] Castel "Book review: a treatise on the conflict of laws by Albert A. Ehrenzweig" 1964 *Canadian Bar Review* 331 333; Rheinstein "Ehrenzweig on the law of conflict of laws" 1965 *Oklahoma Law Review* 238 239.

[45] (1868) LR 2PC 193.

> "It is, in their Lordships' opinion, alike contrary to principle and to authority to hold that an English Court of Justice will enforce a Foreign Municipal Law and will give a remedy in the shape of damages in respect of an act which, according to its own principles, imposes no liability on the person from whom the damages are claimed".[46]

The *lex fori* approach has largely been criticised as providing an avenue for forum shopping.[47] Forsyth intimates that the reasoning behind the *lex fori* approach is not tenable because delictual claims hinge on compensation not public policy.[48] He argues that adherence to the *lex fori* approach can lead to "grave injustice".[49]

2.2 *Lex loci delicti commissi*

The *lex loci delicti commissi* deals with the law of the country where delict was occasioned.[50] Its theoretical foundation is predicated on the vested rights theory and the theory of territorial sovereignty of countries.[51] The Supreme Court of Canada in the case of *Tolofon v Jensen*[52] lent support to the approach with a caveat as to its application in international cases.[53] The court, speaking through Justice La Forest, held,

> "Ordinarily people expect their activities to be governed by the law of the place where they happen to be and expect that concomitant legal benefits and responsibilities will be defined accordingly. The government of that place is the only one with the power to deal with these activities. The same expectation is ordinarily shared by other states and by the people outside the place where an activity occurs. If other states routinely applied their laws to activities taking place elsewhere, confusion would be the result.

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[46] Hancock *Torts in the Conflict of Laws* (1942) The University of Michigan Press 14.

[47] Castel "Conflict of laws - foreign tort - not justifiable by the lex loci delicti - residence of defendant - interprovincial comity - judicial creativity" 1990 *Alberta Law Review* 665 666; Pearl (n 41) 221; Martinek "Codification of private international law - a comparative analysis of the German and Swiss experience" 2002 *TSAR* 234 244.

[48] Forsyth (n 39) 352.

[49] Forsyth (n 39) 353.

[50] Forsyth (n 39) 353; Schoeman, Roodt and Wethmar-Lemmer (n 39) 68.

[51] Schoeman, Roodt and Wethmar-Lemmer (n 39) 68; Huo "Choice of law in tort: a Chinese approach" 2009 *Journal of Cambridge Studies* 82 86.

[52] 1995 120 DLR (4th) 289.

[53] Reed (n 43) 922; John "The new choice of law rules in tort: the aftermath of *Tolofson v Jensen*; *Lucas v Gagnon"* 1999 *Revue québécoise de droit international* 47 54.

> In our modern world of easy travel and with the emergence of a global economic order, chaotic situations would often result if the principle of territorial jurisdiction were not, at least, generally, respected. Stability of transactions and well-grounded legal expectations must be respected. Many activities within one state necessarily have impact in another, but a multiplicity of competing exercise of state power in respect of such activities must be avoided".[54]

This approach has some limitations. Forsyth argues that in cases where a defective product causes harm to different claimants in different jurisdictions, it will be difficult to elect one legal system for the approach.[55] Also, there are instances where the place of harm is easily ascertained but strong connections in terms of the parties' common residence may swing the pendulum to a different legal system.[56]

2.3 The proper law

JHC Morris spearheads the proper law approach.[57] The approach on the grounds of public policy designates the law of the place with the "most significant connection".[58] The approach was adopted in the American case of *Babcock v Jackson*[59] and the South African case of *Burchell v Anglin*.[60] In the *Babcock case*, a passenger succeeded in the claim of negligence against a driver whose reckless driving caused injury to her while she was a passenger in the driver's car in Ontario, Canada. The two parties were from New York, where the vehicle was also registered, and the insurers located. Justice Fuld gave the following judgment:

> "Justice, fairness and the 'best practical result' may best be achieved by giving controlling effect to the law of the jurisdiction which, because of its relationship or

[54] *Tolofon v Jensen* (1995) 120 DLR (4th) at 305.

[55] Forsyth (n 39) 355; Schoeman, Roodt and Wethmar-Lemmer (n 39) 68; Kiggundu "Choice of law in delict: the rise ans rise of the *lex loci delicti commissi*" 2006 *SA Merc LJ* 97 99.

[56] *Babcok v Jackson* 191 NE 2d 279 (1963).

[57] Morris "The proper law of a tort" 1951 *Harvard Law Review* 881 883; Forsyth (n 39) 356; Schoeman, Roodt and Wethmar-Lemmer (39) 67.

[58] Morris (n 55) 888; Schoeman, Roodt and Wethmar-Lemmer (n 39) 67; Sherwood A "Babcock v Jackson: the transition from *lex loci delicti rule* to the dominant contacts approach"1964 *Michigan Law Review* 1358 1370.

[59] 191 NE 2d 279 (1963); Neels and Fredericks (n 20) 6.

[60] 2010 (3) SA 48 (ECG).

contact with the occurrence or the parties, has the greatest concern with the specific litigation". [61]

In the *Burchell case*, the court declined the invitation to apply the *lex loci delicti rule* and rather applied the law with the most significant connection.[62] This decision lends support to the proper law approach.[63] The main criticism levelled against the proper law approach is the absence of clear rules to ascertain the jurisdiction with the most significant connection to the delict.[64]

2.4 *Lex damni*

The general rule under European law is that *lex damni* applies.[65] It is viewed as the modern approach to delictual liability.[66] Article 4(1) of Rome II Regulation of the European Union assigns "the law of the country in which the damage occurs, irrespective of the country in which the event giving rise to the damage occurred and irrespective of the country or countries in which the indirect consequences of that event occur".[67] The *lex damni* is displaced where the victim of the delict and the person liable have the same habitual residence at the time of the delictual event.[68] In circumstances where, from all indications, the delict is "manifestly more closely connected with another country, the law of that country shall apply".[69] Product liability cases are governed by five cascading rules, which shall be discussed in detail in Part III.[70]

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[61] 191 NE 2d 279 (1963) at 283.

[62] Marx "At last a South Africa proper law of delicit – Burchell v Anglin 2010 3 SA 48 (ECG)" 2011 *Obiter* 224 232; *Cf* Schulze "Conflict of laws" 2010 *Annual Survey of SA Law* 179 186.

[63] Schoeman, Roodt and Wethmar-Lemme (n 39) 67.

[64] Schoeman, Roodt and Wethmar-Lemmer (n 39) 67; Juenger "Choice of law in interstate torts" 1969 *University of Pennsylvania Law Review* 202 212; Roodt "Reflections on the theory, doctrine and method in choice of law" 2007 *CILSA* 76 84.

[65] Schoeman, Roodt and Wethmar-Lemmer (n 39) 69.

[66] de Boer (n 42) 316.

[67] Article 4(1) of Rome II Regulation.

[68] Article 4(2) of Rome II Regulation.

[69] Article 4(3) of Rome II Regulation.

[70] Article 5 of Rome II Regulation.

2.5 Conclusion

From the above, the trajectory of the development of the approaches can be seen. The *lex fori*, which hinged on public policy, was displaced by the *lex loci delicti rule*. The inherent flaws in the *lex loci delicti* approach ushered in the proper law approach, as articulated by Morris. This was witnessed in the *Babcock case,* where the court decided that New York had the most significant close connection with the delict in Ontario, Canada.

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PART III

Current legal position

3.1 International law of delict

This part gives an overview of the legal position in the various international and supranational legislative frameworks utilised to ascertain the applicable law in cross-border delictual liability involving cars with self-driving technology. International and supranational instruments relevant in this regard are the Hague Convention on the Law Applicable to Traffic Accidents 1971, the Hague Convention on the Law Applicable to Products Liability 1973, and the Rome II Regulation. The relationships between the various instruments will be discussed with special attention to the different outcomes that each instrument produces.

3.2 Hague Convention on the Law Applicable to Traffic Accidents 1971

Currently, there are twenty-one (21) contracting state parties to the Convention.[71] The object of the Convention is to establish "common provisions on the law applicable to civil non-contractual liability arising from traffic accidents".[72] Though issues have been raised by legal commentators on the lack of proper characterisation in the Convention, that is not the focus of this part.[73]

A consideration of the Convention is important because of its universal applicability regardless of whether the law applicable in a given situation is the law of a non-contracting state.[74] Also, in the EU, the Convention has precedence over the Rome II Regulation.[75] This

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[71] https://www.hcch.net/en/instruments/conventions/status-table/?cid=81 (26 June 2019).

[72] Preamble of the 1971 Hague Convention on Law Applicable to Traffic Accidents.

[73] Essen" Explanatory Report on the Hague Convention on Law Applicable to Traffic Accidents" 7.

[74] Article 11 of the Hague Convention on Law Applicable to Traffic Accidents 1971; Armstrong "The Hague Convention on the Law Applicable to Traffic Accidents: search for uniformity amidst doctrinal diversity" 1972 *Columbia Journal of Transnational Law* 74 93.

[75] Article 28(1) of the Rome II Regulation stipulates that existing international instruments takes precedence over the Regulation when it is not concluded between Member States.

applies only to EU Member States that are parties to the Convention.[76] The Convention does not deal with product liability.[77]

3.2.1 The driver

A fundamental assumption in the Convention is that there is "a driver".[78] In the era of autonomous vehicles fully powered by computer programs, it is expected that the international instrument will be amended to reflect the current global trend in technology.[79]

3.2.2 The rule

The basic choice of law rule under the 1971 Hague Convention is the *lex loci delicti commissi*.[80] The law of the place where the accident occurred is the basic rule per Article 3 of the instrument. Article 3 stipulates as follows: "The applicable law is the internal law of the State where the accident occurred". Legal commentators are of the view that the *lex loci delicti commissi* offers a "simple, clear and easy to apply" rule for the avoidance of ambiguity.[81]

Article 4 of the Convention creates the *lex vehiculi*, the law of the State of registration of the vehicle, as exception for *lex loci delicti commissi* in Article 3.[82] The policy rationale for the *lex vehiculi* by the Hague Conference centred on its ready applicability and the fact that the insurer of the vehicle may be habitually resident in the State of registration.[83]

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[76] Graziano "The Rome II Regulation and the Hague Convention on Traffic Accidents and Product Liability – interaction, conflicts and future perspectives" 2008 *Nederlands Internationaal Privaatrecht* 425 426; Stone (n 38) 102.

[77] Armstrong (n 74) 78-79.

[78] Article 4(a) designates the driver as one of the classes of persons to be held liable in an event where one vehicle is involved in an accident in a State other than the State of the registration of the vehicle.

[79] Graziano (n 23) n 39.

[80] Papettas "Choice of law for cross-border road traffic accidents" 2012 *Policy Department C: Citizens' Rights and Constitutional Affairs* 15; Nita "The law applicable to cross-border traffic accidents" 2015 *International Conference Education and Creativity for a Knowledge-Based Society* 257 258; Krvavac "The Hague Convention on the Law Applicable to Traffic Accidents and Rome II Regulations" 2018 *Collection of Papers Faculty of Law Nis* 141 143.

[81] Essen (n 73) 13.

[82] 16 *et seq.*

[83] Armstrong (n 74) 81.

Where a vehicle involved in an accident has a different place of registration from the place where the accident occurred, it is the *lex vehiculi* which applies.[84] The *lex loci delicti commissi* is displaced where there is more than one vehicle involved in an accident, and all vehicles involved are registered in the same country.[85] Where persons outside the vehicle are involved, the *lex vehiculi* applies where their habitual residence coincides with the state of registration.[86] The exceptions to the *lex delicti commissi* under the Convention are the *lex vehiculi* and the habitual residence of the parties involved.[87]

3.3. Hague Convention on the Law Applicable to Products Liability 1973

This Convention was concluded on 2 October 1973, but came into effect only in January 1977.[88] The Convention has universal applicability.[89] Article 11 of the Hague Product Liability Convention stipulates that its application "shall be independent of any requirement of reciprocity" and "shall be applied whether or not the applicable law is the law of a non-Contracting State".

3.3.2 The aim

The aim of the Convention is to "determine the law applicable to the liability of the manufacturers and other persons … for damage caused by a product, including damage in consequence of a misdescription of the product or of a failure to give adequate notice of its qualities, its characteristics or its method of use".[90] It has been argued that predictability in resolving product liability cases, insurance rates and helping manufacturers decide whether to make their goods available in a particular country are the advantages of the Convention.[91]

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[84] Article 4(a) of the 1971 Hague Convention.

[85] Article 4(b) of the 1971 Hague Convention.

[86] Article 4(c) of the 1971 Hague Convention.

[87] Graziano (n 76) 428; Neels and Fredericks (n 20) 9.

[88] < https://www.hcch.net/en/instruments/conventions/full-text/?cid=84> (28 June 2019).

[89] Article 11 of the 1973 Hague Product Liability Convention.

[90] Article 1 of Hague Convention on Product Liability 1973.

[91] Reese "Further comments on the Hague Convention on the Law Applicable to Products Liability" 1978 *Georgia Journal of International and Comparative Law* 311 313.

3.3.3 The rule

A victim-plaintiff in a product liability case under the Convention may elect either the law of the place of habitual residence of the manufacturer or the law of the state where the injury occurred, under limited circumstances.[92] Some legal commentators find these provisions to be pro-consumer while at the same time advancing the interests of the manufacturer.[93] This is for two reasons: first, the law of the manufacturer's habitual residence is already a law familiar to the manufacturer, and second, the law of the State of damage is also predictable since its marketing channels are established in the same State.[94]

Initially, the US wanted the plaintiff-victim to be afforded the opportunity to elect the law of the place of injury, the place of manufacture and the place where the product was purchased or acquired.[95] This proposal did not find favour with the European delegation because they wanted predictable rules.[96] In contrast, some academics find the criteria in Article 5 of the Hague Product Liability Convention "overly complex" in comparison with the Rome II Regulation.[97]

3.3.4 Manufacturer protection

Manufacturers and producers are protected under Article 7 of the Hague Product Liability Convention.[98] Article 7 stipulates that a manufacturer cannot be held responsible under the law of a country in which he/she could not have reasonably foreseen his/her products would be marketed.[99] The purpose of Article 7 is not to exonerate the manufacturer from liability but to afford him the benefit of the law of the country of his habitual residence being the applicable law.[100]

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[92] Articles 4-7 of 1973 Hague Convention on Product Liability; Reese (n 91) 315.

[93] Reese (91) 315.

[94] 315 *et seq*.

[95] Durham "Hague Convention on the Law Applicable to Product Liability" 1974 *Georgia Journal of International and Comparative Law* 178 182.

[96] Reese (n 91) 312.

[97] Graziano (n 23) 51; Neels and Fredericks (n 20) 12.

[98] Article 7 of the Hague Products Liability Convention.

[99] Durham (n 95) 189.

[100] 189 *et seq*.

3.4 Rome II Regulation

Before the Rome II Regulation, there were six different principles in resolving delictual conflicts involving product liability with a foreign element, in Europe.[101] These six principles were as follows: the parties choosing the law applicable to their extra-contractual liability, application of the governing law to a pre-existing contractual relationship, the victim choosing the applicable law under the ubiquity rule,[102] the approach under the Hague Convention on Products Liability, application of the law of the country with the most significant connection, and application of the law of the place of marketing or acquisition of the product.

Article 5, which provides the rules for product liability, stipulates,

> "1. Without prejudice to Article 4(2), the law applicable to a non-contractual obligation arising out of damage caused by a product shall be:
>
> (a) the law of the country in which the person sustaining the damage had his or her habitual residence when the damage occurred, if the product was marketed in that country; or, failing that,
>
> (b) the law of the country in which the product was acquired, if the product was marketed in that country; or, failing that,
>
> (c) the law of the country in which the damage occurred, if the product was marketed in that country.
>
> However, the law applicable shall be the law of the country in which the person claimed to be liable is habitually resident if he or she could not reasonably foresee the marketing of the product, or a product of the same type, in the country the law of which is applicable under (a), (b) or (c).
>
> 2. Where it is clear from all the circumstances of the case that the tort/delict is manifestly more closely connected with a country other than that indicated in

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[101] Graziano "The law applicable to product liability: The present state of the law in Europe and current proposals for reform" 2005 *International and Comparative Law Quarterly* 475 478.

[102] According to Graziano (n 101) 478, the ubiquity rule is the situation of a complex product liability where the *lex loci delicti commissi* is spread across different jurisdictions. In such a scenario, the victim elects the applicable law from the myriad of different laws; Nishitani "The Rome II Regulation from a Japanese point of view" 2007 *Yearbook of Private International Law* 175 179.

paragraph 1, the law of that other country shall apply. A manifestly closer connection with another country might be based in particular on a pre-existing relationship between the parties, such as a contract, that is closely connected with the tort/delict in question."

The object of the provision is to "meet the objectives of fairly spreading the risks inherent in a modern high-technology society, protecting consumer's health, stimulating innovation, securing undistorted competition and facilitating trade".[103]

3.4.1 Party autonomy

Under the Rome II Regulation, parties in cross-border product liability cases can agree to elect the applicable law.[104] The purpose is to accord respect to parties' choice and ensure certainty of the law applicable.[105] Article 14(1) affords parties the opportunity to choose an applicable law either *ex post* or *ex ante*.[106] This choice by the parties should be express or implied and made without coercion.[107] Legal commentary suggests that "mere silence" will not suffice.[108] Symeonides is sceptical about whether Article 14 can protect "weaker parties" given the fact that the choice of law by the parties may have no connections to the parties.[109]

3.4.2 Escape mechanism

An escape mechanism or device in a legal document provides a curative dose for the main rule to enable the choice of a law with close connection to the dispute.[110] Article 5(2)

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[103] Recital 20 of Rome II Regulation.

[104] Article 14 of Rome II Regulation; Graziano "Freedom to choose the applicable law in tort – Article 14 and 4(3) of Rome II Regulation" in Binchy and Ahern (eds) The Rome II Regulation on the Law Applicable to Non-Contractual Obligations: A New Tort Litigation Regime (2009) 114.

[105] de Boer "Party autonomy and its limitations in the Rome II Regulation" 2007 *Year of Private International Law* 19 21;

[106] Zhong "Rome II and its impact on choice of law" 2009 *Seton Hall Law Review* 861 893.

[107] Hellner "Choice of law by parties in Rome II: rationale of the differentiation between consumer and commercial contracts" 2019 *Oslo Law Review* 67 69.

[108] Graziano (n 23) 33.

[109] Symeonides "Party autonomy in Rome I and Rome II from a comparative perspective" in Boele-Woelki, Einhorn, Girsberger and Symeonides (eds) *Convergence and Divergence in Private International Law – Liber Amicorum Kurt Siehr* (2010) 548.

[110] Okoli C and Arishe G "The operation of the escape clauses in Rome Convention, Rome I Regulation and Rome II Regulation" 2012 *Journal of Private International Law* 513 513.

provides an escape mechanism meant for parties with direct business relationships and "innocent bystanders".[111] It is imperative to note that in cases of direct business relations between the parties, the escape mechanism applies when the delict is in connection with the business relations. This rule was pioneered by the Irish court in the case of *Grehan v Medical Incorporated*,[112] where the Court held that the applicable law of the delict should be the law with the "most significant relationship to the occurrence and parties".[113] Some academics contend that the escape mechanism could produce unfavourable results in instances where the country with closer connection to the delict operates a pro-manufacturer legal regime.[114]

3.4.3 Law of the injured party's habitual residence

Article 5(1)(a) stipulates that the law of the habitual residence of the injured party applies provided "the product was marketed in that country". The CJEU in *Declan O´Byrne v Sanofi Pasteur*[115] interpreted "marketing" in Article 11 of the Product Liability Directive as "… meaning that a product is put into circulation when it is taken out of the manufacturing process operated by the producer and enters a marketing process in the form in which it is offered to the public in order to be used or consumed". [116]

The rationale for this provision is to ensure that an easy and cost-effective avenue is available to an injured person in a defective product case.[117] As stated in the Explanatory Memorandum, the provision, in addition to meeting parties' expectations, also ensures "a high level of protection of consumer's health and preservation of fair competition on a given market".[118] Also, fair competition demands that all manufacturers and producers adhere to the same safety standards.[119]

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[111] Huber and Illmer "International product liability under Rome II" 2007 *Yearbook of Private International Law* 31 45-46.

[112] [1986] ILRM 627.

[113] Graziano (n 76) 479.

[114] Symeonides "Rome II: a centrist critique" 2007 *Yearbook of Private International Law* 148 169-170.

[115] [2006] ECR I-1313.

[116] *Declan O´Byrne v Sanofi Pasteur* [2006] ECR I-1313 at paragraph 32.

[117] Graziano (n 23) 34.

[118] Rome II Regulation Explanatory Memorandum 15.

[119] 15 *et seq*.

3.4.4 Law of the place of marketing and purchase

Article 5(1)(b) stipulates that "the law of the country in which the product was acquired, if the product was marketed in that country," shall apply. A manufacturer or producer of a product marketed in a country naturally expects that in the event of defect, the law of that country should apply.[120] In terms of competition, there is an equal application of law on all competitors in the country.[121] It is argued that applying the law of the place of purchase or advertisement promotes certainty.[122]

3.4.5 Law of the place of injury

Article 5(1)(c) designates the *lex damni* as the applicable law. Article 5(1)(c) stipulates that "the law of the country in which damage occurred, if the product was not marketed in that country," should be applied. Graziano suggests that the *lex damni* is a "subsidiary" connecting factors in the determination of the law applicable in product liability claims.[123] The reason for this is that the application of the law of the place of injury is to the benefit of innocent bystanders.[124]

3.4.6 Foreseeability

The law of the habitual residence of the manufacturer shall apply where damage occurs at a place where the manufacturer or producer did not foresee the product being marketed.[125] It is argued that this foreseeability clause will "rarely" be utilised given the global mobility of products and also the absence of case law before the inception of the Rome II Regulation that held that liability was not foreseeable by the defendant.[126] Some academics argue that

[120] Graziano (n 23) 34; Stone (n 38) 121.

[121] Graziano (n 23) 34.

[122] Graziano (n 23) 34.

[123] Graziano (n 23) 35.

[124] Graziano (n 23) 35.

[125] Article 5(1) second indent.

[126] Graziano (n 23) 35.

foreseeability under the subjective lenses of the manufacturer points to the manufacturer's habitual residence and gives "unjustified control over the applicable law".[127]

3.4.7 Common habitual residence of the parties

The opening of Article 5(1) "Without prejudice to Article 4(2) …" indicates that where the injured party and the manufacturer have a common habitual residence, that law of their habitual residence applies.[128]

3.5 Conclusion

The current framework of laws regulating cross-border traffic accidents is best described as undesirable since it fosters legal uncertainty.[129] Due to the fact that not all EU countries are signatories to the 1973 Hague Convention on Products Liability, the applicable law to a delict involving self-driving cars may differ. The concept of "driver" under the 1971 Hague Convention on Traffic Accidents may need amendment since autonomous vehicles are machine driven. In addition, there is the need for the 1971 Hague Convention to depart from the *lex vehiculi* since other countries may have a closer connection than the place of registration of the vehicle.

The Rome II Regulation offers parties the choice to elect an applicable law.[130] On the score of product liability, the Rome II Regulation offers five rules and an escape mechanism.[131] This piece of legislation provides a fair balance between consumer protection and safeguarding of manufacturers' interests.[132] Though the Rome II Regulation and the 1973 Hague Products Liability Convention employ different formulations on the applicable law, it is suggested that "literal" interpretation of both instruments does not incentivise the need for legislative action.[133]

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[127] Risso "Product liability and protection of EU consumers: is it time for a serious reassessment?" 2019 *Journal of Private International Law* 210 227.

[128] Stone (n 38) 121; Pinheiro "Choice of law on non-contractual obligations between communitarization and globalization – a first assessment of EC Regulation Rome II" 2008 *Rivista di diritto internazionale privato e processuale* 5 19.

[129] Graziano (n 76) 435.

[130] Article 14.

[131] Stone (n 38) 121.

[132] Recital 20 of the Rome II Regulation.

[133] Graziano (n 23) 56.

PART IV

Global legislative framework on product liability

4.0 Global analysis

This part explores the current systems of private international law rules in the national and supranational context relative to product liability, with practical implication for autonomous vehicles. The applicable rules pertaining to the EU, US and Africa, particularly Ghana and South Africa, are discussed.

4.1 European Union experience

As discussed in Part 3, two pieces of legislation regulate product liability issues in the EU. These are the 1973 Hague Convention on Products Liability and the Rome II Regulation. The Product Liability Directive 1985 85/374/EEC is relevant with regard to the definition of product liability.

4.1.1 What is a product under EU law?

Under the Product Liability Directive,[134] Article 2 defines a product as "all movables . . . even if incorporated into another movable or immovable" and this "includes electricity". Based on this definition, it is submitted that a fully autonomous vehicle, which has hardware and software components, can be described as a product under the Product Liability Directive.[135]

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4.1.2 What law applies?

With increased international mobility, the law applicable to a product liability dispute under the EU is important. The two parallel pieces of legislation in this regard are the 1973 Hague Convention on Products Liability and the Rome II Regulation. The EU Member States who are not signatories to the 1973 Hague Convention Products Liability apply the Rome II Regulation. Article 28 of the Rome II Regulation gives priority to the 1973 Hague Convention for Member States who are parties to the Convention. With different systems of

[134] 85/374/EEC

[135] Liivak "Liability of manufacturer of fully autonomous and connected vehicles under the Product Liability Directive" 2018 *International Comparative Jurisprudence* 178 181; Alheit "The applicability of the EU Product Liability Directive to software" 2001 *CILSA* 187 208; Raposo and Morbey "Product liability in Europe and China" 2015 *China Legal Science* 60 63; Rihtar K "Product Liability, Legal Transplants and Artificial Intelligence" 2019 *Harmonius: Journal of Legal and Social Studies in South East Europe* 292 300.

formulation by the two pieces of legislation there are practical implications for product liability involving autonomous vehicles.

The basic formulations of the applicable law under the 1973 Hague Convention are provided for in Articles 4 to 7. The Articles are reproduced here verbatim:

> "4. The applicable law shall be the internal law of the State of the place of injury, if that State is also –
>
> a) the place of the habitual residence of the person directly suffering damage, or
>
> b) the principal place of business of the person claimed to be liable, or
>
> c) the place where the product was acquired by the person directly suffering damage.
>
> 5. Notwithstanding the provisions of Article 4, the applicable law shall be the internal law of the State of the habitual residence of the person directly suffering damage, if that State is also –
>
> a) the principal place of business of the person claimed to be liable, or
>
> b) the place where the product was acquired by the person directly suffering damage.
>
> 6. Where neither of the laws designated in Articles 4 and 5 applies, the applicable law shall be the internal law of the State of the principal place of business of the person claimed to be liable, unless the claimant bases his claim upon the internal law of the State of the place of injury.
>
> 7. Neither the law of the State of the place of injury nor the law of the State of the habitual residence of the person directly suffering damage shall be applicable by virtue of Articles 4, 5 and 6 if the person claimed to be liable establishes that he could not reasonably have foreseen that the product or his own products of the same type would be made available in that State through commercial channels."

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It is imperative to note that the main connecting factors are the habitual residence of the manufacturer, the habitual residence of the injured party, the place of acquisition of the product, complex exceptions and an escape mechanism.[136] The escape device can be invoked by the manufacturer on the basis of foreseeability.[137]

On the other hand, the Rome II Regulation provides a cascade of six principles based on party autonomy, place of marketing (if foreseeable) and an escape mechanism. The escape device in the Rome II Regulation under product liability is aimed at the law of the place with

[136] Neels and Fredericks (n 20) 12; According Graziano (n 101) 480, it is the complex exceptions in the Convention that discourage countries from to be signatories.

[137] Neels and Fredericks (n 20).

"manifestly closer connection".[138] Academics argue that the choice of law formulations in Article 5 of the Rome II Regulation are simpler than they appear.[139]

4.2 US experience

Symeonides observes that even though product liability litigation is very high in the US, there is an absence of legislative framework to guide the hands of the courts.[140] This section explores the US outlook on conflict rules in product liability relative to autonomous vehicles. Also, the Restatement (Second) of conflict of laws and Restatement (Third) of product liability 1998 will be critically examined in relation to self-driving vehicles.

4.2.1. Historical trajectory of *lex loci delicti commissi* in America

Before the 1960s, the underlying principle of product liability in the US was the *lex loci delicti commissi* rule.[141] Some academics posit that the rule was influenced by Judge Joseph Story.[142] This view is reinforced by the fact that Story, sitting as a Supreme Court justice in the case of *Smith v Condry*,[143] ruled that the law applicable where two American ships collided in the UK was British law.[144] This doctrinal position was later enhanced by Beale, whose views were actually incorporated in the First Restatement.[145] Section 377 of the First Restatement states that "the place of the wrong is in the state where the last event necessary to make an actor liable for the alleged tort takes place".

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[138] Article 5(2).

[139] Symeonides (n 114) 169.

[140] Symeonides "Choice of law for product liability" the 1990s and beyond" 2004 *Tulane Law Review* 1249 1249.

[141] 1249 et seq; Hadjihambis "The lex loci delicti rule: its American origins" 1979 *Anglo-American Law Review* 139 141.

[142] Ena "Choice of law and predictability of decisions in product liability case" 2007 *Fordham Urban Law Journal* 1417 1421.

[143] 42 US 28 33(1843)

[144] Ena (n 142) 1421. The decision in *Smith v Condry* 42 US 28 33 (1843) was upheld in the case of *Alabama Great Southern Railroad Co. v Carroll* 11 So. 803, 808 (Ala. 1893), where the court refused to impose liability contrary to its public policy because the place of injury did not have such remedy.

[145] Ena (142) 1423.

Due to the unjust results sometimes arising from the application of *lex loci delicti commissi*, American courts developed escape devices to avoid its brunt.[146] The proper law approach by Morris had judicial support in 1963 in the *Babcock case.*[147] In the *Babcock case*, the court rejected the *lex loci delicti commissi* in favour of the law of "the jurisdiction which, because of its relationship or contact with the occurrence or the parties, has the greatest concern with the specific issue raised in the litigation".[148] The decision hinged on the "principles of justice and fairness" because the Ontario law prevented the plaintiff from seeking recovery while New York law permitted recovery if the defendant was at fault.[149] Some academics have described this landmark case as the demise of the *lex loci delicti commissi* rule in the US.[150]

4.2.2 The Restatement (Second) of conflict of laws

Upon the abandonment of the *lex loci delicti commissi* rule, the courts of America turned to the Restatement (Second).[151] Symeonides intimates that the new approach to product liability conflicts by the courts centres on two issues: "multiple" connecting factors and the "content of the substantive laws" of the place of injury. These factors are considered before the applicable law is chosen.[152] Some legal commentators note that the core utility of the Restatement (Second) of conflict of laws is the law of the place with the "most significant" connection with the delictual liability.[153] Section 145(2) stipulates that the factors to be considered to establish the "most significant" connections are the place of injury, the place where the behaviour causing the injury arose, the residence or place of business of the parties and the place where the parties' connection centres, if any.

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[146] 1425 et seq. These escape devices were in the form of exceptions which afforded the courts latitude to avoid the mechanical application of the *lex loci delicti* rule in circumstances where the tortfeasor and the victim have no connection with the place where the injury occurred. Also, in cases where the law of the place of injury left the victim remediless, exceptions were created to impose liability.

[147] Morris (n 57) 883.

[148] Ena (n 142) 1428. Chappell "Lex loci delicti and Babcock v Jackson" 1966 *William and Mary Law Review* 249 251.

[149] Ena (n 142) 1428; Deibert "Lex loci delicti: the conflict continues" 1972 *South Dakota Law Review* 374 391.

[150] Kiggundu (n 55) 100; Taylor "The trend away from lex loci delicti" 1965 *Washburn Law Journal* 277 284; Franks "Constitutional mandate of lex in foro loci delicti" 1972 *Cleveland State Law Review* 122 122.

[151] Ena (n 142) 1444; Meschewski J "Choice of law in Alaska: survival guide for using the Second Restatement" 1999 *Alaska Law Review* 1 7.

[152] Symeonides (n 140) 1252.

[153] Kirgis "Disentangling choice of law for torts and contracts" 2015 *Washington and Lee Law Review* 71 73.

These connections are to be decided under the directive of the State's choice of law rules.[154] In the absence of such directive or statutory law, consideration should be given to the needs of the interstate or international system, the policies of the forum, the policies of the State(s) interested in the determination of the dispute, the protection of justified expectations of the parties, and the fundamental policies in a particular field of dispute.[155] Other factors include ease in the determination and application of the applicable law and uniformity, certainty and predictability of results.[156]

Legal commentators describe section 6 of the Restatement (Second) as weak because of the absence of guidance where the factors to be considered lead to different results.[157] This critique is self-evident in the US case of *In re Air Crash Disaster at Washington, DC,*[158] where the court had to choose between the law of Washington and the law of the District of Columbia. The State of Washington, where the airliner was manufactured, applied the negligence standard, while the District of Columbia applied strict liability. In answer to this dilemma, Reese posits that the Restatement (Second) explores the possibility of general principles which could be enhanced till the "time is reached for rule making".[159]

Symeonides indicates that an important part of the choice of law process is the consideration of the substantive law which is potentially applicable in a given situation.[160] This additional process of review of the substantive law leads to pro-consumer states and pro-manufacturer states.[161] The pro-manufacturer state laws give short limitation periods for a victim to bring an action and proscribes punitive damages, among others.[162] The existence of shortfalls in the

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[154] Section 6 of the Restatement (Second).

[155] Moore "Hubbard v. Greeson: Indiana's misapplication of the tort sections of the Restatement (Second) of conflict of laws" 2004 *Indiana Law Journal* 533 542.

[156] Section 6(2)(f)-(g) of Restatement (Second).

[157] Rosenfeld "Conflict of law in product liability suits: joint maximization of states interests" 1986 *Hoftra Law Review* 139 152; McDougal "Toward the increased use of interstate and international policies in choice-of-law analysis in tort cases under the Second Restatement and Leflar's choice-influencing considerations" 1996 *Tulane Law Review* 2465 2479; Finch "Choice of law problems in Florida courts: a retrospective on the Restatement (Second)" 1995 *Stetson Law Review* 653 717.

[158] 559. F. Supp 333 (D.C. Cir. 1983).

[159] Reese "Choice of law: rules or approach" 1972 *Cornell Law Review* 315 325.

[160] Symeonides (n 140) 1257.

[161] 1257 *et seq*.

[162] 1257 *et seq*.

Restatement (Second) of conflict of laws has increased calls for a Restatement (Third) on conflict of laws.[163]

4.2.3 Restatement (Third) on product liability

Legal commentators ascribe the inception of the Restatement (Third) on product liability to the linguistic ambiguity of section 402A of the Restatement (Second).[164] Some academics argue that section 402A failed to define product liability along the lines of manufacturing, design and warning defectives.[165] Though the Restatement (Third) on product liability does not formulate rules of choice of law, it draws the distinction between manufacturing, design and warning defectives, which is imperative for the regulation of cross-border traffic accidents caused by autonomous vehicles.

4.3 The African experience

4.3.1 South Africa

The law applicable in matters of international delict was *res nova* in South African law.[166] In matters of jurisdiction, the position of the law is unclear on whether a civil wrong has to be

[163] Symeonides "The Third Conflicts Restatement first draft on tort conflicts" 2017 *Tulane Law Review* 1 4; Weintraub "The Restatement Third of conflict of laws: an idea whose time has not come" 2000 *Indiana Law Journal* 679 679; Borchers "How 'international' should a third conflicts restatement be in tort and contract" 2017 *Duke Journal of Comparative & International Law* 461 477; Roosevelt III and Jones "The draft Restatement (Third) of conflict of laws: a response to Brilmayer & Listwa" 2018 *Yale Law Journal Forum* 293 295; *Cf* Sedler "Choice of law in conflict tort cases: a third restatement or rules of choice of law?" 2000 *Indiana Law Journal* 615 615.

[164] Toke "Restatement (Third) of torts and design defectiveness in American product liability law" 1996 *Cornell Journal of Law and Public Policy* 239 240; Cantu "The illusive meaning of the term product under section 402A of the Restatement (Second) of torts" 1991 *Oklahoma Law Review* 635 637. Section 402A of the Restatement (Second) stipulates:

"(1) One who sells any product in a defective condition unreasonably dangerous to the user or consumer or to his property is subject to liability for physical harm thereby caused to the ultimate user or consumer, or to his property, if
(a) the seller is engaged in the business of selling such a product, and
(b) it is expected to and does reach the user or consumer without substantial change in the condition in which it is sold.
(2) The rule stated in Subsection (1) applies although
(a) the seller has exercised all possible care in the preparation and sale of his product, and
(b) the user or consumer has not bought the product from or entered into any contractual relation with the seller."

[165] Toke (163) 240.

[166] Forsyth (n 39) 350; Oppong *Private International Law in Commonwealth Africa* (2013) 151; Edwards "Choice of law in delict: rules or approach" 1979 *South African Law Journal* 48 50; Terblanche "Lex fori or lex loci delicti? The problem of choice of law in international delicts" 1997 *CILSA* 243 243.

actionable both in the foreign country and in South Africa to ground the court with jurisdiction.[167] The current position on the law applicable to foreign delict is *Burchell v Anglin.*[168] In the *Burchell case*, the plaintiff, a South African, sued the defendant, an American from the state of Texas, for defamation. The dilemma for the court was deciding which law should apply. The court, speaking through Crouse AJ, delivered the following judgment:

> "I was therefore obliged to look at the general development of private international law for guidance. I came to the conclusion that the double actionability rule is no longer the best test available. After considering the *lex loci delicti* as a possible test, I ultimately decided that the *lex loci* was only to be used as a factor in a balancing test to decide which jurisdiction would have the most real or significant relationship with the defamation and the parties."[169]

Effectively, in South Africa, the *lex loci delicti commissi* is employed as one of the connecting factors in the "balancing test" to ascertain which jurisdiction has the "most real or significant relationship with the defamation and the parties".[170]

On product liability, section 61(1) of the Consumer Protection Act[171] stipulates as follows:

> "61(1) Except to the extent contemplated in subsection (4), the producer or importer, distributor or retailer of any goods is liable for any harm, as described in the subsection (5), caused wholly or partly as a consequence of –
>
> (a) supplying any unsafe goods;
>
> (b) a product failure, defect or hazard in any goods; or
>
> (c) inadequate instructions or warnings provided to the consumer pertaining to any hazard arising from or associated with the use of goods,
>
> irrespective of whether the harm resulted from any negligence on the part of the producer, importer, distributor or retailer, as the case may be."

It appears that section 61(1) of the Consumer Protection Act provides for strict liability for product liability.[172] Neels and Fredericks posit that the applicable law within the meaning of

[167] Oppong (n 166) 150. Compare *Rogaly v General Imports* (Pty) Ltd 1948 (1) SA 1216.

[168] 2010 (3) SA 48.

[169] *Burchell v Anglin* 2010 (3) SA 48 at paragraph 127.

[170] Oppong (n 166) 151; Marx (n 62) 231.

[171] 68 of 2008.

the piece of legislation will be the *lex fori.*[173] Section 2(10) of the Consumer Protection Act stipulates, "No provision of this Act must be interpreted so as to preclude a consumer from exercising any right afforded in terms of the common law". This gives some respite for the use of other applicable law approaches.[174] However, at face value, the applicable law to liability arising from the use of self-driving vehicles in South Africa is the *lex fori*.

4.3.2 Ghana

The position of law in Ghana is the *lex loci delicti commissi.*[175] However, the court of Ghana will only assume jurisdiction in such a matter when it is actionable under both the law of the place where the delict occurred and the forum.[176] Oppong intimates that the double actionability principle per the Ghanaian case law could best be interpreted as a rule of jurisdiction but not an applicable law rule.[177] The UK, being the cradle of the double actionability rule, has, through legislative effort, abandoned this position.[178] In the recent defamation case of *Ace Anan Ankomah v Kevin Ekow Baidoo Taylor and Anor*,[179] where the defendant, resident in the US, authored a defamatory comment about the Plaintiff, resident in Ghana, via the internet, the High Court applied the real and substantial test as a connecting factor to assume jurisdiction and proceeded to apply Ghanaian law without recourse to the distinction between the rules of jurisdiction and the applicable law.

In the case of *Signal Oil and Gas Company and Anor v Bristow Helicopters Limited and Anor*,[180] the plaintiffs sued the first defendants for negligence in the operation and

[172] Neels "Consumer protection legislation and private international law" 2010 *Obiter* 122 133; Neels and Fredericks (n 20); Scott "Product liability in South Africa" 2014 *TSAR* 223 223; Gower "Product liability: a changing playing field?" 2011 *Obiter* 521 525.

[173] Neels and Fredericks (n 20).

[174] Neels and Fredericks (n 20).

[175] Oppong (n 166) 151; O'Sullivan "Brexit and choice of law in the law of obligations" 2018 *Australian International Law Journal* 77 89.

[176] Oppong (n 166) 151.

[177] Oppong (n 166) 152; Oppong "Private international law in Africa: the past, present, and future" 2007 *American Journal of Comparative Law* 677 684.

[178] Oppong (n 177) 684. UK's Private International Law (Miscellaneous Provisions) Act 1995, section 10 expressly abolishes the double actionability rule.

[179] suit no. GJ/1692/2019 (unreported) judgment was given on 24 February 2020. Since this is a High Court judgment, it has a persuasive and not a binding effect on the superior courts in Ghana.

[180] [1976] 1 G.L.R. 371.

maintenance of the helicopter and the second defendant for negligence in the manufacture of the helicopter which occasioned an accident which resulted in the death of the an employee in Ghana. The court delivered the following judgment:

> "An action should be brought in the country in which the cause of action arose and according to whose law the liability was to be determined. In the instant case the contract on which the claim was based was executed in Italy where the plans were drawn and since the manufacture, maintenance and repair of the helicopter were also carried out outside the Republic and only the accident occurred in Ghana, it followed therefore that the tort was committed outside Ghana and Ghana could not be said to be the most appropriate or convenient venue for the instant action."[181]

Though the *Signal Oil case* was on the issue of jurisdiction, it is submitted that the court reckoned with the fact that "liability was to be determined" based on the law of the place where the delict occurred.

In the wake of the fourth industrial revolution, the law applicable to product liability cases involving a driverless car is unclear due to the two conflicting judgments of courts of coordinate jurisdictions.[182] The legislation on choice of law is bereft of any solution on choice of law but enjoins the court to "adopt, develop and apply such remedies from any system of law (whether Ghanaian or non-Ghanaian) as appear to the court to be efficacious and to meet the requirements of justice, equity and good conscience".[183] It is submitted that with Ghana's selection as host country for the headquarters of the African Continental Free Trade Area (AfCFTA), it is imperative to clarify its private international law rules to reflect current legal global trend.[184]

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[181] at page 373.

[182] Both High Courts in the *Signal Oil case* and the *Ace Anan Ankomah case* have coordinate jurisdiction and therefore there is the need for the Court of Appeal or the Supreme Court of Ghana to pronounce on the actual position of the law for a binding effect.

[183] Section 54 rule 7 of the Courts Act, 1993 (Act 459); Date-Bah "The new Courts Act and choice of law in tort cases" 1971 *Review of Ghana Law* 238 241; Bentsi-Enchill "Choice of law in Ghana since 1960" 1971 *University of Ghana Law Journal* 59 62.

[184] < https://www.reuters.com/article/us-africa-trade/economic-game-changer-african-leaders-launch-free-trade-zone-idUSKCN1U20BX> (10 July 2019).

4.4. Conclusion

As discussed, there are points of convergence and divergence in the operation of the dual private international law systems in the EU. They converge to produce the same result where both the victim and the manufacturer or producer are habitually resident in the same jurisdiction.[185] The points of divergence are in principles of party autonomy,[186] *rattachement accessoire*,[187] and habitual residence of the victim provided it doubles as the place where the product was marketed.[188] Also, under the Hague Products Liability Convention the product has to be "purchased" to warrant grounds for applicable law.[189] Effectively, depending on the EU country which assumes jurisdiction, either Germany or France for instance, the results might be different, thus creating uncertainty.

The applicable law to cross-border delict in America before 1963 was the *lex loci delicti commissi*. The *Babcock case* ushered in the proper law approach as advocated by Morris. The Restatement (Second) of conflict of laws stipulates the law of the place with the most significant relationship. The place of injury, the habitual residence of the parties, among others, are connecting factors that are considered to establish the law of the place with the most significant relationship. Critics are of the view that where there are multiple connecting factors, there is no rule to design priority and thus uncertainty is inevitable.[190]

In the African experience, the position of law in Ghana is the law of the country in which the cause of action arose,[191] whereas in South Africa, the legal position is the law of the country with the "most real or significant" relationship.[192] *Lex loci delicti commissi* is only employed under South African law as a "balancing test" to arrive at the law of the place with the "most

[185] Article 5 of the 1973 Hague Convention on Product Liability and Article 5(1) and 4(2) of the Rome II Regulation.

[186] Article 14 of the Rome II Regulation.

[187] Article 5(2) of the Rome II Regulation.

[188] Article 5(1)(a) of the Rome II Regulation.

[189] Article 5 of the Hague Convention on Product Liability.

[190] Juenger (n 64) 212.

[191] *Signal Oil case*.

[192] *Burchen v Anglin* case.

real or significant" relationship. Section 61(1) of the Consumer Protection Act of South Africa designates the *lex fori* as the law applicable in product liability cases.[193]

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[193] Neels and Fredericks (n 20).

PART 5

Concluding reflections

5.0 Conclusion

5.1 Observations

Self-driving cars come with unique technology.[194] This unique technology calls for specific rules relative to choice of law in product liability.[195] Design defect centres on the fact that an alternative design could have been used to make the product safer and less costly.[196] A manufacturer's failure to give adequate warning on the risk associated with the product is a basis for a warning defect claim.[197] Therefore, choice of law rules specifically tailored to product liability of autonomous vehicles are highly recommended.

5.1.1 Global legislative framework

The applicable laws under the 1973 Hague Convention on Products Liability include the law of the habitual residence of the plaintiff-victim, the law of the habitual residence of the manufacturer and *lex loci delicti commissi*.[198] A key objective under private international law is for the parties to attain certainty and legal predictability. Though some academics hold the view that the Convention is adequate to deal with the disruptive car technology,[199] its existence as an option in the hands of a claimant leaves a lot to be desired in terms of legal predictability.

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5.1.2 EU

Under EU law, there is a dual legislative framework for applicable law to product liability cases: the Rome II Regulation and the 1973 Hague Convention on Products Liability.[200] The Rome II Regulation applies in Member States that have not signed the 1973 Hague

[194] n 13 above.

[195] Oppong (n 166) 153.

[196] Polinsky and Shavell "The uneasy case for product liability" 2010 *Harvard Law Review* 1438 1453.

[197] 1454 *et seq*.

[198] n 92 above.

[199] Graziano (n 23) 49.

[200] n 75 above.

Convention.[201] The Rome II Regulation gives a myriad of options to the plaintiff-victim for his choice of applicable law.[202] There is room for the plaintiff-victim and the person liable to elect the applicable law to regulate their dispute.[203] There is also the option of applying the governing law of the parties' pre-existing contractual relation.[204]

5.1.3 US experience

The US legal framework is the Restatement (Second) of conflict of laws, which hinges on the law of the place with the "most significant relationship".[205] This current legal position is at variance with the *lex loci delicti* rule.[206] An interesting tendency in the US legal system is that the choice of law process includes the examination of the substantive law of the applicable law.[207] There is also the possibility of judges formulating novel rules on product liability with regard to autonomous vehicles.[208]

5.1.4 African experience

Until the *Ace Anan Ankomah case*, the long held Ghanaian position on applicable law designated the "law of the place where the cause action arose".[209] It is uncertain whether this principle will be designated as a choice of law rule in product liability cases.[210] On the other hand, the South African position is the law of the place with the "most real and significant relationship," utilising the *lex loci delicti* as a balancing test to ascertain the applicable law.[211] It follows that the systems of law in Ghana and South Africa will arrive at different conclusions where there is liability arising out of a connected vehicle. While the Ghanaian

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[201] n 76 above.

[202] n 136 above.

[203] Article 14 of Rome II Regulation.

[204] Article 5(2) of Rome II Regulation.

[205] n 136 above.

[206] *Babcock case*.

[207] Symeonides (n 140) 1257.

[208] Brilmayer and Seidell "Jurisdictional realism: where modern theories of choice of law went wrong, and what can be done to fix them" 2019 *University of Chicago Law Review* 2031 2061.

[209] n 182.

[210] Oppong (n 177) 684.

[211] n 170 above.

courts are likely to apply the law of the place where the cause of action arose, the South African courts will apply the law of the place with the "most real and significant relationship".[212] Obviously, these different approaches of private international law rules lead to legal uncertainty.

5.2 Recommendation

The mechanics of driverless vehicles are virtually the same worldwide. Therefore, there is the need to harmonise choice of law rules, which will produce legal certainty and predictability.[213] It is the humble view of this dissertation that choice of law rules in the Rome II Regulation and the 1973 Hague Convention on Products Liability should be synthesised to enhance predictability. The fusion should consider four heads of applicable laws relative to product liability cases in connection with autonomous vehicle. These four heads are party autonomy, *rattachement accessoire,* the law of the habitual residence of the plaintiff-victim and the place of establishment of the manufacturer.

5.2.1 Party autonomy

The advocacy for party autonomy as an underpinning principle of a global legislative instrument for liability arising out of the use of autonomous cars affords parties the leverage to assess their risks and needs. It is suggested that the notion of party autonomy as espoused in the Rome II Regulation should be exported into the global legislative framework to give the free hand to parties to choose their applicable law before or after the delictual event. This will enhance legal certainty and predictability of choice of law outcomes.

5.2.2 *Rattachement accessoire*

The application of this principle can be traced to the mid-20th century with the hope of flexibility.[214] The second sentence of Article 4(3) provides that "A manifestly closer connection with another country might be based in particular on a pre-existing relationship between the parties, such as a contract, that is closely connected with the tort/delict in question". This provision accords courts the power to apply the applicable law of a contract to a suit in delict. It prevents rifts between different applicable laws being applied to a

[212] n 170 above.

[213] Mill "The identities of private international law: lessons from the US and Europe revolutions" 2013 *Duke Journal of Comparative & International Law* 445 449.

[214] Graziano (n 104) 114.

contract and delict emanating from the same transaction.[215] In product liability litigation, where connections of manufacturers and dealers or test drive agencies are involved, this principle effectuates legal certainty and predictability where parties are assured that the governing law to their contract will be applied to the claim in delict.

5.2.3 Habitual residence of the plaintiff-victim

It is recommended that the law of the habitual residence of the plaintiff-victim should be designated as the applicable law where it coincides with the place of injury, or the place where the product is marketed and not actually purchased. This recommendation centres on Article 5(1)(a) of the Rome II Regulation. It follows that a driverless vehicle marketed in a particular jurisdiction will be subject to the law of that country.

5.2.4 Habitual residence of the manufacturer

It is recommended that the law of the place of business or habitual residence of the manufacturer should be a constant at the election of the plaintiff-victim in the event he or she chooses to sue in the jurisdiction of the manufacturer. This will enhance legal certainty as manufacturers of automated vehicles are put on notice that the law of their habitual residence remains a constant in the event of a tort with a foreign element.

5.3 Conclusion

The call for global private international law rules is to ensure legal certainty and predictability in the wake of high mobility of driverless vehicles in the very near future. The core issue is the extent to which the applicable law will be tailored to the needs of driverless vehicle technology. In pursuit of global legislative harmony, this dissertation is of the considered view that an international instrument which synthesises principles embedded in the Rome II Regulation and the 1973 Hague Convention on Products Liability will produce the desired result and ensure certainty. The solution is simple and easily applicable with the four heads of applicable law.

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[215] 115 *et seq*.

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