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Automated and Electric Vehicles Act 2018: An Evaluation in light of Proactive Law and Regulatory Disconnect

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Abstract

The Automated and Electric Vehicles Act 2018 (AEVA 2018) received Royal Assent in July 2018 as the UK's first piece of insurance legislation for Connected and Autonomous Vehicles (CAV). The legislation clearly only regulates vehicles of higher autonomy, that is vehicles which are 'capable of...driving themselves'. Interestingly, these vehicles are currently not available on public roads, meaning that the legislation is predictive of future challenges. Moreover, the legislation is rather broad, with an absence of precise definitions or application: such breadth is clearly to ensure that the legislation remains connected to the technology in the future. The UK has clearly been proactive in its approach; however, concerns are evident around the fact that the UK, in its attempt to legislate ahead of the arrival of the technology, is likely to cause confusion due to the unclear nature of the AEVA 2018's provisions.

Both the issues of regulatory connection and proactive law are distinct areas of academic study which have not, as of yet been explored together in relation to a piece of legislation. The study of these issues in relation to the AEVA 2018 in this paper will further discuss the difficulty in balancing these. This paper will explore some of the insurance and liability difficulties with the current AEVA 2018. It will further uniquely discuss solutions to these challenges taking into account regulatory connection and proactive law.

Key Words

Connected and Autonomous Vehicles, Proactive Law, Regulatory Disconnection, Automated and Electric Vehicles Act, Insurance, Liability.

1. Introduction

The Automated and Electric Vehicles Act 2018 (*AEVA 2018*) [2] received Royal Assent on July 2018. It provided key development to the law of insurance and liability relating to Connected and Autonomous Vehicles (CAVs) [3] in light of significant challenges envisaged by the legislature. The *AEVA 2018* states that CAVs require insurance under a '*single insurance*' policy covering both the driver and the vehicle. Where an accident occurs as a result of the CAV *'driving itself*', [4] the insurer is required to compensate the third party, although the insurer can recover from the CAV manufacturer or person responsible for the accident. [5] This is an attempt to provide the answer to the *'who is liable?*' question, which is discussed prevalently not just in academic literature but

also across the media. [6]

CAVs are seen as disruptive innovation, [7] particularly prone to the so called '*pacing problem',* [8] which, *'like the 'challenge of regulatory connection'...is an attempt to understand the struggle to 'keep up' with technology'.* [9] The legislature has stated its awareness of the difficulties regarding timing for CAVs and will continue to monitor the growth of technology and challenges to be faced. [10] Notably, one of the ways where the *AEVA 2018* has sought to ensure that it is connected to the technology, whilst not hampering innovation, is through ensuring that the legislative framework allows greater flexibility for the legislature to adapt to the technology as it develops. For example through the introduction of vague definitions such as '*automated vehicle*' and '*accident*'. Where the technology develops in a way which is not predicted, there is at least a possibility that the *AEVA 2018* may continue to remain connected. However, recent discussion by academics such as Helena Haapio [11] and most notably the European Council [12] focuses on the need for greater proactivity (the '*proactive law*' approach) and legislative certainty in all areas of law, providing solutions before legal challenges arise and consequently ensuring certainty. Arguably, the introduction of imprecise legislative frameworks conflicts with the proactive law theory [13] through the removal of certainty, which is inevitably detrimental.

This article will analyse the *AEVA 2018*, and how it has addressed some of the insurance and liability challenges relating to CAVs. Both proactive law and regulatory connection will be analysed, along with the *AEVA 2018*'s compatibility with these. Moreover, this article will uniquely provide some solutions to some of the challenges in the *AEVA 2018*, taking into account the need to comply with regulatory connection and proactive law. This article will therefore provide an important contribution to this field of study. Whilst this article is focussed primarily on UK law, it will, in places, provide a comparator to other jurisdictions, particularly some US states, because they have provided a slightly different approach in terms of definitions.

2. The Automated and Electric Vehicles Act 2018

The *AEVA 2018* is an attempt by the legislature to ensure at least some certainty for accident victims, vehicle users, manufacturers, (and potentially those who are in the manufacturing process) and insurers in light of the insurance and liability challenges predicted for CAVs, the most significant being manufacturer or driver liability to victims when a CAV is involved in a collision. For conventional motor vehicles, the *Road Traffic Act 1988* (*RTA 1988*) requires *'users'* of motor vehicles to obtain third party motor insurance to cover their liability to third parties for damage caused. [14] Where the vehicle user is liable to another due to their negligence, the user's insurer is obliged to compensate the third party victim. [15] Where there is no insurance in place for the user, or the vehicle cannot be identified, the Motor Insurers' Bureau (MIB) is in place to compensate the third party. [16]

In relation to CAVs, the manufacturer, or the developer of the automated system could have been liable in accidents concerning level 4 and 5 vehicles [17] directly to the consumer for damage caused by their vehicle malfunction under Section 2 (2) (a) of the *Consumer Protection Act 1987* (*CPA 1987*), [18] as the producer of the defective product. [19] However, there was not an obligation under the*CPA 1987* or the *RTA 1988* for the manufacturer of the entire product or part of the product, to be covered by third party insurance for damage caused by vehicle defect, as '*the UK motor vehicle insurance model is based on insuring the driver of the vehicle, rather than the vehicle itself'.* [20] With the transfer of control from user to the vehicle in later stages of autonomy (levels 4 and 5 of the Society of Automotive Engineer (SAE) levels), the absence of compulsory

insurance cover for the above was problematic. Moreover, there was uncertainty surrounding borderline cases on determining who was liable, for example in relation to where control of the vehicle is shared between the vehicle itself and the user (such as in the handover process), meaning that victims would have been subject to disputes between insurers and manufacturers (and/or component manufacturers of CAVs) as to who was liable for a particular accident. The *AEVA 2018* does not seek to solve disputes between manufacturers and insurers, but rather to ensure that victims are not caught up in these disputes. Product liability insurance was the originally preferred option for the legislature; [21] however, there were numerous incompatibilities between the system and third party insurance. For example, there would be no guarantee that manufacturers could not use defences against victims under the rules of product liability, such as the '*state of the art'* (also known as the development risk) defence. [22] The defence is currently permissible under section 4 (1) (e) of the *CPA 1987*, allowing the manufacturer to avoid compensation if they can prove: *"That the state of scientific and technical knowledge at the relevant time was not such that a producer of products of the same description as the product in question might be expected to have discovered the defect if it had existed in his products while they were under his control".* As noted by the European Court of Justice (ECJ) in *Commission v United Kingdom,* [23] '*in order for the relevant scientific and technical knowledge to be successfully pleaded against the producer, that knowledge must have been accessible at the time when the product in question was put into circulation'* . Moreover, it is important to note that knowledge here is interpreted rather widely including not just the producer of the product, but also in terms of knowledge generally. [24] In *Colin Gee and others v Depuy International Limited, The Depuy Pinnacle Metal on Metal Hip Litigation Another* [25] the Honourable Mrs Justice Andrews stated:

'Although at this stage of the proceedings I am not concerned with the merits of any development risk defence raised by DePuy, s.4(1)(e) is relevant, to the extent that the word "defect" must be interpreted consistently in that section and the earlier sections of the Act in which it appears. Whilst that (development risk) defence should not be interpreted in a manner that would re-introduce the need for proof of fault by the back door, it is equally important that the Act should not be interpreted in a manner which unjustifiably circumscribes the defence, to the detriment of the producer.' [26]

A further challenge in relation to the original approach taken by the CCAV was that, '*claims can only be made against a product liability policy during the first ten years of a product's lifespan'*. [27] Meaning, that any claims after this time period would not be compensated. The eventual solution within the *AEVA 2018* provides that rather than separate product liability insurance covering the manufacturer for vehicle fault, both product and driver are covered by a single insurance policy. The *AEVA 2018* does not comprehensively regulate all insurance challenges relating to CAVs. For example, as noted by the Law Commission (LC) '*It* (*AEVA 2018*) *is not intended to allocate final responsibility for the accident*'. [28] Under the section 5 (1) of the *AEVA 2018,* the insurer can reclaim any compensation paid from, '*any other person liable to the injured party'*. This seemingly has the manufacturer in mind, although does not provide the route to doing so, meaning that recovery is likely to arise from current routes such as product liability. The *AEVA 2018* further expressly states that recovery can also come from the vehicle owner, if software updates are not installed. [29] The *AEVA 2018* therefore does not clarify the process in which the insurer could claim against the responsible party, nor the defences that could be used against the insurer, for example by the manufacturer. [30] This is governed, as noted by the LC, '*either under the 1987 (Consumer Protection) Act, negligence or (where the damage was sustained by a buyer) in contract* '. [31] The LC further note, at paragraph 6.108 that:

'During initial discussions, insurers suggested that different insurance companies would take different approaches. Some may enter into business arrangements with manufacturers, and will therefore be reluctant to become embroiled in litigation with their business partners. Others may take the view that the benefits of litigation outweigh the costs, and that a more litigious approach would enable them to keep premiums low' [32]

This follows from the government response to the '*Pathways to Driverless Cars*' consultation, where the idea for a single insurer system was mooted, it was noted that, '*over time we expect insurers and manufacturers will develop processes to handle most recovery claims quickly and easily'*. [33] Further, the LC in their preliminary consultation were reluctant to interfere in the relationship between the insurer and manufacturer (and others). It notes that litigation would be a '*commercial matter'*. [34] Whereas such a commercial matter can, to some extent, be decided by already existing processes such as through the *CPA 1987* or through negligence, this may be quite difficult. In relation to negligence, whilst a duty of care between a manufacturer and user can usually be found, [35] there are a number of other challenges, surrounding whether the manufacturer acted below the standard of care required. [36] In relation to the *CPA 1987* , the extent to which a product is determined, and consequently whether a software manufacturer can be liable to the insurer is currently uncertain, as whether the *CPA 1987* applies to software is unclear. [37] It seems that the generally under UK law, product does not go as far as to encompass software which is introduced '*over the air'* but may cover software that is introduced in hardcopy form, for example if provided on a disk. [38] Nevertheless, even if software can fall within product, the insurer would still be required to prove that the defect in the software caused the accident. They would be required to show under section 3 (1) *CPA 198* that, '*there is a defect in a product'* this is determined if, '*the safety of the product is not such as persons generally are entitled to expect'*. [39] The '*legitimate expectations*' test is therefore used to determine this, and according to section 3 (2) *CPA 1987*, the following are taken into account:

'a) the manner in which, and purposes for which, the product has been marketed, its get-up, the use of any mark in relation to the product and any instructions for, or warnings with respect to, doing or refraining from doing anything with or in relation to the product;(b) what might reasonably be expected to be done with or in relation to the product; and (c) the time when the product was supplied by its producer to another'

This test seems to link well with the standard of safety expected of CAVs, which will be discussed below. Bryant Walker Smith notes that an autonomous vehicle would have behaved unreasonably if either, *'(a) a human driver or (b) a comparable automated driving system could have done better under the same circumstances'*. [40] The first of these, he notes, ' *seems to fit most naturally with the consumer expectations test still used by some jurisdictions to determine defect under strict product liability* '. [41] It is clear that consumer expectations is not about absolute safety. [42] Moreover as noted in a paper pre- *AEVA 2018* in relation to whether a consumer can claim for a defect, particularly in relation to software: *'Proving that there was a defect in the software requires an in-depth technological understanding of the functioning and the malfunctioning thereof. It is not likely that most victims have easy access to this kind of knowledge. Proving defects will thus be problematic'.* [43] It is submitted that as insurers are likely to have a closer relationship with manufacturers and a significant awareness of the workings of the technology, there will be less of a challenge in determining software defects. [44] Nevertheless, the LC commented upon the '*insurers' desire for greater certainty, so that they can price insurance and avoid lengthy or costly litigation'*. [45]

2.1 Use of Foresight in the AEVA 2018

The *AEVA 2018* uses foresight in its approach, predicting challenges which will be faced by CAVs with levels 4 and 5 automation, something which is not available publicly as of yet. The UK government has promised that fully autonomous CAVs will be on the road by 2021. [46] The *AEVA 2018* is seen as a framework which can be developed and moulded, depending on the technologies' development. The DfT recognise this through its suggested rolling programme of regulatory reviews, which, '*will help to facilitate the introduction of innovative new technologies in a safe, agile and evidence-based manner for the benefit of UK consumers and business*'. [47] This is supported by both insurers and manufacturers. [48] However, regulatory flexibility through the introduction of a framework has a potential significant downside in providing law which is uncertain, imprecise, unclear, and consequently less user friendly. This, it is submitted, particularly for an area of law which is targeted towards victim protection, could make it difficult for consumers and victims to know where they stand in some instances. The predecessor of CAV insurance, compulsory third party motor insurance has a difficult past, where the absence of clarity for third party victims was heavily criticised. [49]

2.2 Proactive Law

Due to the approach noted above, it is evident that the legislature is attempting to be proactive. This is a counter to what many see as the law being too slow to react when legislative challenges occur, and not just in technology. [50] Over the previous two decades, Scandinavian and US academics, followed later by the European Economic and Social Committee, [51] have been calling for legislatures to ensure greater proactivity towards regulatory challenges. The proactive law theory was introduced by Finnish academic Helena Haapio, who argued that business people needed '*vaccinating*' against the '*disease*' of legal uncertainty. [52] Haapio's approach was more centred on contract law and business, rather than technology law. This was later applied to a wider range of considerations through the European Council, who stated:

"For too long, the emphasis in the legal field has been on the past. Legislators and the judiciary have responded to deficits, disputes, missed deadlines and breaches, seeking to resolve and remedy. Disputes, proceedings, and remedies to force compliance cost too much. That cost cannot be measured in terms of money alone" [53]

As noted above, regulating too late and attempting to remedy when legal challenges arise is one of the key criticisms with law, this is something that proactive law seeks to address by anticipating future challenges. Of course, the focus on certainty within proactive law therefore means that the theory goes much further than this statement, to include not just '*careful planning*' but also, '*the active and effective participation...of stakeholders before and during the drafting of any proposals...with continuous dialogue*' . [54] This is arguably met by the *AEVA 2018*, with the CCAV constantly in dialogue with a number of stakeholders from mobility, legal practitioners, the insurance industry, and manufacturers. [55] Although as will be shown below, the Law Commission released their Preliminary Consultation Paper [56] with certain issues arising from the *AEVA 2018* just a few months after it passed Royal Assent, and have further published responses to that Paper. [57] Furthermore and possibly most importantly, proactive law is based on certainty, not just for the courts and legislature, but also for stakeholders, as noted by Berger Walliser, with, '*other actors in society need to have at least a basic understanding of the legal "mines"* '. [58] It is therefore important in an *AEVA 2018* context, that victims and consumers need to be aware of at least the basic extent of the provisions and challenges faced by the introduction of legislative

provisions, and further that legal practitioners, insurers and manufacturers need to be aware, to a much greater extent, of their rights and responsibilities. The absence of certainty can be detrimental to innovation and the uptake of technology. CAVs are undoubtedly already in a very uncertain market, and as noted by Blind *et al* , *'Firms operating in a market with high uncertainty may be confronted by a highly heterogeneous technical landscape and the unpredictable consumer behaviour'.* [59]

In a non-technological, historical context, a pertinent example of how the absence of proactivity can have a negative impact can be found in the history of conventional motor insurance law. Motor vehicles were introduced on UK roads in 1895, [60] it was not until 35 years later that the legislature addressed insurance challenges arising from their introduction. [61] The legislation, [62] when introduced, was also poorly thought through and continued to leave victims without compensation due to significant loopholes for insurers to use. [63] For example, section 38 of the *Road Traffic Act 1930* only exempted certain policy terms in the drivers' policy from being used by the insurer against the third party victim, [64] meaning that the insurer was able to utilise policy terms against the third party and deprive them of compensation. Section 12 of the *Road Traffic Act 1934* reduced the use of policy terms further [65] although did not completely abolish them. The significant problem then, was that unlike in the current situation, there was no compensation fund in relation to accidents caused by uninsured or untraced drivers, therefore, where a policy term was used, third party victims were left without any form of redress. Victims often found themselves in positions where they did not know whether they could claim, or were excluded due to the unclear and imprecise nature of the legislation. [66] Once the legislature attempted to remedy the loopholes, the absence of further proactivity left the law behind, with gaps in protection for victims of uninsured or untraced drivers. It took 16 years for the MIB to be introduced, where third parties were mostly compensated. Conventional vehicle insurance was therefore reactive to challenges, causing injustice.

The proactive law theory, however, has not developed significantly in relation to technology and artificial intelligence. Nevertheless, it is notable that both academics and practitioners use the word '*proactive*' in pointing towards what the law on artificial intelligence should be. [67] For example, Baker-McKenzie argued in evidence cited by the House of Lords Artificial Intelligence Committee, that there must be a, '*proactive, principles-led intervention, based on a sound understanding of the issues and technology, careful consideration and planning'*. [68] It is clear, overall, that proactive law is about the provision of comprehensible solutions to challenges, rather than being reactive to problems that have already occurred. The ECSC, for example, uses the phrase ' *anticipation of solutions rather than problems'.* [69] However, whilst proactive law is future based, it does not provide definite timings as to when legislation should be introduced in relation to the technology. It is therefore important to explore this.

3. Regulatory Disconnection and the 'when question'

3.1 The 'when question'

The so called '*when question'* is a significant issue in terms of technology law. The so called Collingridge dilemma, introduced by David Collingridge in 1980 provides, [70] as noted by Butenko:

' On the one hand, in the early stages of technological development, there is insufficient information regarding potential harms and benefits, but on the other hand, in later stages it can be

very difficult, if not impossible, to alter the status quo once the technology has matured, diffusion has taken place and it has become an innovation ' [71]

Moreover,regulating too early, whilst seen as positive, has significant potential to cause regulatory disconnection further down the line once the technology is introduced. As noted in Leenes et al, '*controlling a technology is difficult in its early stages because not enough is known of its possible or probable effects'*, [72] the so-called '*uncertainty paradox'*. [73] Regulatory disconnection, '*could arise when innovation in the market develops in a faster tempo or differently than envisaged compared to respective regulation'*. [74] Whilst regulatory disconnection is often seen negatively, it is not necessarily problematic, although in certain cases it could cause regulatory failure, [75] and therefore should be eliminated where possible. [76] Moreover, it is not always straightforward to make changes to legislation quick enough to ensure that connection is maintained, therefore there is a need for a degree of ingenuity to maintain connection (this will be discussed later in this article). Further, premature regulation of technology which is continuously developing, has the potential to result in poorly aligned regulations that inappropriately ' *lock in'* inferior technological choices. [77] In addition, as noted by Fong, by acting too precipitously, market mechanisms, technological solutions, or other extra-legal responses that may have had greater effectiveness may not have an opportunity to develop. [78] Of course, it is difficult to know exactly alternative solutions that could have been introduced by the market and technologists Manufacturers have suggested at times that they would be willing to compensate victims of CAVs, even where there was no legislative regime compelling them to do so comprehensively. [79] However, Butenko and Larouche note that, ' *regulation influences the incentives of firms and individuals to dedicate resources to activities, such as research and development or market surveys, which can lead to socially beneficial innovation'* . [80]

The failure to regulate, or for regulation to keep up with technology, can be detrimental to innovation due to the inevitable disconnection between the law and technological development (this will be discussed in more depth below). Regulation could eventually become disconnected, and real challenges which require legislation, could be without adequate remedy.

3.2 The Acceleration of Technology and Struggle to Keep Up

In his book *Rights, Regulation, and the Technological Revolution* , Professor Brownsword notes, that, '*the pace of technological development, already too fast for the law, is accelerating'*, [81] with the inevitable result that '*technology is capable of leaving the law behind'*. [82] The law is already behind in some areas of technology, for example, as noted by Leenes et al, [83] the use of surgical robots is gaining ground across the world as a method of performing complex surgical tasks. There is, however, only limited footing in regulation in relation to this, particularly at EU level and in the US, whereby surgeons are not required to hold any specific qualifications for the use of these robots, despite being significantly different than traditional surgery. [84]

Brownsword's statement is very pertinent for the pace of development in terms of CAVs. However, there is limited evidence of regulatory disconnection in relation to CAVs currently, with regulation generally managing to maintain pace, due to the UK legislatures' proactive approach. [85] The UK is attempting to position itself to ensure that regulatory barriers are not in the way of CAV development, something that it sees as an area of important growth potential, [86] particularly post Brexit. [87] Nevertheless, much of the UK's regulatory development has been through soft law and codes. For example, the Code for Testing of CAVs was first introduced in September 2015 [88] and then updated in February 2019. [89] Additionally, the UK Government issued the'key

principles for cyber security for connected and automated vehicles' [90] in August 2017, these are guidelines aimed at manufacturers in order to keep vehicles secure against cyber threats. The Law Commission has also been tasked with investigating challenges and solutions to a number of legal issues, [91] with final recommendations due at the beginning of 2021. [92] Whilst regulation is arguably therefore currently keeping up with CAVs, this area of technology is particularly vulnerable to regulatory disconnection due to the disruptive nature of the technology. As noted above, whilst regulatory disconnection is not in itself problematic, where it leads to potential regulatory failure this could cause significant challenges and should be eliminated where it is possible.

The *AEVA 2018* has taken the first step in regulating insurance and some core liability issues before the technology has actually arisen, therefore attempting to provide some certainty. Whilst the UK has a head start in preparing for the introduction of fully automated CAVs, this does not remove the potential for regulatory disconnection to occur later. The legislature undoubtedly needs to ensure continued proactivity in maintaining regulatory connection and dealing with challenges that are being faced. CAVs are perhaps even more prone to the negative effect of regulatory disconnection due to the already wary reaction of consumers to these vehicles. For example, a University of Michigan study into public perception of CAVs found that whilst there was some positivity attached to the introduction, the respondents were nevertheless wary in terms of cyber security with further concern in relation to whether these vehicles were safer than human drivers. [93] Public influence is likely to have a significant say as to how this technology is going to continue to develop, Walker Smith notes that there is potential, unless CAVs are at least safer than conventional vehicles, that consumers will not adopt them. [94]

4. Regulatory Connection and Certainty in the *AEVA 2018*

This part of the article focusses on the *AEVA 2018* in light of regulatory connection and certainty (certainty is, as noted above, a focus of proactive law). As noted by Brownsword and Somsen, '*The more the law strives to be precise and comprehensive, the sooner it is likely to be disconnected from rapidly changing technologies that are its regulatory targets* '. [95] Technology neutral terms and wider regulatory drafting are likely to have the flexibility to cater for the technology as it continues to develop, [96] this is the so called '*vertical approach to regulatory disconnection*'. [97] As noted by Butenko and Larouche, '*Technological neutrality can be interpreted as a duty incumbent upon the legislature or regulatory authority to try to enact laws and regulation that are sustainable over time, instead of requiring review at frequent intervals*'. [98] Wider terms will allow greater manoeuverbility for the courts in deciding disputes, whilst allowing manufacturers to develop products with some flexibility. Introducing regulation with narrow terms, and therefore less manoeuvrability, could mean that the law eventually became disconnected with the technology and would therefore be of limited use once the technology and its use develop further, eventually requiring replacement or causing unjust results. As noted by Brownsword in terms of '*descriptive disconnection*', *'the problem is that the covering descriptions employed by the regulation no longer correspond to the technology or to the various technology-related practices'.* [99]

The difficulty is, however, that whilst flexible, a broad regulatory framework can also cause uncertainty. Brownsword noted similar when stating that the law could become less '*calculable and consistent*'. [100] In a CAV context, this can cause uncertainty for manufacturers and accident victims, and is also contrary to one of the core principles of proactive law, whereby laws are easily

accessible to individuals [101] and allow achievable results. [102] There is, therefore a potential conflict between ensuring that the law is connected adequately to technology and also ensuring that it meets its target audiences' needs. [103]

The purpose of the *AEVA 2018* is the provision, to an extent, of certainty, however, it also provides significant flexibility, with a number of undefined core terms within the *AEVA 2018*, particularly in relation to the Act's scope, which in itself has potential to cause uncertainty. Also, as noted in detail above, the *AEVA 2018*, whilst providing some certainty for third party victims, has not significantly dealt with issues involving insurer to manufacturer claims which will be left to other areas of law such as product liability or through the law of negligence. Moreover the *AEVA 2018* is currently one of the subjects of a consultation by the Law Commission (LC), with certain areas being consulted upon, despite the *AEVA 2018* passing Royal Assent just four months prior. Therefore the *AEVA 2018* is at risk of '*perversity*', a term noted by Butenko as concerning, '*regulatory interventions which achieve the exact opposite of their intended outcomes*'. [104] The question arises as to whether there is an actual need for the legislature to have such an approach, particularly at such an early stage, to then only supplement the legislation later on and also require a further in depth examination of some of its elements by the LC. Of course, this does not disregard the fact that through continued proactivity in the future, connection could be maintained and therefore could ensure maintained regulatory connection. Nevertheless, regulatory disconnection in this context would fall under Brownsword's definition of, '*prescriptive disconnection'* that *'the regulation no longer correspond to the technology or to the various technology-related practices that are intended targets for the regulation'*. [105] It is important to now examine some of the gaps (in addition to what was discussed previously with regards to manufacturer and insurer claims) in the current *AEVA 2018* to then see how these gaps could be filled later.

4.1 Definition of Terminology

There are several terms in the *AEVA 2018* which have not been defined, although the author notes one particular term which has the potential to cause significant uncertainty, therefore going against proactive law at the expense of third party victims who would not know whether they could claim. Moreover, there could also be questions surrounding whether the term could actually become prone to regulatory disconnect. The term '*accident*' is not defined anywhere within the *AEVA 2018*, despite being utilised in a number of core provisions. [106] Importantly, the term is drafted in technology neutral terms, which means that it has provided some scope for later interpretation. However, the absence of a definition within the *AEVA 2018*, due to recent judgements relating to the definition of the term in relation to conventional motor insurance, means that the interpretation of this term could be significant in a CAV context. The majority in the Court of Appeal *obiter* in *Charlton v Fisher* (*Charlton*), [107] held that accident should be interpreted to include '*deliberately caused damage'* , particularly in relation to third party insurance. [108] Without such an interpretation, there would be no recovery available for third party victims who are injured as result of purposeful damage from conventional vehicles. Whether the term will be interpreted likewise for CAVs will be dependent on whether future courts follow the *obiter* in *Charlton*. A wider interpretation of the term accident in a CAV context would increase the potential for coverage where the vehicle has been hacked, substantially widening the potential liability for insurers and manufacturers. This may be unsatisfactory for insurers' and manufacturers' business models due to the potential for valuable claims, although would allow victims to gain compensation for injuries. [109] This area is therefore prone to '*descriptive disconnection'* which as

noted by Brownsword is where '*new technology raises questions of principle or policy that are not clearly settled by the regulatory scheme'.* [110] A potential solution to this will be discussed later in this article.

One of the areas whereby the *AEVA 2018* has not, as of yet, provided clarification, is around a comprehensive definition of an '*automated vehicle'* . Of course as noted above, highly automated vehicles are not currently available publicly and therefore the definition is likely to be clarified later. [111] Nevertheless, the current definition leaves a significant number of potential interpretive difficulties. Section 1 (1) of the *AEVA 2018* states:

"The Secretary of State must prepare, and keep up to date, a list of all motor vehicles that—

(a) are in the Secretary of State's opinion designed or adapted to be capable, in at least some circumstances or situations, of safely driving themselves, and

(b) may lawfully be used when driving themselves, in at least some circumstances or situations, on roads or other public places in Great Britain."

The *AEVA 2018* is notable in its omission of the SAE [112] levels in referring to the definition of automated vehicles. Instead, it utilises the term *'capable of...safely driving themselves'.* The rationale behind the non-utilisation of SAE levels is that whilst the categorisation of vehicles is potentially helpful in explaining the differences between vehicles of higher and lower automation, vehicles are unlikely to fall precisely within a particular level. Due to the introduction of the term '*capable*', the *AEVA 2018* provision clearly does not eliminate CAVs which do not have the capability all of the time. For example, a CAV could safely drive itself on a motorway, but not on more complex country roads. [113] Nevertheless, the non-encompassing of vehicles which are of lower automation, i.e. where the vehicle is able to drive itself but will be required to be monitored is difficult. It is clear that the rationale behind this is to distinguish automated vehicle technology (AVT) and Advanced Driver Assistance Systems (ADAS), the former does not require the user to be '*in the loop'* whereas the later does require this. [114] The CCAV noted that the Association of British Insurers' and Thatcham Research, along with '*a large number of other insurers and law firms*' wanted to, '*ensure that motorists are clear about what their responsibilities are when using this technology, and that they must retain full attention when using any driver assistance systems, however advanced*'. [115] This is of clear concern for the insurance industry, [116] and policy makers. [117] The terminology is, at least partly, clarified by section 8 *AEVA 2018* which states that a vehicle is driving itself, if it is not being' *monitored*' or '*controlled*' by an individual. This, however, does not completely clarify the issue, as neither of these terms are subject to a definition, nor are they qualified in any way, such as whether this can be *'remote'* control or monitoring. This issue, it is submitted, is particularly prone to regulatory disconnection.

Most significantly, the term *'safely*' is again not defined within this section and has the potential for significant confusion. It is possible here that this could be left open to normative disconnection. [118] The term undoubtedly causes challenges as to the standard of safety expected and, '*regulators have yet to agree on an acceptable level of safety or define legitimate methods of determining the safety of AVs'*. [119] A proposal was made in the House of Lords' which would have provided some clarification, noting that safety would be equivalent to it being '*capable of driving itself in a manner unlikely to cause damage' as well as being 'protected from cyber risks'*. [120] Such a proposal, it is submitted, would, at least to some extent, clarify such a term. However, there would be number of issues remaining, for example, the use of the term '*unlikely*' is unfortunate and does not, it is submitted, determine a particularly high standard of safety. Moreover, it does not take into account that even the CAV may not be able to prevent more accidents to meet the

unlikely test, but may make them less severe. [121] Consequently, this shows that a rush to act proactively with the aim of providing certainty, without necessarily considering some of the wider consequences, does not necessarily connote good legislation. Proactive law is not about the provision of certainty alone, it is also around ensuring that there is adequate consultation. It is, however, positive that such a rushed recommendation was not taken forward in the *AEVA 2018*.

In terms of safety, Maurice Schellekens notes that '*the public at large is entitled to expect the automated car to be as safe as a human driven car*'. [122] Schellekens notes that this a '*minimum standard*' as not meeting this would not be acceptable to the European public. [123] Similarly, as was already noted above in relation to public perception, Bryant Walker-Smith stated that, '*After all, a consumer is likely to expect that her automated driving system will perform at least as well as she would*' [124] in any given situation. In determining safety above this level there are two potential formulations, either that, *'the automated car should statistically be safer than human drivers*', [125] or that it should be '*safer than the best human driver'.* [126] The later standard does not necessarily mean that no accidents happen but rather that '*best human driver could not have avoided it either*'. [127] The answer as to which, if either, of these approaches will be adopted is unfortunately unclear within the *AEVA 2018* , and much of this will, it is submitted, be a balance for the legislature. The difficulty is that if the legislature in the UK adopt a too high standard then it will mean less CAVs coming to market, as manufacturers have to ensure that their vehicles meet the required threshold, this could mean a delay in technology, which whilst it is safer than current human drivers, would not be deemed safe enough. [128] The LC noted that, *'There is no simple definition of when a vehicle can be said to drive itself safely. Instead, decisions will be made on a case by- case basis*'. [129] Such a '*case by case'* basis, it is submitted, would go against proactive law, unless clear criteria is used. There are some options in terms of the adoption of safety standards already in UK law, although these are general standards in terms of products. For example, there is a definition under section 19 (1) (c) *CPA 1987* which states that, '"*safe", in relation to any goods, means such that there is no risk, or no risk apart from one reduced to a minimum, that any of the following will (whether immediately or after a definite or indefinite period) cause the death of, or any personal injury to, any person whatsoever'.* This is a rather vague definition, particularly as '*reduced to a minimum'* here is not defined nor explained.

Alternatively, regulation 2 of the *General Product Safety Regulations 2005* could be a starting point, it noting that only 'minimum risks' are acceptable. The Regulation further expands on safety with the following list of factors which are relevant:

"(a) the characteristics of the product, including its composition and...where applicable, instructions for installation and maintenance,

(b) the effect of the product on other products, where it is reasonably foreseeable that it will be used with other products,

(c) the presentation of the product, the labelling, any warnings and instructions for its use and disposal and any other indication or information regarding the product, and

(d) the categories of consumers at risk when using the product, in particular children and the elderly"

With the potential for both serious personal injury and severe property damage for those who are particularly at risk in relation to the use of CAVs, the application of these factors would mean a high standard of safety is required. This, however, does not answer issues in terms of higher levels of safety, and whether the vehicle would need to be of a standard equating to current driving

standards, standards of perfection, or somewhere in between. Adding greater complexity is that the fulfilment of CAV criteria within the *AEVA 2018* is based on the Secretary of State's opinion, and without any guidelines within the *AEVA 2018* as to how the Secretary of State will come to that opinion. For example, will the Secretary of State introduce certain criteria which will need to be met for the CAV to be deemed at the level of safety as discussed above? Importantly Bryant Walker Smith notes a particular issue with determining safety:

'Just because an automated system should be safer than humans does not necessarily mean that it will be safer; surprises abound on roads as well as in software. No company has logged the hundreds of millions of miles that might provide a statistical comparison of actual crash and injury rates' [130]

This is an important point, data is currently not available to determine the safety rates in every single situation, and there may be further issues which may need to be explored before a vehicle is deemed safe. For example, in relation to cyber security, Walker Smith notes '*systemic risks—of which cyberattacks are the most prominent—could affect this overall safety performance if they are realized on a massive scale'* . [131] Moreover, there is nothing within the *AEVA 2018* to say that the Secretary of State must publish the rationale or criteria around their decision. Members of the House of Commons Automated and Electric Vehicles Bill Committee suggested reform to ensure that the Secretary of State must consult on, and publish the criteria, that they will use to determine whether a vehicle is capable of safely driving itself, [132] and that the Secretary of State could not change the criteria without consulting interested parties such as manufacturers and insurers. [133] The term '*in some circumstances or situations'* used in section 2 (1) *AEVA 2018* further widens the definition, and it is submitted makes it less likely for regulatory disconnection to occur, as even if vehicles are not developed to become significantly automated, which is currently envisaged, the *AEVA 2018* would continue to apply to them as long as they fulfil this.

Interestingly, the approach taken by many states in the US is varied, with some more complex definitions than others. The Washington D.C. *Autonomous Vehicles Act 2012* (Washington DC Act) defines an *'Automated Vehicle'* as capable of' *navigating district roadways and interpreting traffic-control devices without a driver actively operating any of the vehicles control systems'* . [134] This Act is for vehicles not of levels 4 or 5 as it requires a, '*driver seated in the control seat of the vehicle...who shall be prepared to take control of the autonomous vehicle'.* [135] This means that the difficulty of determining safety is not so significant, as the vehicles will have backup if it fails. Nevertheless, it shows a slightly more focussed definition than the *AEVA 2018.* Whilst the *Washington DC Act* does not link the definition of automated vehicle to SAE levels, the Connecticut Act links itself to SAE levels 4 and 5, although providing much less detail. The *Connecticut Act* goes further in separately defining an '*Automated Driving System'*, as, '*hardware and software that are collectively capable of performing the entire dynamic driving task on a sustained basis, regardless of whether the automated driving system is limited to a specific operational design domain*'. [136] With regards to the issue of safety, the Connecticut Act states that the operator or autonomous vehicle tester will:

'*comply with standards established by the National Highway Traffic Safety Administration regarding fully autonomous vehicles; and (C) satisfy any other requirement as determined by the secretary, in consultation with the Commissioners of Motor Vehicles, Transportation and Emergency Services and Public Protection, as necessary to ensure the safe operation of such fully autonomous vehicle'.* [137]

The NHTSA has already introduced '*voluntary guidance'* in relation to the safety of automated

driving systems, [138] this guidance does not lay down specific performance criteria and data, but rather broader considerations and principles. Whilst such safety principles are deemed voluntary, the enshrining of these in legislation would mean that they are legally binding and principles to follow. Interestingly, and as noted previously in this article, the UK already has principles in terms of cyber security [139] as well as testing of autonomous vehicles, [140] these are not legally binding although are material for the court to decide in determining liability. Following the Connecticut approach would require the UK to introduce further guidance in relation to the safety of CAVs or use an external framework which would then be enacted upon to make compulsory. Moreover, it is submitted that the legislative element of the Connecticut Act would be prone to regulatory disconnection as the terms used are not technology neutral. However, the use of soft law, as will be shown later, could be beneficial for the UK in determining safety.

It is notable, however, that the US system relating to the regulation of CAVs is fragmented rather than federalised. This is similar to the regulatory regime in Australia which, again is fragmented. [141] Bryant Walker Smith, noted the challenge this brings in the US when defining even the most basic of terms. For example '*driver*' in a CAV context has a number of different potential definitions, [142] this is similar for '*operator*', again providing definitions of different ranges and detail. [143] This consequently provides the potential for States to have varying degrees of certainty, and potential future regulatory disconnection. It further provides significant potential for intra-US competition between states, competing to attract CAV technology and manufacturers to their roads. [144]

The priority in most US states is to provide the necessary certainty in defining CAVs today, without significant concern for regulatory connection later. The difficulty is that such certainty is at least partially negated through the fact that each US state has different definitions, which therefore potentially undermines certainty for those travelling across border. Similar challenges for definitions could occur within the UK and the European Union. As well as the land border between the UK and Ireland, vehicles are able to travel to the EU mainland. The UK, through its broad definition of CAVs, has the added benefit of having a greater chance of regulatory alignment with the EU later, due to the potential manoeuvrability within the definition and its wider coverage. [145] Interestingly, in the US, academics such as Diehl and Thue argue for a more precise definition of CAVs in the US, in order to prevent, *'unintentional restrictions on existing, semi-autonomous technology*'. [146] This was particularly in relation to the Nevada definition of an automated vehicle involving, '*a motor vehicle that uses artificial intelligence, sensors, and global positioning system coordinates to drive itself without the active intervention of a human operator'.* [147] The Nevada regulation was later amended due to the unintentional inclusion of vehicles which have park assist and cruise control within the definition. This could be similar for the *AEVA 2018* definition of automated vehicle which seemingly does not restrict self-parking vehicles, although it is difficult to know whether this is intentional. The definition therefore, does not provide the necessary clarity as of yet and is rather wide, inevitably with the foresight that it will be clarified in the future when the technology is further developed. Such a definition, it is submitted, does not completely comply with proactive law and is not connected with the technology, although a continued proactive approach could ensure that the technology and legislation is connected.

4.2 Certainty Challenges Found by the Law Commission

The LC announced a wide terms of reference to examine, *inter alia* , liability and insurance challenges related to CAVs. The LC noted, however, that its aim was not to reopen significant discussion on the premise behind the *AEVA 2018* , but rather, to examine some of the detail within.

[148] This is an interesting approach and one which, it is submitted, is confounding in terms of legislative process. The LC's role is around '*reform*' [149] and often provides reform to areas where there is a historic need for change, [150] with the result often that the LC recommendations are picked up and legislated upon at a later date. However in relation to CAVs and the *AEVA 2018,* it is evident that this is the other way around, i.e. the legislation being introduced first, with the LC examining required amendment. This seems particularly unconventional and leaves the impression that the legislation was rushed through without consideration or legislative scrutiny.

In relation to contributory negligence, section 3 (1) of the *AEVA 2018* provides the insurer with the right of recovery against the injured party where, *'b) the accident, or the damage resulting from it, was to any extent caused by the injured party*'. Moreover section 6 (3) of the *AEVA 2018* notes, '*For the purposes of section 3(1), the Law Reform (Contributory Negligence) Act 1945...have effect as if the behaviour of the automated vehicle were the fault of the person made liable for the damage by section 2 of this Act*'. The LC noted issues surrounding the interaction between the *AEVA 2018* provisions as noted above, alongside the *AEVA 2018* 's strict liability approach, and the *Law Reform (Contributory Negligence) Act 1945*. The LC is concerned that the requirement for the court to '*imagine*' [151] that the accident was the fault of the vehicle user rather than the vehicle itself, essentially moving away from fact based decision making to looking at hypothetical scenarios. The LC noted that *'The concern is that section 3(1) could be used to apply standards of human fault to quite different claims involving automated vehicles*'. [152] This is a fair point to make by the LC as the technology and human decision making are quite different things. A link here can be made to previous discussion in this article around the definition of safety, with the questions surrounding the comparator between the standards of safety in a CAV compared to the standards of conventional vehicles, and to what extent they should match. The LC wanted recommendations as to whether contributory negligence in the *AEVA 2018* should be clarified. [153] As noted by the LC, responses to this question in the Consultation *'were split*', [154] however, the LC noted that, '*there was no pressing need for reform*'. [155] It was noted by ABI and Thatcham that, '*While the wording may not be ideal, the intent is reasonably clear and the view across the motor insurance market is that the provisions will work in practice'.* [156] It seems therefore that despite reform being unlikely at the current time, it would not be surprising if this was revisited later. Such an issue, as will be noted below, is not comparatively hugely significant for accident victims, as the number of claims with which this effects is likely to be minimal, compared to issues involving the definition of automated vehicles which goes to the very heart of the legislation.

The second issue noted by the LC was causation and whether this should be left to the courts to determine. Causation is contained within the *AEVA 2018* with the requirement that the accident is '*caused by*' the automated vehicle (section 2 (1)). Moreover, section 8 (3) notes '*an accident includes a reference to two or more causally related accidents; (b) a reference to an accident caused by an automated vehicle includes a reference to an accident that is partly caused by an automated vehicle'*. Causation usually relates to factual causation which is interpreted by the courts, and is something that is used in conventional motor insurance in the *RTA 1988* through the terminology *'caused by or arising out of use of'.* [157] However the *AEVA 2018* is much more limiting that *RTA 1988* as it does not use the term '*arising out of the use of'* and instead notes that the accident must be ' *caused by* 'a vehicle *'whilst driving itself'.* [158] The use of '*caused by'* in the *AEVA 2018* connotes traditional causation principles, i.e. the '*but for'* [159] test, along with whether there was an intervening act. [160] The LC noted that '*the courts have long experience of dealing with causation issues to provide fair, common-sense outcomes'* , [161] this, however is not always evident, and the courts have sometimes found difficulty in their approach to causation

issues, particularly in areas where policy meets principle, leading to what some call '*the chaos theory*'. [162] The provision of a case by case basis in this area is one which could lead to significant uncertainty, particularly as there are issues, as noted by the LC, concerning causation and the interaction of a strict liability system within the *AEVA 2018*. The LC note a particular scenario [163] whereby an automated vehicle is shunted by a vehicle from behind into a vehicle in front, whilst the automated vehicle may not be deemed '*at fault*' for the accident, its presence alone and the fact that collides into another vehicle could mean that causation is met, meaning that the insurer would have to compensate under section 2 (1) of the *AEVA 2018* and recover against the driver's insurer of the vehicle behind, although this is not completely clear cut. [164] Whilst such an issue may be relatively simple for the courts to solve, the greater difficulty could lie involving scenarios which are not currently predictable and would require the courts to go further than interpreting the statute, by actively filling the gaps. The responses to the LC were, it seems, varied, with some proponents of a case based system, and others who favoured some further clarification. [165] This is undoubtedly challenging, as it would be difficult to determine all scenarios in terms of causation, however, there will also be significant uncertainty if the courts are required to deal with all causation issues. [166] The LC noted, however, that causation '*is not a priority at present*'. [167] The LC are in the challenging situation of examining solutions to a challenge of which the full extent of is not yet known, with the need for greater certainty, particularly for the insurance industry. [168] This could be an area which is prone to regulatory disconnection as the legislation may not be compatible with some of the causation challenges. Of course, the difficulty here in maintaining connection is around the absence of knowledge relating to some of the challenges.

However, the LC could provide solutions which whilst providing clarification, could prove burdensome for the insurance industry, albeit in the context of the purpose shown from the legislature in the introduction of the *AEVA 2018,* through the creation of a strict liability system. For example, the LC noted a situation where a collision between the automated vehicle and the victim is caused by a third party (i.e. a cyclist with which the vehicle tries to get around). [169] Here the vehicle is not at fault yet the insurer will be deemed completely liable and unable to recover from the manufacturer. Such an instance would mean that insurers are having to burden the cost of something outside of their control.

4.3 Conflicts between Innovation and the Heightened Regulatory Burden

After discussion of the above challenges relating to the *AEVA 2018*, it is notable that there is a conflict in providing the additional certainty through the provision of a heightened regulatory burden (HRB), whilst ensuring that innovation is not harmed. Of course, law makers are also '*under pressure'* to apply the ' *precautionary principle as a means for developing preventive measures against new potential threats'*. [170] However, as noted by the European Council, *'regulation can simultaneously constrain and drive innovation, whilst a lack of regulation may lead to uncertainty'*. [171]

One can link the previous discussion in relation to safety, if the *AEVA 2018* provides a strict definition of safety, then innovation could suffer. As noted above in this chapter, if the definition of safety provides too much of a regulatory burden then manufacturers would need to delay the introduction of technology to ensure that its technology meets that threshold. Whilst this, as noted above could make the technology safer, it may delay the introduction of technology which is nevertheless safer than conventional vehicles. [172] Of course, significant regulation can drive innovation through the certainty it provides to manufacturers as to how the technology will be

regulated, and certainty as to the barriers that will be faced, essentially allowing manufacturers to plan the cost of regulation. However, as noted by Blind et al in relation to '*highly uncertain markets*', *'In such markets ,information asymmetries that increase the probability of a potential misfit between regulations or formal standards and the underlying market technologies increase drastically'*. [173] Moreover, '*This effect is more distinct in r elation to regulations as they stem from a top-down legislative process'* . [174] Consequently, 'as *a result, regulation has a negative impact on a firm's innovation efficiency in highly uncertain markets*'. [175]

Manwaring in citing Kirby notes that excessive regulation may be an option worse than doing nothing at all, '*particularly where investment in beneficial new technologies may be unnecessarily fettered or driven offshore by regulatory interference and compliance costs'.* [176] Innovation can be challenged significantly by the provision of a HRB in relation to any absence of flexibility on innovators as to how to comply with such burden. [177] This needs to be taken into account when regulating. However, the need to ensure innovation and the push for a lower regulatory burden through a flexible framework has the potential to provide uncertainty, something that is arguably against the proactive law theory which was discussed above in this article. It is clear from this discussion, that any approach taken should be aware of the burden that it places on manufacturers as well as the impact on society as a whole.

5. Solutions to Ensure a Balance between Regulatory Connection and Proactive Law

As shown above, the *AEVA 2018* has some challenges in terms of interpretation, particularly in relation to the definition of an automated vehicle which will need to eventually be solved. This is an area whereby the law will need to keep up with technological development, and it is this which is the primary focus of this part of the article. As noted by Brownsword, '*Even (or especially) when regulatory frameworks have been put in place, they enjoy no immunity against technological change'*, [178] Moreover there is '*no guarantee'* that the system introduced will be effective. [179] There are two particular strategies which could be used in this instance, the first being soft law and the second being purposive interpretation.

5.1 Soft Law

Soft law could provide an appropriate solution to some of the definition challenges noted above, particularly in relation to the absence of clarity in the definition of an automated vehicle within the *AEVA 2018*. As noted above, the *AEVA 2018* has not provided an adequate definition of an automated vehicle nor has it provided any measure of the safety expected. Soft law may be beneficial in defining an automated vehicle as it is seen as a lighter and flexible measure of law, [180] something that this author submits, could be beneficial in terms of regulatory burden. The definition of soft law is *'contested'* . [181] However, as noted by Abbot et al, '*Soft law lacks the mandatory, enforceable character of hard law*'. [182] It can take a variety of forms, potentially encompassing; resolutions, guidelines, recommendations, communications or notices. [183] Soft law is used in a number of areas of law which are not related to technology, for example in relation to investment arbitration, [184] as well as corporate governance. [185] In relation to the definition of CAVs, soft law guidelines could beaccessible to stakeholders and the public through the provision of criteria for the Secretary of State to follow when defining a CAV, therefore providing some certainty to manufacturers, users and insurers of CAVs whilst providing the above flexibility.

Further as noted by Ryan Hagemann, Jennifer Skees and Adam Thierer, '*regulators might find soft law preferable to hard law when they have limited time, resources, and knowledge to deal with fast-moving technologies and rapidly-evolving sectors*'. [186] However the same authors further recognise some of the limitations of the '*soft law*' approach. For example, in relation to trust, they note, '*a certain level of trust must exist between the regulatory body, the innovator, and the public. They must all believe that actions and agreements will be undertaken in reasonably good faith and that all interests will be appropriately balanced and considered*'. [187]

The SAE levels are an example of guidelines which could be used as soft law in the future for determining the definition of an automated vehicle, [188] although this would depend on their use as guidelines and not being entrenched in statute. As noted above, some US states refer to these levels consistently through their definitions of automated vehicle and automated driving systems, therefore giving the levels legally binding effect. However, the insertion of these levels into legislation reduce potential flexibility due to the conversion from soft law recommendations, to hard law enshrined in legislation therefore essentially removing the beneficial flexibility surrounding them. The UK has chosen not to refer to the SAE levels in the *AEVA 2018*, due to the complexity involved. As noted previously, the UK's current definition of CAV, compared to some US state definitions, would not fit neatly within the SAE Levels, due to the term ' *in some situations'* in the UK's definition. Of course, similar guidelines or recommendations in soft law could be drawn up by the UK in defining a CAV. This could be used as a complementary function to *AEVA 2018* such as through an *'informal guidance document'*, a tool which is often issued by an agency to clarify its interpretation of a statute or regulation. [189]

There are a number of potential options in terms of the introduction of soft law, some of these have already been introduced and are already used for CAVs but in a different context. Alternatively, stakeholders have introduced criteria for what they see as an automated vehicle. For example, the Association of British Insurers developed principles for automated vehicles with both features and performance data included. [190] These are broader principles such as that the technology must be '*law abiding'* and that it should be able to come to an' *appropriate safe stop'* . [191] Whilst this is more detailed that what is currently used in the *AEVA 2018* , the principles are still quite broad. For example, one of the criteria is ' *Safe driving'* that the '*vehicle can manage all reasonably expected situations by itself'.* [192] This does not overcome the issue as to the determination as to how '*safety*' is to be determined, with further issues around how '*expected situations*' are determined. [193] Moreover, soft law is currently used in the UK in relation to the testing of CAVs and the Principles for Cyber Security of Autonomous Vehicles. Comparatively, the Testing Code [194] provides a slightly more expansive definition of a CAV. It distinguishes between and provides a definition for conditionally, highly and fully and highly automated vehicles. The Code notes that a fully automated vehicle is:

'A vehicle fitted with an ADS that does not require a safety driver as a fall-back. The vehicle is capable of safely completing any journey without the need for a driver in all traffic, road and weather conditions that could be managed by a competent human driver'. [195]

A highly automated vehicle is further defined as:

'A vehicle fitted with an ADS that does not require a safety driver as a fall-back. The driver does not need to respond to a system takeover demand. The ADS can be activated within specific driving situations such as motorway driving or in low speed conditions'. [196]

Finally, a conditionally automated vehicle is defined as:

'A vehicle fitted with an ADS that requires a safety driver to act as a fall-back for the system to assure safety while the vehicle is in automated mode. The safety driver must respond to a system takeover demand'. [197]

These definitions both overlap and extend further than the definition contained in the *AEVA 2018* . The fully automated vehicle definition, however, goes further by the use of '*any*' as to where the vehicle is capable of safely driving. [198] The definition of higher automated vehicle would also likely fall within the AEVA 2018 although the requirement of a safety driver in conditionally automated vehicle would mean it does not fall within. Interestingly these terms utilise the word '*safety*', which, similar to the *AEVA 2018*, has not been defined within the code and would need further expansion. Further, both fully and highly automated vehicles were defined in the previous testing Code and in the fully automated vehicle definition, the vehicle would be' *designed to be capable of safely completing journeys without the need for a driver in all traffic, road and weather conditions'* which '*can be managed by a competent human driver'* . [199] The requirement that the journey would need to be '*managed by a competent human driver'* is interesting, and one which seems to follow the safety being closer to vehicles of the current standard, rather than of a greater standard, this has been removed in the later definition.

Nevertheless, the split between the fully and highly automated vehicles is not necessarily workable for the *AEVA 2018*, whereas the Code for Testing provides different requirements depending on the automation level of the vehicle, the *AEVA 2018* is one set of insurance rules applicable to the definition given which is not directly applicable to a fully automated vehicle (due to the absence of the term *'certain'*). However, the means of definition through the Code could be particularly useful. Whilst manufacturers are not legally required to follow the Code as such, failure to follow has the potential for liability proceedings against the manufacturer. [200] Of course, it is not envisaged that the *AEVA 2018* would follow the definition of CAV in the Code for Testing precisely, the definition here is still too vague and clearly not calculable.

Alternatively, of course, a harmonised framework of safety could be used as guidance to determine the interpretation of safety in the *AEVA 2018* and could further provide a solution internationally. Harmonisation could provide significant benefits and remove potential challenges in the future, for example the difficulty in terms of whether a vehicle in one jurisdiction which is deemed safe, does not meet the requirements in the UK. [201] A potential solution within this is the use of soft law [202] to harmonise. As noted by Marchant and Allenby, '*Although not legally binding, soft-law instruments do have some beneficial features. Because they are not promulgated by any government, their application is not limited to that government's jurisdiction, but is inherently international in scope'*. [203] There are already standards as produced by the International Organization for Standardization (ISO) named ISO's and are applicable to the safety of CAVs. For example ISO's falling under ISO/TC 204 on '*Intelligent transport systems'*. [204] The introduction of ISO's to assist the interpretation of safety is therefore a potential solution, however, this would require an ISO being introduced directly on the relevant safety requirements of CAVs and which would fit within the UK framework. However, the Secretary of State would still be required to interpret and apply these standards in making the decision and to draw their up their list. Alternatively, the United Nations Economic Council for Europe Global Forum for Road Traffic Safety has developed the, '*Resolution on the deployment of highly and fully automated vehicles in road traffic'* [205] which provides a number of recommendations such as that the vehicle should, '*React to unforeseen situations in a way that minimizes danger to the vehicle's users and other road users...(and) Communicate with their users and other road users, in a clear, effective and consistent way, by providing sufficient information about their status and intention, and enabling an*

appropriate interaction'. [206] It seems that the legislature is in favour of adopting UNECE recommendations in determining the safety of a vehicle, as this could also fall within harmonised soft law. [207] Such an approach could be beneficial due to the amount of discussion and consultation internationally which takes place at the UNECE. [208] However, such an approach would need to be compatible with the *AEVA 2018* or the *AEVA 2018* would need to be altered. The introduction of soft law for CAVs is a potential way to maintain connection. First, and most importantly, soft law would allow a certain amount of flexibility and manoeuvrability for the Secretary of State in determining the exact definition of an automated vehicle and safety, as long as it matches the broad definition within the *AEVA 2018*, therefore permitting decisions based on the technological situation at the time and allowing the technology to stay connected. [209] Second, soft law is much easier to update without the need for amending legislation to go through Parliament, again allowing it to change easily and quickly based on the development of technology and reducing chances of disconnection. [210] This would therefore potentially solve some challenges, as noted by Kaal, that rule makers, '*perpetuate a costly and uncertainty-increasing process of rule revisions, amendments, and repeals to address...shortcomings*'. [211] Of course, it is important that any soft law is thoroughly discussed with enough scrutiny,to make it as compliant as possible with proactive law. The absence of scrutiny is a risk particularly in light of what we have discussed above. It was evident that the legislature had not completely addressed all of the issues resulting from the introduction of technology, meaning that the LC has had to revisit certain elements. [212] Third, due to its manoeuvrability and flexibility, soft law is unlikely to cause as much disruption to innovation as a hard law legislative definition. However, whilst soft law provides greater certainty, flexibility also limits certainty compared to hard law, particularly if the soft law guidance is not changed on paper when flexibility is used. This could mean a significant challenge in terms of compliance with proactive law. However, it is submitted that greater detail than currently exists for the definition of CAVs would be welcome and increase compliance with proactive law, as long as this does not lead to perversity. Further, Hagemann, Skees and Thierer note that there would be less certainty in relation to soft law and further that, '*uncertainty can limit an inflow of resources into a market, slowing or preventing innovation'* . [213] Moreover, the flexibility with soft law would only be used by the Secretary of State, who would be utilising the guidelines to produce a list of automated vehicles, the guidelines would be helpful to manufacturers but the non-compatibility with them would mean that the Secretary of State could refuse to put the vehicle on the list, this therefore removes a significant issue around non-compliance with important safety standards. Nevertheless, as noted by Leenes et al, the voluntary basis of soft law could '*enhance the level of acceptability for stakeholders'*. [214] Fourth, the compatibility of soft law with harmonisation could be a significant benefit, particularly when issues such as safety could cause cross border challenges.

Soft law could potentially be used in terms of the causation issues noted by the LC. As noted above, there were differing viewpoints in terms of the best solution in relation to causation, with slightly more consultation respondents wanting further clarification. [215] Clarification was wanted by the ABI and Thatcham who noted concerns that causation would cause a '*considerable degree of uncertainty*', [216] and further that insurers would be '*be less able to price accurately'.* [217] However, DAC Beachcroft noted that, '*it would be difficult to identify an 'exhaustive list of scenarios'.* [218] Case law would mean the courts essentially filling gaps in the law, consequently, soft law could be used when future gaps are apparent, and this would allow the provision of greater certainty whilst allowing the necessary flexibility.

It therefore seems that soft law, with some additions and particularly when addressing cross

border challenges such as safety and defining automated vehicles, could be a positive solution, albeit if it is assured that manufacturers, insurers and other stakeholders are involved in the decision making and that it does not create even greater uncertainty. Of course it is clear that absolute certainty is a significant challenge. Soft law could be the way to ensure that regulatory connection is maintained, and would allow relatively quick changes, ensuring continued regulatory connection. It would further mean compliance with proactive law, at least to a certain extent. Of course, it can be questioned whether there is another approach more conducive to certain challenges faced in the *AEVA 2018* , such as '*purposive interpretation'*.

5.2 Purposive Interpretation

A potential way for the *AEVA 2018* to maintain regulatory connection is through the courts' purposive interpretation of the Act depending on technological development at the time. This, it is submitted, would be unlikely to be used in relation to the definition of automated vehicle in the *AEVA 2018*, due to the fact that the decision is to be made by the Secretary of State as to what falls within the definition. However, it could be beneficial in terms of the definition of accident in a CAV context along with the issues pointed out by the LC which would be more suitable to a purposive approach. As noted by Lyra Bennet Moses, *'A judge adopting a purposive approach in dealing with cases involving new technologies is more likely to reach the result that would have been reached at the time of the rule's creation, had the future been foreseen'*. [219] An example of purposive interpretation in practice can be found in Human Fertilisation and in *R (Quintavalle) v Secretary of State for Health* (*R v SOSH*). [220] In *R v SOSH* the definition of *'embryo'* in the *Human Fertilisation and Embryology Act 1990* (*HFEA 1990*) was examined in relation to newer technological developments. At the time of the introduction of the *HFEA 1990* , the creation of live embryos without fertilization was not in existence, and Parliament when introducing the *HFEA 1990* would not have known about this technique. [221] The House of Lords held that the *HFEA 1990* definition covered CNR. Lord Bingham noted that whilst it was a '*constitutional imperative*' [222] that the courts stick to their interpretative role and do not '*assume the mantle of regulators'* [223] the court can use purposive interpretation.

Although Parliament was not aware of the scientific possibility of CNR at the time of the introduction of *HFEA 1990*, the Courts could interpret the purpose of Parliament in incorporating them within the definition. [224] This is therefore an example of purpovism by the Court to ensure that the law remains connected with the development of technology. Brownsword, however, noted that whilst this case was going through the Court, there was a significant debate in Parliament surrounding Stem Cell research, and therefore, "*it was perhaps not imperative that the courts seized on the regulatory disconnection as an opportunity to launch a debate about the regulatory position*" . [225] Consequently, the Court moved too quickly in attempting to reconnect the technology. Brownsword was of the view, however, that '*intelligent purposive interpretation'* is in line with the value of congruence that is central to the rule of law as long as it remains within the spirit and intention of the regulation. [226] It is therefore worth recalling an earlier observation in this paper that regulatory disconnection is not necessarily negative, although where it can cause regulatory failure, it should be removed. The removal of regulatory disconnection should not be '*done at all costs',* [227] the courts should use their judgement as to the timing of such attempts to reconnect, for example whether there is a debate in Parliament surrounding this potential disconnection and whether this is within the spirit of what Parliament had intended.

It is clear consequently that purposive interpretation could be a significant tool to enable the law to remain connected to the technology, particularly with regards to the LC areas and the

determination of accident. With regards to causation, and as noted above, it is clear that some are of the view that case law would be able to manage causation issues. [228] Purposive interpretation would allow the law to be adaptable, with the courts determining issues on a case by case basis, although this would be a sacrifice to certainty and, as noted above, with the courts being required to fill gaps in the law. Consequently, as noted above, a combination of both a purposive approach as well as some soft law where gaps do become prevalent, could be the most appropriate approach to causation. This would provide both a level of certainty and flexibility, and would further provide the necessary guidance for the courts when deciding cases. It is important to note that whereas soft law in determining the definition of automated vehicle would be something, which should be introduced in the near future, due to it providing the very focus of what the *AEVA 2018* covers, the causation issue is something that would almost certainly be determined when more is known about how the technology will operate in practice, and causation issues will only likely become known. Moreover, it is suggested that the courts also use purposive interpretation in terms of the definition of accident in light of the protection of third parties in conventional motor insurance law. [229] The fact that the courts already use such an approach, albeit in a non-technological setting could make this approach more likely. However, a purposive approach would mean at least a partial sacrifice of proactive law. Purposive interpretation also relies on cases going to court, with which the facts which directly relate to the gaps in the law or where the law needs updating. The time between the introduction of the legislation and the interpretive judgment from case law could undoubtedly mean significant uncertainty.

Conclusion

This article has sought to provide a detailed evaluation of the *AEVA 2018*, with emphasis on issues of proactive law and regulatory connection. It has found that the *AEVA 2018* was introduced in advance of the introduction of automated vehicles to clarify the way in which third parties could be compensated. The *AEVA 2018* however leaves some issues open, such as the way in which the insurer can reclaim from manufacturers and whether there are any defences available, as well as in relation to definitions. The legislation was introduced in light of issues such as regulatory disconnection, both of which are concerns held in relation to technology law generally.

The *AEVA 2018* is an area where the balance between ensuring regulatory connection and clarity is extremely important, to ensure that both the legislation works and provides the necessary clarity for third party victim, manufacturers and insurers. The *AEVA 2018* has attempted to remain connected to the technology through the introduction of broad definitions and has attempted to provide some clarity, although further clarity is required. It is submitted that in parts, this attempt is valid, as the *AEVA 2018* has provided room to manoeuvre later on, which it is submitted, would be best served through the introduction of soft law. However, the fact that the LC has had to revisit other parts of the *AEVA 2018* such as in relation to causation and contributory negligence is concerning, as it shows that the law has been rushed through with questions undoubtedly about whether there are other parts of the *AEVA 2018* which may need to be revisited.

It is submitted that the most likely and beneficial approaches in providing clarity in the *AEVA* 2018 particularly in relation to the definition of automated vehicle is through soft law, particularly through harmonisation. This will provide the flexibility needed when defining an automated vehicle and updating definitions, whilst being much simpler in light of fast paced technological advancements, where the law may need to adapt quickly. However it is worth noting that there will be some absence of certainty when soft law is introduced due to its flexible nature, although it

is submitted, it could provide greater certainty than is currently provided. A purposive approach would also ensure that causation issues are dealt with in a flexible way based on the situations which arise before the courts, and this combined with soft law to fill any future causation gaps, could be an appropriate solution. Nevertheless, it is worth noting that the introduction of any regulation needs to be carefully thought through, with both proactive law and regulatory connection considered, to ensure that any future law is as effective as it can be.

[1] Dr Matthew Channon, Lecturer in Law University of Exeter. Thanks go to Professor Rob Merkin QC, Professor Andrea Lista and Felix Boon for comments on drafts. Errors are this author's own.

[2] The *AEVA 2018* was introduced originally in the previous Parliament as the Vehicle Technology and Aviation Bill. A general election was called for June 2017 and Parliament was dissolved. This meant that a new Bill needed to be introduced in the next Parliament and instead of both CAVs and Aviation, the new Automated and Electric Vehicles Bill concerned both CAVs and electric vehicles, these are two distinct areas and it is not the aim of this paper to evaluate the electric vehicle provisions of this Bill. It is important to note in terms of the *AEVA 2018* that under Section 21 (1) *AEVA 2018, 'This Act comes into force on whatever day or days the Secretary of State appoints by regulations'.* As noted under Section 21 (3) *AEVA 2018* , '*The power to make regulations under this section is exercisable by statutory instrument*' .

[3] There are a number of terms to refer to CAVs, this paper prefers the use of the term CAV or Automated Vehicle and uses them interchangeably, although recognising in practice they are different. CAV particularly notes the *'connected'* nature of the vehicle, whereas automated does not.

[4] Section 2 (1) *AEVA 2018.*

[5] Although as will be discussed below, there are issues determining who the insurer will be able to recover from.

[6] See for example the BBC "Who is responsible for a driverless car accident?' (BBC October 2015) < https://www.bbc.co.uk/news/technology-34475031 >accessed 08 March 2019.

[7] Wulf Kaal and Erik Vermeulen, "How To Regulate Disruptive Innovation—From Facts To Data" (2017) 52 (2) Jurimetrics 169-209, 172.

[8] Ibid.

[9] Lyria Bennett-Moses, 'How to Think about Law, Regulation and Technology: Problems with 'Technology' as a Regulatory Target' (2013) 5(1) Law, Innovation and Technology 1-20, 7.

[10] See below.

[11] Helena Haapio, "Introduction to Proactive Law: A Business Lawyer's View" (2010) Scandinavian Studies in Law Volume 49: A Proactive Approach. Edited by Peter Wahlgren.

[12] European Council, "Opinion of the European Economic and Social Committee on 'the proactive law approach: a further step towards better regulation at EU level" (2009/C 175/05).

[13] This will be discussed below.

[14] See section 143 (1) (a) and section 143 (1) (b) *RTA 1988* in terms of the criminal offence due to an absence for third party insurance.

[15] This is subject to section 151 (2) *RTA 1988* which will be discussed below.

[16] Compensation in relation to uninsured and untraced drivers is done under the Motor Insurers'

Bureau ' Uninsured Drivers' Agreement' (2015)<https://www.mib.org.uk/media/166917/2015-uninsured-drivers-agreement-england-scotland-wales.pdf> accessed 29 September 2019 and the Motor Insurers' Bureau 'Untraced Drivers' Agreement' (2017)<https://www.mib.org.uk/media/355104/amended-2017-untraced-drivers-agreement-england-scotland-and-wales_v10.pdf > accessed 29 September 2019.

[17] These are the levels commonly used to determine the progression of the development of autonomous vehicle technology. See for the full SAE levels, Society and Automotive Engineers, "Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles" (2018) J3016_201806. The Law Commission summarised the SAE levels as follows. Level 4, ' *The driving automation features can perform all the driving tasks even if a human driver does not respond to a request to intervene. If the limits of the automated driving system are for some reason exceeded, the system will put the vehicle into a "minimal risk condition". This may mean coming to a gradual stop, for example, or changing lane to come to rest on the hard shoulder'* . Level 5 is, ' *The vehicle is capable of performing all driving functions in all situations and conditions that a human driver could'* . These are different to level 3 which notes, inter alia , that ' *the human driver is expected to respond appropriately to "a request to intervene". A human "fallback-ready user" is therefore essential. The fallback-ready user must be receptive to a handover request or to an evident system failure, but is not expected to monitor the driving environment'* See UK and Scottish Law Commissions, 'Automated Vehicles: A joint preliminary consultation paper' (2018)<https://s3-eu-west-2.amazonaws.com/lawcom-prod-storage-11jsxou24uy7q/uploads/2018/11/6.5066_LC_AV-Consultation-Paper-5-November_061118_WEB-1.pdf> accessed 29 September 2019, [2.9].

[18] The *CPA 1987* implements the EU Product Liability Directive. Council Directive 85/374/EEC of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products Official Journal L 210, 07/08/1985.

[19] As noted by section 1 (2) (c) of the *CPA 1987* , *'"product" means any goods or electricity and (subject to subsection (3) below) includes a product which is comprised in another product, whether by virtue of being a component part or raw material or otherwise* '. However as will be discussed below, whether software is encompassed within this definition is not entirely clear. Note that as with conventional motor vehicles, as well as vehicles which are 'not capable of safely driving themselves' the manufacturer can be liable under the *CPA 198.*

[20] Centre for Connected and Autonomous Vehicles, 'Pathway to driverless cars: Consultation on proposals to support Advanced Driver Assistance Systems and Automated Vehicles Government Response' (January 2017) [2.6] < https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/581577/pathway-to-driverless-cars-consultation-response.pdf >accessed 08 March 2019.

[21] This was proposed in Centre for Connected and Autonomous Vehicles, 'Pathway to Driverless Cars: Proposals to support advanced driver assistance systems and automated vehicle technologies' (July 2016) < https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/536365/driverless-cars-proposals-for-adas-and_avts.pdf .> accessed 15 March 2019.

[22] See below.

[23] *E.C. Commission v United Kingdom (Re the Product Liability Directive)* (Case C-300/95) [1997] 3 C.M.L.R. 923, [29].

[24] *A v National Blood Authority* [2001] 3 ALL ER 289.

[25] Colin Gee and others v Depuy International Limited, The Depuy Pinnacle Metal on Metal Hip Litigation [2018] EWHC 1208 (QB).

[26] Ibid, [92].

[27] CCAV, 'Pathway to Driverless Cars: Government Response' (n 20). Also see section 11A (3) *Limitation Act 1980, inserted by* Schedule 1 (1) *Consumer Protection Act 1987.*

[28] UK and Scottish Law Commissions, Preliminary Consultation (n 17), [6.61].

[29] Section 4 (1) *AEVA 2018.*

[30] See for example, the ' *state of the art'* defence as mentioned above.

[31] UK and Scottish Law Commissions, Preliminary Consultation (n 17).

[32] Ibid.

[33] CCAV, 'Pathways to Driverless Cars: Government Response' (n 20) [3.14].

[34] UK and Scottish Law Commissions, Preliminary Consultation (n 17), [6-115 (1)].

[35] See for example *Donoghue v Stevenson* [1932] A.C. 562.

[36] In *Abouzaid v Mothercare (UK) Ltd* 2000 WL 1918530 there was a claim for both product liability under the CPA 1987 as well as in negligence. The Court found that whilst the manufacturer is liable under the CPA 1987 they were not liable under negligence. As noted by Pill LJ ([33]) 'Another factor is the seriousness of the injury which may occur, if one does occur. On that issue it can be said that there was a potential for a very serious injury in this case but as against that, the percentage of elastic recoils, even to the face, which will cause injury, I would expect, in the absence of evidence to the contrary, to be very small. The risk, while identifiable, was not in my judgment such that the manufacturer in 1990 can be held to have been negligent in supplying the product in the form it was'

[37] See Matthew Channon, Kyriaki Noussia and Lucy McCormick, *The Law and Autonomous Vehicles* (Informa Law, 2019) 36.

[38] See Professor Mark Simpson QC, Professor Michael Jones and Anthony Dugdale, *Clerk and Lindsell on Torts* (22nd Edition, Sweet and Maxwell, 2017), [11-51]. This was further mention in Ken Oliphant and Vanessa Wilcox 'Product liability in England and Wales'. In P. Machnikowski (Ed.), *European product liability: an analysis of the State of the art in the era of new technologies* (Principles of European Tort Law, Cambridge: Intersentia, 2016).

[39] Section 3 (1) *AEVA 2018* .

[40] Bryant Walker Smith, 'Automated Driving and Product Liability' (2017) 1 Michigan State Law Review, 1, 46.

[41] Ibid.

[42] *Clerk and Lindsell on Torts* (n 38), [11-58], notes 'a person cannot legitimately expect a car to have armour-plating even if this would reduce the chances of injury in an accident'.

[43] De Bruin R, 'Autonomous Intelligent Cars on the European Intersection of Liability and Privacy' (2016) European Journal of Risk Regulation, 7 (3) 485, 491. It is also worth referring to *Clerk and Lindsell on Torts* (n 38), [11-55] here, which notes that 'Although the Act pointedly dispenses with

the need to prove fault, the claimant must still prove defectiveness. It is not enough merely to show that the product failed and caused damage nor that a product is defective and that damage occurred, if that damage might equally have had some other cause' . However as noted by Mrs Justice Andrews in C *olin Gee and others v Depuy International Limited, The Depuy Pinnacle Metal on Metal Hip Litigation* [2018] EWHC 1208 (QB), [99]. ' *In order to prove the defect, a claimant must establish what it is about the state or behaviour of the product or the risks that it posed that led it to fall below the level of safety that persons generally were entitled to expect at the time the product entered the market, although he need not prove the precise mechanism by which it came to fall below that yardstick. The fact that a product fails following normal use and in circumstances in which a standard product would not have failed may suffice for the Court to draw the inference that it is defective* (Emphasis Added) '

[44] It is already evident that insurers have significant knowledge in this area due to their participation in research projects. For example, AXA have beencollaborating with a number of different organisations and researchers on projects. See for example the Venturer Project, < https://www.venturer-cars.com/ >accessed 12 March 2019.

[45] UK and Scottish Law Commissions, Preliminary Consultation (n 17), [6.51].

[46] BBC 'UK wants fully autonomous cars on road' (6 February 2019) < https://www.bbc.co.uk/news/technology-47144449 >accessed 24 March 2019.

[47] CCAV, 'Pathway to Driverless Cars: Government Response' (n 20).

[48] Ibid, [3.2]. For example the Society for Motor Manufacturers, stated: " *Step-by-step adjustments to the regulatory framework which draw upon an accurate understanding of public acceptance and use of new technologies will help ensure that regulation remains relevant and effective. A rolling regulatory review is, therefore, welcome* ".

[49] As will be discussed below.

[50] There are numerous instances where the law has been criticised for not keeping up with technology. For example, as noted in Gary Marchant, Braden Allenby and Joseph Herkert, *The Growing Gap Between Emerging Technologies and Legal-Ethical Oversight* (Springer, 2011) in relation to science and technology such as in US patent law which has failed to keep up with emerging technologies.

[51] European Economic and Social Committee (n 12).

[52] Helena Haapio (n 11).

[53] European Economic and Social Committee (n 12).

[54] Ibid, [6.12.1].

[55] See for example the CCAV consultations before the AEVA 2018, (n 20).

[56] See UK and Scottish Law Commissions, Preliminary Consultation, (n 17).

[57] UK and Scottish Law Commissions, 'Automated Vehicles: Analysis of Responses to the Preliminary Consultation Paper' (June 2019) <https://s3-eu-west-2.amazonaws.com/lawcom-prod-storage-11jsxou24uy7q/uploads/2019/06/Automated-Vehicles-Analysis-of-Responses.pdf> [6.3] accessed 27 September 2019. The UK and Scottish Law Commissions also released its '*Consultation Paper Number 2*' on 16th October 2019, see UK and Scottish Law Commissions, *'Consultation Paper Number 2 on Passenger Services and Public Transport: A Joint Consultation Paper* '. See <https://s3-

eu-west-2.amazonaws.com/lawcom-prod-storage-11jsxou24uy7q/uploads/2019/10/Automated-Vehicles-Consultation-Paper.pdf> Accessed 16thOctober 2019.

[58] Gerlinde Berger-Walliser, "The Past and Future of Proactive Law: An Overview of the Proactive Law Movement" in *Proactive Law in a Business Environment* edited by Gerlinde Berger-Walliser, Kim Østergaard (DJØF Publishing, 2012), 28.

[59] Knut Blind, Soren Petersen and Cesare Riilo, 'Impact of standards and regulation on innovation in uncertain markets' (2017) 46 (1) Research Policy 249, 251.

[60] Robert Merkin and Margaret Hemsworth, *The Law of Motor Insurance* (2ndEdition Sweet and Maxwell, 2015), 5.

[61] See discussion by Earl Russel in the House of Lords for a Motor Vehicles Compulsory Insurance Bill 1925. Motor Vehicles Compulsory Insurance Bill Hl (15 July 1925) Vol 62.

[62] Through the *Road Traffic Act (RTA) 1930* and *RTA 1934.*

[63] See for example the comments of Goddard J in *Zurich General Accident & Liability Insurance Co Ltd v Morrison* [1942] 2 K.B. 53, 61.

[64] Section 38 of the *RTA 1930* noted that ' *Any condition in a policy or security issued or*

given for the purposes of this Part of this Act, providing that no liability shall arise under the policy or security or that any liability so arising shall cease, in the event of some specified thing being done or omitted to be done after the happening of the event giving rise to a claim under the policy or security, shall be of no effect in connection with such claims as are mentioned in paragraph (b) of subsection (1) of section thirty-six' .

[65] Section 12 *RTA 1934* prohibited a number of exclusion clauses which meant that other exclusion clauses were permitted.

[66] Goddard J in *Zurich v Morrison* (n 63).

[67] Fenwick, Kahl and Vermuelen, "Regulation Tomorrow: What Happens When Technology Is

Faster Than the Law?" (2017) 6 (3) American University Business Law Review 561-594, 584.

[68] House of Lords Select Committee on Artificial Intelligence, 'AI in the UK: ready, willing and able?' (April 2018), HL Paper 100 [378].

[69] ECSC (n 12), [6.12.3].

[70] See David Collingridge, *the Social Control of Technology* (Pinter, 1980) as cited by Anna Butenko and Piere Larouche, 'Regulation for innovativeness or regulation of innovation?' (2015) 7 (1) Journal of Law, Innovation and Technology 52, 73.

[71] Anna Butenko and Piere Larouche, 'Regulation for innovativeness or regulation of innovation?' (2015) 7 (1) Journal of Law, Innovation and Technology 52, 73, discussing the Collingridge dilemma, David Collingridge, *the Social Control of Technology* (Pinter, 1980).

[72] Ronald Leenes, Erica Palmerini, Bert-Jaap Koops, Andrea Bertolini, Pericle Salvini and Federica Lucivero , "Regulatory challenges of robotics: some guidelines for addressing legal and ethical issues" (2017) Journal of Law, Innovation, and Technology, 9 (1) 1, 35. Leenes also states that deciding when to legislate for technology is 'an extremely challenging tight-rope walk', 40.

[73] Marjolein Van Asselt & Ellen Vos 'The Precautionary Principle and the Uncertainty Paradox' (2006) 9 (4) Journal of Risk Research 313-336.

[74] Anna Butenko, 'Sharing Energy: Dealing With Regulatory Disconnect In Dutch Energy Law' 7 (4) (2016) European Journal of Risk Regulation 701-716, 702.

[75] Ibid.

[76] Ibid.

[77] Gary E Marchant, 'The Growing Gap Between Emerging Technologies and the Legal-Ethical Oversight '(2011) 7 the International Library of Ethics, Law and Technology 19-33, 27.

[78] Ivan K Fong, "Law and New Technology: The Virtues of Muddling Through" (2000) 2 Yale Law & Policy Review, 456.

[79] See for example from Volvo in Fortune, 'Volvo will accept all liability when its cars are in autonomous mode ...' (October 2015, Fortune) < http://fortune.com/2015/10/07/volvo-liability-self-driving-cars/ >accessed 12 March 2019.

[80] Anna Butenko and Piere Larouche (n 71), 73.

[81] Roger Brownsword, *Rights, Regulation and the Technological Revolution* (Oxford University Press 2008), 162.

[82] Ibid.

[83] Leenes et al (n 72), 8.

[84] Ibid.

[85] As well as the UK's approach in the AEVA 2018, the UK has also taken steps to update the Highway Code also see in relation to testing below.

[86] There are already a number of research and development projects in the UK in relation to CAV's see Centre for Connected and Autonomous Vehicles 'Connected and autonomous vehicle research and development projects' (September 2018). The UK has further stated its ambition to have fully autonomous vehicles on the road at the end of 2019, however these are trials. See BBC 'UK wants fully autonomous cars on road' (6 February 2019) < https://www.bbc.co.uk/news/technology-47144449 >accessed 06 March 2019.

[87] See for example Peter Campbell , "UK sees an opening to overtake US and China in driverless cars" (Financial Times, January 2nd2018)

[88] Centre for Connected and Autonomous Vehicles "The Pathway to CAVs: Code of Practice for Testing" (2015)< https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/446316/pathway-driverless-cars.pdf>accessed 01 May 2019 .

[89] The CCAV recently published a new code of practice along with an 'invitation to comment' on this. See Centre for Connected and Autonomous Vehicles, 'Code of Practice: Automated Vehicle Trialling' (February 2019) < https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/776511/code-of-practice-automated-vehicle-trialling.pdf > accessed 24 March 2019. Also see CCAV 'Invitation to Comment: Code of Practice: Automated vehicle trialling' (February 2019) <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/776512/invitation-to-comment-code-of-practice-automated-vehicle-trialling.pdf> accessed 06 March 2019.

[90] Centre for Connected and Autonomous Vehicles "The key principles of vehicle cyber security

for connected and automated vehicles" (August 2017) <https://www.gov.uk/government/publications/principles-of-cyber-security-for-connected-and-automated-vehicles/the-key-principles-of-vehicle-cyber-security-for-connected-and-automated-vehicles> accessed 01 May 2019.

[91] However, as noted in the Law Commission's preliminary consultation paper 'Three areas are integral to delivering effective policy in this area, but are predominantly outside our terms of reference because they are being considered by others. These are: (1) data protection and privacy; (2) theft, cyber security and hacking; and (3) land use policy' See UK and Scottish Law Commissions Preliminary Consultation (n 17) 4.

[92] Ibid.

[93] Brandon Schoettle And Michael Sivak, " A Survey Of Public Opinion About Autonomous And Self-Driving Vehicles In The U.S., The U.K., And Australia" (Umtri-2014-21) July 2014 < https://deepblue.lib.umich.edu/bitstream/handle/2027.42/108384/103024.pdf?sequence=1&isAllowed=y > accessed 18 March 2019. Also see the study by Lynn Hulse, Hui Xie and Edwin Galea, 'Perceptions of autonomousvehicles: Relationships with road users, risk, gender and age' (2018) 102 Safety Science 1-13. The authors found that (8) 'perceptions revealed that autonomous cars were currently perceived in a generally positive light' although 'much effort is still required to encourage widespread acceptance'.

[94] Bryant Walker Smith, "Automated Driving and Product Liability" (2017) Mich. St. L. Rev. 1.

[95] Roger Brownsword and Han Somsen, "Law, Innovation and Technology: Before We Fast Forward—A Forum for Debate" (2009) 1 (1) Journal of Law, Innovation and Technology 1-73, 3.

[96] Butenko (n 74), 11 noted that the law could be made 'more robust' buy drafting legislation in wide terms.

[97] Ibid.

[98] Butenko and Larouche (n 71), 75.

[99] Brownsword (n 81), 166.

[100] Ibid, 165.

[101] ECSC (n 12), [1.2].

[102] Ibid, [3.7].

[103] Brownsword (n 81), 287.

[104] Butenko (n 74).

[105] Brownsword (n 81), 166.

[106] For example see sections 2 (1) and 3 (1) of the *AEVA 2018* .

[107] *Charlton v Fisher* [2002] Q.B. 578.

[108] See Ibid, (Kennedy LJ) [24], 'In my judgment the word "accident" in section 1 of the policy with which we are concerned should not be given a narrow meaning. On the face of it, and bearing in mind that the insurer and the insured are contracting against the statutory background provided by the Road Traffic Act 1988. Although Rix LJ dissented in this case (see [101]).

[109] See for example the ABI noted, 'The general proposal that insurers should not be able to

exclude liability for hacking raises serious concerns about the extent to which they could as a result be at risk - to whom and for what types of loss'. See Association of British Insurers and Thatcham Research 'Pathway to Driverless Cars: Proposals to support advanced driver assistance systems and automated vehicle technologies Response of the Association of British Insurers and Thatcham Research' 18 < https://www.abi.org.uk/globalassets/sitecore/files/documents/consultation-papers/2016/09/090916_abi_thatcham_response_ccav_automated_driving_consultation.pdf > accessed 23 March 2019. Also see Matthew Channon, Lucy McCormick and Kyriaki Noussia (n 37).

[110] Brownsword (n 81) 166.

[111] The mode of this clarification will be examined later.

[112] For the full SAE levels, see (n 17).

[113] See the LC referral to the SAE J3016 noting that 'the same vehicle may have features at different levels of automation, and these may or may not be activated at any particular time'. UK and Scottish Law Commissions (n 16), 15-16.

[114] CCAV, 'Pathway to Driverless Cars: Government Response' (n 20), 13-14.

[115] Ibid.

[116] See for example it was noted by the Association of British Insurers and Thatcham Research 'The technology in production that is approaching that level, and the systems currently under development, have diverse capabilities and widely differing user interfaces. We see very significant potential for public confusion around the responsibilities of the driver of such vehicles and a wide variation in the level of risk associated with each vehicle' 'Regulating Automated Driving: The UK Insurer View' (Association of British Insurers and Thatcham Research, July 2017), 8. < https://www.abi.org.uk/globalassets/files/publications/public/motor/2017/07/regulating-automated-driving/ > accessed 14 March 2019.

[117] See the House of Lords report which noted, 'CAV could have negative implications for drivers' competence, making drivers complacent and overly reliant on technology. This is of particular concern in emergency situations, where a driver may react slowly to taking back control of a vehicle. It may be the case that for Level 3 vehicles the risks will be too great to tolerate' See Science and Technology Select Committee, 'Connected and Autonomous Vehicles: The future' (2017 2nd Report of 2016-17, HL Paper 115) 36.

[118] See the definition provided above.

[119] Araz Taeihagh and Hazel Si Min Lim, 'Governing autonomous vehicles: emerging responses for safety, liability, privacy, cybersecurity, and industry risks' (2019) Transport Reviews 39 (1) 103, 108.

[120] It noted: ' *an automated vehicle may be listed, under section 1, as being capable of driving itself "safely" if the vehicle is designed and manufactured to be—capable of driving itself in a manner unlikely to cause damage to the automated vehicle or another vehicle, or injury to a person, on the road or surrounding area, and (ii) protected from hacking risks that the manufacturer knew, or ought reasonably to have known, are likely to cause damage to the automated vehicle or another vehicle, or injury to a person, on the road or surrounding area'* . This was an amendment by Karl Turner MP in the House of Commons Automated and Electric Vehicles Bill Committee (amendment 14, in clause 7, page 5, line 15).

[121] Bryant Walker Smith notes 'automated driving systems may be designed in ways that reduce

the severity of crashes that nonetheless occur. Slower speeds mean less crash energy' Bryant Walker Smith, 'Automated Driving and Product Liability' (2017) Michigan State Law Review 1, 16.

[122] See Maurice Schellekens, 'Self driving cars and the chilling effect of liability law' (2015) 31 (4), Computer Law & Security Review , 506-517, 510 as cited in Matthew Channon, Lucy McCormick and Kyriaki Noussia (n 37)

[123] Ibid.

[124] Bryant Walker Smith (n 121), 46.

[125] Schellekens (n 122), 510

[126] Ibid. There was a slightly alternative discussion of this from Bryant Walker Smith which was mentioned previously in this paper.

[127] Schellekens (n 122).

[128] As noted by Schellekens 'If the liability risks are deemed too high, manufacturers may delay the introduction of automated cars until technology allows a higher level of safety'. Ibid, 511.

[129] UK and Scottish Law Commissions (n 17), [2.55].

[130] Bryant Walker Smith (n 122), 18.

[131] Ibid. As has already been noted in this article, the UK has already introduced 'The key principles of cyber security for connected and automated Vehicles' to provide some best practice for manufacturers in terms of cyber security (n 86).

[132] Public Bill Committee Thursday 2 November 2017 (Morning), 75. The Clause introduced by Karl Turner MP stated ' (1A) The Secretary of State must consult on and publish the criteria that they will use to determine whether, in their opinion, a motor vehicle is designed or adapted to be capable, in at least some circumstances or situations, of safely driving itself without having to be monitored by an individual.'

[133] The proposal was rejected in the House of Commons Automated and Electric Vehicles Bill Committee. It was noted by John Hayes MP that such an amendment 'It would not be appropriate to legislate at this early stage... to set an approval procedure or safety criteria until we know what the international standards are. See Public Bill Committee: Automated and Electric Vehicles Bill (Thursday 2ndNovember), 93.

[134] Section 2 (1), An Act DC Act, 19-643 in the Council of the district of Columbia, January 23, 2013.

[135] Ibid, section 3 (a) (3).

[136] State of Connecticut Public Act No. 17-69, An Act Concerning Autonomous Vehicles, Section 1 (2).

[137] Ibid, section 1 (11) (d) (3).

[138] See NHTSA, 'Automated Driving Systems: A vision for safety' (2017) < https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/13069a-ads2.0_090617_v9a_tag.pdf >accessed 07 March 2019

[139] See Centre for Connected and Autonomous Vehicles, Principles of Cyber Security (n 90).

[140] CCAV Automated Vehicle Trailing (n 89).

[141] King & Wood Mallesons, "Driverless vehicle trial legislation - state-by-state" < https://www.lexology.com/library/detail.aspx?g=7ebdf60a-fa35-40d9-90f8-eca16749783b >accessed 13 July 2018.

[142] Walker Smith notes that, 'Jurisdictions—whether by statute or through case law—define these terms differently: Whereas California distinguishes between driving (as sometimes requiring some motion) and operating (as not), Illinois probably does not' see Bryant Walker Smith, " Automated Vehicles Are Probably Legal in the United States" (2014) 1 Texas A&M Law Review 411,468.

[143] Similar terms which could have a range of definitions are mentioned previously.

[144] Fagnant and Kockleman further note that 'While the proactive strategies pursued by these states is commendable, if many disparate versions of these crucial regulatory issues emerge (across distinct states), AV manufacturers will incur delays and increased production and testing costs' . See Daniel J Fagnant and Kara Kockleman, 'Preparing a nation for autonomous vehicles: opportunities, barriers and policy recommendations' (2015) 77 Transportation Research Part A 167-181,177.

[145] Much of this depends on whether and how the EU will reform its motor insurance and automated systems. Currently automated vehicles are regulated under the Sixth Consolidated Motor Insurance Directive 2009/103/EC of the European Parliament and of the Council of 16 September 2009 relating to insurance against civil liability in respect of the use of motor vehicles, and the enforcement of the obligation to insure against such liability. In early 2019 the European Parliament called on the European Commission to 'to carry out a thorough assessment, to adapt the current EU legal framework and to introduce, if necessary, new rules on the basis of which responsibility and liability are allocated; calls also on the Commission to assess and monitor the possibility of introducing additional EU instruments to keep pace with developments in artificial intelligence' (European Parliament resolution of 15 January 2019 on autonomous driving in European transport (2018/2089(INI), [21].

[146] Rustin Diehl & Matthew Thue 'Autonomous Vehicle Testing Legislation: A Review Of Best Practices From States On The Cutting Edge' (2017) 21 Journal Of Technology Law & Policy 197, 211.

[147] Ibid, 211.

[148] UK and Scottish Law Commissions Preliminary Consultation (n 17).

[149] See for example the Law Commission's website whereby it states 'The Law Commission is the statutory independent body created by the Law Commissions Act 1965 to keep the law of England and Wales under review and to recommend reform where it is needed' < https://www.lawcom.gov.uk/ >accessed 07 March 2019.

[150] For example, in relation to insurance law. Much of the law was codified in the Marine Insurance Act 1906 and subsequent case authority. The 'Insurance Contract Law' scoping paper was introduced in 2006, a number of other papers were then published resulting from the consultation on insurance contract law. Including Law Commission, 'Insurance Contract Law: Business Disclosure; Warranties; Insurers' Remedies for Fraudulent Claims; and Late Payment' (2014) (Law Com No 353). As a result of the Law Commission's Consultation, a significant reform was made to insurance law in the UK, with the introduction of the Consumer Insurance (Disclosure and Representations) Act 2012, the Insurance Act 2015, and the Enterprise Act 2016.

[151] UK and Scottish Law Commissions Preliminary Consultation (n 17).

[152] Ibid, 107.

[153] Ibid, 108.

[154] UK and Scottish Law Commissions analysis of responses (n 57) [6.3].

[155] Ibid.

[156] See Association of British Insurers' and Thatcham Research, 'Abi and Thatcham Research Joint Response to The Law Commission and Scottish Law Commission's Joint Preliminary Consultation Paper on Automated Vehicles' (2019) 20 < https://s3-eu-west-2.amazonaws.com/lawcom-prod-storage-11jsxou24uy7q/uploads/2019/06/AV001-ABI-and-Thatcham-Research-joint-response.pdf > accessed 27 September 2019.

[157] Section 145 (3) (a) *RTA 1988* .

[158] See Matthew Channon, Lucy McCormick and Kyriaki Noussia (n 37), 23-24.

[159] *Barnett v Chelsea and Kensington Hospital Management Committee* [1969] 1 Q.B. 428.

[160] *McKew v Holland and Hannen and Cubitts (Scotland) Ltd* 1969 3 All ER 1621.

[161] UK and Scottish Law Commissions, preliminary consultation (n 17), [6.51].

[162] Such an example can be found in the Mesothelioma line of case law, starting with *Fairchild v Glenhaven Funeral Services Ltd (t/a GH Dovener & Son)* [2003] 1 A.C. 32. Here the House of Lords found that despite the but for test not being met (as there could not be proof as to exactly which employer had caused the disease) those suffering with mesothelioma could be provided with compensation. This left issues as to apportionment of compensation (*Barker v Corus UK ltd* [2006] 2 A.C. 572 which was immediately overruled by Parliament in the Compensation Act 2006) and in relation to insurance (*Durham v BAI (Run Off) Ltd* [2012] UKSC 14). Professor Rob Merkin noted that 'Fairchild has proved to be a classic example of the ripple effect or, perhaps more un-kindly, chaos theory' see Professor Rob Merkin QC, 'Insurance and reinsurance in the Fairchild enclave' (2016) Legal Studies 36 (2), 302, 324. Also see the comments by Lord Neuberger and Lord Reed in *International Energy Group Ltd v Zurich Insurance plc UK Branch (Association of British Insurers and another intervening)* [2015] UKSC 33, [191] who stated that whilst the Fairchild case was 'obviously right' , ' as subsequent decisions have shown, the effect of what was a well-intentioned, and may seem a relatively small, departure from a basic common law principle by a court, however understandable, can lead to increasingly difficult legal problems—a sort of juridical version of chaos theory'

[163] UK and Scottish Law Commissions, preliminary consultation (n 17), [6.47].

[164] The LC ibid, note 'the effect of s 8(3)(a), which can be read as providing that where there are two causally related accidents (ie, (i) crash between "human driver" and AV which caused (ii) the shunt between automated vehicle and car in front) these are considered as a single accident.'

[165] This will be discussed below.

[166] As noted in ABI and Thatcham Research response to Law Commission Preliminary Consultation (n 156).

[167] UK and Scottish Law Commission analysis of responses (n 57), 4.

[168] The LC noted the insurers' 'desire for greater certainty'. UK and Scottish Law Commission, preliminary consultation (n 17), [6-51].

[169] See ibid, [6-49].

[170] Robert Edgell and Roland Vogl 'A Theory of Innovation: Benefit, Harm, and Legal Regimes' (2013) 5 (1) Journal of Law, Innovation and Technology 21, 35.

[171] European Council, "Towards an Innovation Principle Endorsed by Better Regulation" (2016) Issue 14, < https://ec.europa.eu/epsc/publications/strategic-notes/towards-innovation-principle-endorsed-better-regulation_en > accessed 01 May 2019

[172] Schellekens (n 122) 511, notes 'rationally, it makes sense for society to introduce automated cars from the moment they reach the stage where they are statistically safer than human drivers'.

[173] Blind et al (n 59), 258.

[174] Ibid.

[175] Ibid.

[176] Kayleen Manwaring "Kickstarting Reconnection: An Approach To Legal Problems Arising From Emerging Technologies" (2017) 22 Deakin Law Review, 53-83, 56. Citing Michael Kirby, 'The Fundamental Problem of Regulating Technology' (2009) 5 The Indian Journal of Law and Technology 1, 11.

[177] Ibid.

[178] Brownsword (n 81), 162.

[179] Ibid, 287.

[180] Leenes et al (n 72), 34.

[181] Kenneth Abbot, Gary Marchant, and Elizabeth Corley, 'Soft Law Oversight Mechanisms for Nano-Technology' (2012) 52 Jurimetrics 279, 285.

[182] Ibid.

[183] Maria Gonçalves and Maria Gameiro, 'Hard Law, Soft Law and Self-regulation: Seeking Better Governance for Science and Technology in the EU' (2011) Dinamia WP no 2011/18, 5.

[184] See Jose E Alvarez, 'Reviewing the Use of "Soft Law" in Investment Arbitration', (2018) Vol. 7.2 European International Arbitration Review 1.

[185] George Hadjikyprianou, 'the Principle of 'Comply or Explain' Underpinning the UK Corporate Governance Regulation: Is There a Need for a Change?' (2015) 7 (81) Corporate Law: Corporate Governance Law Journal.

[186] Ryan Hagemann, Jennifer Skees and Adam Thierer, 'Soft Law for Hard Problems: The Governance of Emerging Technologies in an Uncertain Future' (2018) Colorado Technology Law Journal, 36.<https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3118539>accessed 01 May 2019.

[187] Ibid, 67.

[188] Society and Automotive Engineers, "Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles" (2018) J3016_201806.

[189] Timothy F. Malloy, "Soft Law and Nanotechnology: A Functional Perspective" (2012) 52 (3) Jurimetrics pp. 347-358, 357.

[190] See Association of British Insurers, 'When can a car be described as "automated"? Insurers

set out 10 key features'<https://www.abi.org.uk/news/news-articles/2017/11/when-can-a-car-be-described-as-automated-insurers-set-out-10-key-features/> accessed 26 September 2018.

[191] Ibid.

[192] Ibid.

[193] Ibid.

[194] Centre for Connected and Autonomous Vehicles, 'Code of Practice: Automated vehicle trialling' (n 89) 25.

[195] Ibid.

[196] Ibid.

[197] Ibid.

[198] It notes that "Fully automated vehicles may still offer a full set of controls to allow a driver to resume manual control if they so wish". Ibid, [2.9].

[199] CCAV, 'A Code of Practice for Testing' (2015) (n 88).

[200] As noted in Para 1.5 of the Code, 'Failure to follow the Code may be relevant to liability in any legal proceedings. Similarly, compliance with the Code does not guarantee immunity from liability in such circumstances'. Ibid.

[201] Gary Marchant and Brad Allenby noted that one of the reasons for the harmonisation of emerging technology lawsis 'to protect against transboundary impacts', they noted this in terms of another area such as pollution. Noting that, 'toxic air pollutants emitted by one nation may cross into the territory of another country and cause harm', it is submitted that this of course could be directly related to CAVs, i.e. a CAV moving from another country and causing harm. See Gary E. Marchant & Brad Allenby, 'Soft law: New tools for governing emerging

Technologies' (2017) 73 (2) Bulletin of the Atomic Scientists, 108-114, 109. It was further noted by the United Nations Economic Council for Europe that, 'advancements can only be realized on a global scale if countries work together on the necessary international laws and regulations. Otherwise, with different systems in place in different countries, all autonomous vehicles would stop at the border, meaning that international transport of people and goods could not benefit from these technologies' See UNECE, 'Autonomous transport must be developed with a global eye' (19 February 2019) < http://www.unece.org/info/media/presscurrent-press-h/transport/2019/autonomous-transport-must-be-developed-with-a-global-eye/doc.html >accessed 23 March 2019.

[202] Ibid, 112.

[203] Ibid, 113.

[204] See for example ISO 11270:2014 on Lane keeping assistance systems (LKAS) -- Performance requirements and test procedures.

[205] United Nations Economic Council for Europe: Inland Transport Committee, 'Report of the Global Forum for Road Traffic Safety on its seventy-seventh session' (3rdOctober 2018) Annex 1.

[206] Ibid.

[207] Public Bill Committee, 'The Automated and Electric Vehicles Bill' (Thursday 16th November 2017) 194. As noted by John Hayes MP, 'The international standards by which these vehicles will be

approved for safe sale and use are still being considered, as I said previously, by the United Nations Economic Commission for Europe, in which the UK plays a leading role. Those standards will form the basis of the type approval process. That means that nothing will be sold or used on our roads that does not meet those standards, and it is vital that standards are agreed internationally, for obvious reasons: the nature of the automotive industry and of the vehicles' use means that it must be done in that way'3.

[208] For example in a recent UNECE press statement (n 201), it was noted that 'Focusing on the need for a uniform approach to ensure that the benefits of these technologies can be fully harnessed for all modes of inland transport, automation has been high on the agenda as close to 400 representatives of governments and key transport stakeholders from over 70 countries around the world gather in Geneva this week for the 81st session of UNECE's Inland Transport Committee'.

[209] As noted by Erik Vermeulen, Mark Fenwick and Wulf A. Kaal, "Regulators need to abandon a fixation on finality and legal certainty and embrace contingency, flexibility and an openness to new ideas". See Erik Vermeulen, Mark Fenwick and Wulf A. Kaal, "Regulation Tomorrow: What Happens When Technology is faster than the Law?" (2017) 6 (3) American University Business Law Review 561, 590.

[210] This can be seen as noted above in relation to the testing code, with consultation now underway in relation to testing, which does not required Parliament approval. See CCAV, 'Code of Practice: Automated vehicle trialling' (n 89).

[211] Wulf A, Kaal and Erik Vermeulen, "How To Regulate Disruptive Innovation— From Facts To Data" (2016) 57 Jurimetrics Journal, 169-209,190.

[212] As noted above, the Code of Practice for Testing is currently going through a consultation process in relation to updating it (see Centre for Connected and Autonomous Vehicles, 'Code of Practice: Automated vehicle trialling' (n 89)), similar or more consultation would certainly be required in relation to the update and introduction of any soft law.

[213] Hagemann et al (n 186), 69.

[214] Ronald Leenes et al (n 72), 34.

[215] UK and Scottish Law Commissions analysis of responses (n 57), 88.

[216] ABI and Thatcham response to the Law Commission (n 156) cited in ibid, 88.

[217] Ibid.

[218] DAC Beachcroft, 'Automated Vehicles: A joint preliminary consultation paper by the Law Commission of England & Wales and the Scottish Law Commission, Response of behalf of DAC Beachcroft LLP' (2019) 15 < https://s3-eu-west-2.amazonaws.com/lawcom-prod-storage-11jsxou24uy7q/uploads/2019/06/AV048-DAC-Beachcroft-LLP.pdf > accessed 28 September 2019. Cited in UK and Scottish Law Commission analysis of responses (n 57) 91.

[219] Lyra Bennett-Moses, 'Recurring Dilemmas: The Law's Race to Keep up with Technological Change' (2007) Journal of Law, Technology & Policy 239, 280.

[220] *Regina (Quintavalle) v Secretary of State for Health* [2003] UKHL 13.

[221] Ibid, [14].

[222] Ibid, [15].

[223] Ibid.

[224] Although see for example the discussion in JK Mason, 'Case Comment: Clones and cell nuclear replacements: a Quintavalle saga' (2003) 7(3), Edin. L.R. 379-387, 387. 'A nagging feeling remains that the better route would have been to acknowledge that differences can be discerned, even though these relate only to the modes of creation, and then to alter the law so as to accommodate such differences. This, of course, could only be done by Parliament, and Parliament may yet do so. There is certainly no shame in reviewing a thirteen-year old statute, particularly one covering such a dynamic area as medical law--and the fear of reopening old controversies may well be misplaced.' It was noted by Kathy Liddell that 'In overview, this unanimous decision from the House of Lords is a powerful statement that purposive statutory construction may be used to treat the law's limp in the field of medical technology, even in the event of contradictory statutory language' see Kathy Liddell 'Purposive interpretation and the march of genetic technology' (2003) 62(3) Cambridge Law Journal 563-566, 566.

[225] Brownsword (n 81), 182.

[226] Ibid, 183.

[227] Ibid, 184.

[228] See DAC Beachcroft (n 218).

[229] *Charlton v Fisher* (n 107).