

COMPARE AND CONTRAST THE POTENTIAL APPLICATIONS OF NEGLIGENCE VS. STRICT LIABILITY IN A NOTABLE AUTONOMOUS VEHICLE ACCIDENT TO DETERMINE THE MOST APPROPRIATE LEGAL FRAMEWORK FOR ASSIGNING CIVIL LIABILITY

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❖ Abstract

Artificial Intelligence is the trending technology in our 21st century. So now we are using the artificial intelligence in many products and gadgets and by this way they the artificial Intelligence technology is helping us in a very broad way. But in this whole universe every thing has a good and bad impact. Therefore artificial intelligence have also its good impact and bad impact in our society. Some good impact is that artificial intelligence making our life easy day by day but it also have a bad impact in our society like the autonomous vehicle (AV) crash. The autonomous vehicle (AV) crashes expose tensions between negligence and strict liability. Few years ago there are many cases happened regarding autonomous vehicle accidents in many countries all over the world. In this awful accident many innocent people lost their lives in this types of autonomous car crash. Many family's all over the world lost their family members. Day by day artificial intelligence making human being blunt, an form this point we humans are slowly depending on artificial intelligence. And at the end of the day this types of atrocious accidents happening in our society.

❖ Introduction

Compare and contrast the potential applications of negligence Vs. Strict liability in a notable autonomous vehicle accident to determine the most appropriate legal framework for assigning civil liability.

In a notable autonomous vehicle (AV) accident, negligence and strict liability serve distinct legal frameworks for assigning civil liability, each with specific applications, advantages, and limitations. Negligence is that which is proved by a party that they failed to use reasonable care which in turn causes harm. In the case of autonomous vehicles (AV) negligence may apply when the vehicle's operator or the manufacturer do not meet safety standards for example a driver's failure to intervention or a developer's failure to fix known software bugs. This framework which we put forth includes the apportionment of fault between many parties which may include drivers, manufacturers or even third parties which we take into account regarding their which play a role and do behave in a certain way. It puts forth a deterrence which by punishment of at fault parties and also seeing to it that victims are made whole based on the degree of each

party's fault. But what we see is that negligence which has high proof requirements (duty, breach, causation) which in advanced technical autonomous vehicles accidents are very complex and may in fact increase legal costs and uncertainties for consumers and manufacturers. And Strict liability on the other hand does away with the proof of fault or negligence, which is what we see in traditional tort cases. It comes into play when an autonomous vehicle (AV) has a design, software, or hardware defect which results in injury. Manufacturer liability is determined by the presentation of that the vehicle was defective and that this defect caused the injury which in turn cause the damage in which they do not have to prove negligence. This approach is more in favour of the plaintiff and also speeds up the award of compensation which in turn increases consumer confidence in AVs. At the same time it does offer less in terms of fault allocation and may lead to increased costs for manufacturers which in turn may be passed on to the consumers. Strict liability is very much so for products that are innately dangerous and hard to tie to human failure as is the case in software issues or hardware failures in autonomous vehicle (AV) systems.

❖ **Walter Huang's fatal 2018 Tesla crash case law.**

In the year 2018, Walter Huang an Apple company engineer, aged 38 years. Returning home from his work in his Tesla's model X which is a autonomous vehicles (AV) and have the Autopilot feature but unfortunately the car autopilot having a fault or flaw that prevents it from working correctly and that's why Walter Huang death has been happened. In this incident Walter Huang's wife Mrs. Huang lost her husband and Mr. Walter Huang had two children's and unfortunately the two children lost their father in this awful accident. Therefore a Minami Tamaki LLP's partner Mr. Fong said that Tesla is being beta testing their autopilot software on live driver's¹. The fact is that the Huang family claims that was made against Tesla that include serious defected design, fail to warn, warranty breach and the main thing is product liability and also misrepresentation of their product to the customer and also misrepresentation both false and misleading. After this incident the Huang family never want that this types of incident should happens with other innocent person avoid tragedies like this one for other, who drives a Tesla autonomous vehicles (AV). They want that company should fixed their autonomous vehical's serious problem and then after they give the final ready and safe product to their customers. And by this way such a awful accidents will never happens in future.

The lawsuit additionally names the California (SDT) State Department of Transportation as a defendant. The crash of Mr. Walter Huang's Tesla Car occurred against a rigid barrier placed in the centre of a divided highway to separate opposing lanes of traffic, highway median lacking a crash attenuator guard². After that Caltrans did not replace the guard after an earlier crash at same site. In that fatal crash which took out Huang's life we saw a part of a large set of what were over 956 US accidents in which Autopilot was a reported issue to auto safety regulators. Also it is reported that the NHTSA looked into these matters of Autopilot at over 40 different accidents. Also they conducted over 40 separate studies on accidents that involved Tesla's auto driving systems which in total claimed 23 lives. Although Tesla markets these as Autopilot and Full Self-

¹ <https://www.cnn.com> (last visited on November 15, 2025).

² <https://www.cnn.com> (last visited on November 15, 2025).

Driving features they have still to put out a fully autonomous car to the public which in fact has taken years to achieve as predicted by Co-founder and CEO Elon Musk that it would be ready “around the corner”, a promise that also included in the major growth of the company’s value. Although Elon Musk’s company Tesla faces lawsuit and investigation after the car crash, and the car Tesla model X involving autopilot and full self-driving driver assistance system, which the car company has blamed on inattentive drivers. Tesla model X, autopilot vehicles can navigate, adjust speed, and apply brakes on the highway, but cannot substitute human drivers. The materials that explain the Autopilot feature state that it doesn’t make the car self-driving and that the system demands an alert human driver. After that the court delivered a verdict against Tesla, awarding 329 million dollars in damages for the crash. The case mark the first time a jury has found Tesla auto pilot defected and setting the stage for future products liability lawsuit against the automaker.

In the year 2018 another case happen with Elaine Herzberg was killed in a fatal accident in Tempe, Arizona, in 2018 when an Uber self-driving test car collided with a cyclist crossing the street. The human safety driver's distraction and the car's software's inability to recognise and respond to the pedestrian were two of the contributing factors in the collision, which ultimately resulted in the driver's guilty plea to endangerment. Uber halted its self-driving car tests as a result of the incident, and police and NTSB (National Transportation Safety Board) investigations revealed shortcomings in the self-driving ³When Elaine Herzberg was crossing the street on her bicycle outside a crosswalk, an Uber AV in autonomous mode with a human safety driver struck and killed her. In order to prevent unpredictable behaviour, Uber disabled the vehicle's original automatic emergency braking (AEB) system under computer control after the AV's system identified the pedestrian but was unable to accurately classify her or predict her path. When the collision occurred, the safety driver was preoccupied. Following that, the safety operator entered a guilty plea to endangerment, a criminal charge; however, prosecutors were unable to establish any criminal liability against Uber as a company. The case did not result in a judicial decision on civil liability because a private civil settlement was reached with the victim's family.

Comparison and Contrast of Legal Frameworks.

In case If it is a negligence the plaintiff will have to prove defendant (driver, manufacturer, etc) and was negligent and that such negligence caused the injury. Plaintiff need only prove injury occurred due to a defective product or an abnormally dangerous activity without having to show fault. If you are focusing on the action of the defendant such as a driver's negligence or inattention On the behavior of each specific manufacturer that caused harm. In the event of burden of proof negligence is high burden on the victim to access technical data and prove a specific human or corporate failing and strict liability shifts the burden to the manufacturer/owner to prove the product was not defective or the accident was not the cause of the injury. For current testing/partial autonomy (like the Uber case), The existing negligence framework remains relevant, as human operators are still considered part of the system and bear a duty of care to intervene. The

³ See **Uber Technologies Inc., Self-Driving Car Incident Report (2018)**; see also **National Transportation Safety Board (NTSB), Preliminary Report on the Crash Involving an Uber Technologies, Inc. Test Vehicle and a Pedestrian (2018)**, noting that Uber halted its autonomous-vehicle testing following the fatal crash, and investigations by local police and the NTSB revealed significant shortcomings in the vehicle’s self-driving system.

Tempe case highlights how driver negligence can be a primary factor in these "human-in-the-loop" scenarios. For future full autonomy strict liability (specifically, product liability) is widely considered the most appropriate framework.

❖ The Most Appropriate Legal Framework

For high-level or fully autonomous vehicles, strict liability is likely the most appropriate framework for assigning civil liability for technology failures.

Justification: With control moving away from humans and into the hands of machines, the fault switches from the actions of the operator, to the design and functionality of the system. Victims of the complex AI decision-making process face an uphill battle proving negligence; however, strict liability eases this burden, as it only requires proving the existence of a defect that caused the injury, rather than a lack of reasonable care. This streamlines the process for victims and incentivizes manufacturers to completely internalize the costs of injuries from the accident, promoting safety and innovation at a greater level. **Actual Situation:** The present system consists of a combination of human and fully autonomous systems where negligence is split. Self-operating systems are at level 2-3 while fully autonomous systems are at level 3.

- A Comparing between strict liability and negligence.

Let's discuss and compare few men results of autonomous vehicle car crash. If we discuss about the accident than definitely some negligence and some strict liabilities rules will come that provide us the fact that why this kinds of accident is happening and it provide the court that can set the level of here equally to social most favourable care level. By this way law gives permission equally harm and level of a activity is constant. All the this assumption give favoring the principal of streak liability full stop in this case of strict liability it is the duty of the court to understand and obtain the size of damages. And on the other hand side in negligence the code have to understand or determine the level of care as a legal standing for social most favourable care actually being taken in order to look after whether the injured person was negligent or not. All the this information or hard to required and costly to acquire. All the cost is very much height to solve claim under negligence. And by these way it is and other very important merit or rules, principal of strict liability for various level of activity. In a negligence system a party that is injured does not have to take into account the effects of the action which caused the injury as they are able to avoid liability by being proven to have due care. Thus such parties may go ahead with a high level of activity which does not take into account the greater social cost. In contrast under a strict liability regime the injurer is made to internalize the total social cost of their action which in turn causes them to reduce the level of their activity to what is socially optimal. This means that in a negligence system we see socially efficient outcomes if the damages are exactly what is required for full compensation. But in the case of bilateral accidents which is when both parties have the chance to take preventative measures the efficiency of the strict liability may break down. No responsibility which is the issue for the victim, at the same time strict liability which is for the injurer. In the case of accidental bi-lateral incidents we see that for efficiency to be achieved the best solution is to use a negligence based rule which also may include defenses like contributory or comparative negligence. Therefore we see a

small scale of negligence and strict liability. After which come the rules of no liability, which state that if the injurer is not held responsible for the harm, she will choose the greatest level of care which is zero to minimize her cost. The victim may also end up taking unnecessary care. In the past we have shown that this is not ideal as the cost of the accident will be too high. It is clear that simple negligence rules produce the best social results. A Nash equilibrium is what we get out of it as it should be which is to say that a technologically rational self interested party would assume the same of their opponent, which in turn means that which is efficient precaution is rational. Generally speaking, an (A,B) pair is a Nash Equilibrium if, given B's action, A's action is optimal⁴, and conversely, given A's action, B's action is also optimal. Such assumptions of Nash Equilibrium are indeed standard, although even with well-behaved functions, there may be existence problems. It is also typical to discuss a bilateral incident within the Nash framework. We must also observe that within the standard framework of simple negligence, there is no legal standard of care that is owed to the victim. Negligence with the Defense of Contributory Negligence. Under that rule, the injurer is held liable if she fails to exercise appropriate care and, on the contrary, the victim does exercise appropriate care. This means that the injurer has one more way to escape liability. Apart from showing that he has exercised due care, he can show that the victim also did not exercise due care. In trying to determine whether this policy causes social cost to be optimally distributed, we can use the same reasoning as before. If the injurer believes the victim has exercised due care to be free from liability, she will also be incentivized to do so and this, in turn, incentivizes the victim to exercise due care as she now bears the entire cost of the loss, which she can mitigate by exercising due care. The injured is conscious that it is reasonable for her to take care of it. Again, what we see is a stable and a unique equilibrium point, also a socially optimal result is achieved. As for the Comparative Negligence Rule which goes a different route from the former rules out, here when both parties are at fault the accident costs are split between them according to the degree of their negligence. Also we do this by way of calculating.

The measure of the difference between what is due in terms of care and what is actually provided. If the courts determine optimal levels of due care then it is true that the injurer and the victim will put in the due care. The reason is the same as before. Also we may say that the result under this rule is socially optimal. Like all other segments, multiple varieties of negligence law exist within this section. Simple negligence law is where the injurer pays all costs of the accident, regardless of precaution taken. On the other hand, the victim does not get compensated fully, implying that the victim is not able to take any extra unit of care. Thus, the victim should exert zero care since her marginal cost of care is zero, this care is optimal. Unquestionably, the outcome is not socially optimal and optimality condition is not met since the marginal benefit of raising the level of care is greater than the marginal cost borne by the victim. Contributory Negligence is the Defence of Strict Liability. Under this rule, the injurer is liable for the loss of accident victims unless the victim is in the due level of care is victim is in the sub due level of care. For this rule, we demonstrate that the outcome is socially optimal, given that the courts assign the level of care for victims to the socially optimal level of care. The rationale is the same as that for the various forms of the negligence rule. If in the case of the victim's

⁴ See **John F. Nash**, "Equilibrium Points in n-Person Games," *PNAS* (1950), defining a Nash equilibrium as a strategy pair in which each player's choice is the best response to the other.

negligence which is determined by their failure to take due care they will only bear a fraction of loss. The fraction in this case is relative to the level of care the victim did take as compared to the care which is reasonable. If the court choose the same level of optimal care equal to socially optimal level of care. The ratio is same as before.

❖ Conclusion

When it comes to AV accidents where the autonomous system is the primary cause, the strict liability framework is the most appropriate. From the victim's perspective, it guarantees them a reasonable chance of obtaining compensation without having to grapple issues of AI programming and the complexities of a manufacturer's internal protocol. It also provides a strong incentive to manufacturers, such as Volvo who has stated it will undertake full liability, to achieve the highest level of safety and quality control in their products which will lead to the more rapid and safer dissemination of AV technology.

