Why AI Liability should shift from fault-based theory to Enterprise Liability*
ทำไมในความรับผิดของปัญญาประดิษฐ์ถึงควรเปลี่ยนจากทฤษฎีความผิดเป็นทฤษฎีความรับผิดขององค์กร

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Abstract

Artificial Intelligence (AI) now plays a significant role in individuals' daily lives, resulting in legal challenges concerning liability for defects in AI systems. Due to AI's complex characteristics and its autonomy from human control, the application of fault-based liability, focusing on identifying a culpable individual, is no longer appropriate. Traditional fault-based theory requires the claimant to establish that harm was caused intentionally or negligently, emphasising the responsibility of the individual wrongdoer. This imposes an undue burden on the injured party, who must establish fault before the court, even though the technological complexity of AI makes it exceedingly difficult to demonstrate a clear causal link between the AI's conduct or decisions and the resulting damage. Accordingly, it is necessary to adopt the theory of enterprise liability, whereby manufacturers of AI systems are held liable for defects regardless of fault. Under this model, liability arises directly from the defective condition of the AI system itself. The burden on the injured party is limited to proving that the AI was defective and that the defect caused the harm. Enterprise liability focuses on the distribution of risk and

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the internalisation of production costs within the organisation. This approach enables manufacturers to anticipate and calculate the cost of potential harm in advance, allowing them to distribute the risk among stakeholders or consumers in the market, rather than bearing the entire burden alone. As such, enterprise liability imposes strict liability on manufacturers, which is a more suitable and effective legal framework for addressing harms caused by AI than traditional fault-based liability.

Keywords: AI, Artificial Intelligence, AI Liability, Fault-based Theory, Enterprise Liability

บทคัดย่อ

ปัญญาประดิษฐ์เข้ามามีบทบาทต่อการดำเนินชีวิตของบุคคลอย่างมาก ทำให้เกิดปัญหาความรับผิดจากความบกพร่องของปัญญาประดิษฐ์ จากคุณสมบัติเฉพาะที่มีความซับซ้อนและความเป็นอิสระจากการควบคุมของมนุษย์ ทำให้การใช้ทฤษฎีความผิดที่มุ่งหาตัวผู้กระทำผิดมารับผิดชอบต่อความบกพร่องของปัญญาประดิษฐ์นั้นไม่เหมาะสมอีกต่อไป เนื่องจากทฤษฎีความผิดมุ่งหาผู้กระทำความผิดโดยเจตนาหรือประมาท โดยมุ่งเน้นที่ตัวบุคคลผู้กระทำผิด ทำให้ผู้เสียหายไม่ได้รับความเป็นธรรม ต้องพิสูจน์ต่อศาลว่ามีการกระทำผิดโดยเจตนาหรือประมาทเกิดขึ้น ทั้งที่โดยคุณสมบัติของปัญญาประดิษฐ์นั้นมีความซับซ้อนทางเทคโนโลยี ผู้เสียหายไม่อาจพิสูจน์ความผิดหรือความเกี่ยวข้องระหว่างเหตุและผลของการกระทำและการตัดสินใจของปัญญาประดิษฐ์ได้โดยง่าย ด้วยเหตุนี้จึงจำเป็นต้องนำทฤษฎีความรับผิดขององค์กรมาใช้ เพื่อให้ผู้ผลิตปัญญาประดิษฐ์รับผิดต่อความบกพร่องของปัญญาประดิษฐ์แม้ไม่มีความผิดเกิดขึ้นก็ตาม โดยเป็นการรับผิดในความบกพร่องชำรุดของปัญญาประดิษฐ์โดยตรง ทั้งนี้ผู้เสียหายจะมีภาระการพิสูจน์เพียงว่าปัญญาประดิษฐ์นั้นมีความชำรุดบกพร่องและก่อให้เกิดความเสียหายต่อผู้เสียหายเท่านั้น ซึ่งหลักทฤษฎีความรับผิดขององค์กรมุ่งเน้นที่การกระจายความเสี่ยงและการคิดต้นทุนการผลิตภายในองค์กร หลักการนี้จะทำให้ผู้ผลิตสามารถคำนวณต้นทุนความเสียหายได้ล่วงหน้าและสามารถกระจายความเสี่ยงไปยังผู้มีส่วนได้เสียหรือผู้บริโภคในตลาด ไม่จำต้องแบกรับภาระของต้นทุนสินค้าและความเสียหายแต่เพียงผู้เดียว ความรับผิดขององค์กรจึงเป็นความรับผิดเด็ดขาดของผู้ผลิต ซึ่งมีความเหมาะสมกับปัญญาประดิษฐ์มากกว่าการใช้ทฤษฎีความผิดแบบดั้งเดิม

คำสำคัญ: เอไอ, ปัญญาประดิษฐ์, ทฤษฎีความผิด, ทฤษฎีความรับผิดขององค์กร, ความรับผิดของปัญญาประดิษฐ์

Introduction

Numerous elements of most people's lives utilise AI technologies, including search engines, video games, robotic assistance in the hospitality industry, robot-assisted surgery, autonomous vehicles, and software. People are particularly familiar with AI in everyday objects like laptops, smartphones, vacuum cleaners, and restaurant robot servers.[1] It can be said that the development of AI technology is ongoing, resulting in a wide array of AI products and services. This ongoing evolution creates challenges for legal systems that have never been encountered before. In this context, this article will present an example: determining liability for the harms resulting from AI usage and compensating victims when AI operates as a complex, opaque system that obscures the source of errors in its processes. When we are unable to identify the error in the AI process, how can we ascertain who will be liable for the fault?

The traditional view of fault tends to focus on individual blame. However, this conventional perspective fails to adequately address the complex nature of AI technology in the event of an accident. It is important to note that AI technology demonstrates advanced intelligence. Unlike simple machines, AI is more challenging to regulate due to its ability to autonomously generate outputs based on input data analysis, without requiring human involvement, and make decisions independently regarding task outcomes. Beckers and Teubner propose that AI's algorithmic autonomy gives rise to a new phenomenon termed 'active digital agency.'[2] This concept identifies the strength of AI, as it possesses greater autonomy; however, due to its strength, it becomes increasingly difficult to connect human decision-making to outcomes and to hold any specific individual accountable. This situation can create liability gaps in tort law because of the multiple stakeholders involved in the creation of an AI system. Numerous parties, including individuals or groups, contribute to the development of AI products or services. As a result, identifying the decision-maker responsible for accidents caused by these AI systems proves to be challenging.

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[1] Jonas Knetsch, "Are Existing Tort Theories Ready for AI?: A Continental European Perspective," in *The Cambridge Handbook of Artificial Intelligence: Global Perspectives on Law and Ethics*, eds. Cristina Poncibò and Michel Cannarsa Larry A DiMatteo (Cambridge University Press, 2022), 99.

[2] Anna Beckers and Gunther Teubner, *Three liability regimes for artificial intelligence: Algorithmic actants, hybrids, crowds* (Oxford, London, New York, New Delhi, Sydney: Hart Publishing, 2022), 92.

When discussions arise about who should be liable for the complexity of AI systems involving multiple stakeholders, it becomes increasingly difficult for consumers or specific victims to identify responsible parties. It seems more equitable to assign liability primarily to manufacturers, as creators and technical experts. This does not mean other actors are exempt from responsibility, but implementing strict liability in the form of enterprise liability for manufacturers can support consumer claims and simplify responsibility attribution. The essential aspect of enterprise liability for manufacturers is that the law does not enforce absolute liability; rather, under proportionality, claims can target specific actors.

Although it may not be necessary to identify one particular organisation to bear the costs, it is crucial to ensure that manufacturers are held liable for the defects of AI.

1. The Purpose of Tort Law: The transition from an individual's fault to enterprise liability

This section will initially explore the importance of tort law and its key role in the discussion at hand. This issue raises significant debate about liability and determining who should be held legally accountable.

Grey proposes that tort law encompasses the area of law concerned with private liability for interpersonal harm, particularly, though not exclusively, physical harm to individuals or property.[3] Grey's perspective draws on the importance of tort law and liability between individuals. Not only does he think this way, but Perry also indicates that tort law aims to establish legal liability for individuals who have interfered with the legally protected interests of others in specific manners.[4] Consequently, the wrongdoer may be obligated to compensate for the losses incurred by the affected parties as a result of their actions.[5] Perry's emphasis on compensation and victims' damages is noteworthy. From Perry's perspective, he argues that it is not enough to just focus on liability; the goal of tort law should focus on 'a compensation of victims.' The wrongdoer is the person who is responsible for his actions.

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[3] Christopher Berry Gray, *The philosophy of law: an encyclopedia* (Garland, 1999), 863.

[4] Stephen R. Perry, "Tort law," in *A Companion to Philosophy of Law and Legal Theory*, ed. Dennis M. Patterson (Blackwell, 1996), 64.

[5] Ibid.

Perry's perspective aligns with the fundamental principles of tort law, specifically liability and compensation; however, he continues to concentrate on a person who should be responsible for their actions. Weinrib shares this perspective, yet his view is more pragmatic regarding the compensation process necessary for achieving the goal of victim compensation.[6] He argues that it is crucial to allocate responsibility to individuals with adequate financial resources to manage it.[7] From Weinrib's perspective, identifying possible individuals liable for damages to the victim would strengthen the argument. This concept is essential, as tort law encompasses more than merely the interactions between private parties. Certain scholars, including Cane, contend that tort law functions as a mechanism for victim compensation and societal responsibility.[8] It addresses harm caused by wrongdoers, thereby benefiting both victims and society at large.[9] From this perspective, an individual should not be perceived as a potential entity responsible for sustaining such damage.

The issue of identifying the most appropriate entity to compensate for losses has emerged globally. Historical evidence indicates that some domains of tort law, like vicarious liability, rooted in the doctrine of respondeat superior, regulate this matter by attributing responsibility to the master for the misconduct of their slaves, a notion that evolved within the framework of enterprise liability.[10] This is apparent in the shift from individual accountability to business accountability. The Workmen's Compensation Act in the United States, initiated in the early 20th century, reformed the conventional fault-based approach of the common law system to safeguard injured workers amid rising industrialisation.[11]

Keating, a scholar who delves into enterprise liability across various literature, argues that individuals or entities that benefit from the imposition of risk ought to be responsible for the costs associated with accidents that accompany their profits.[12] His argument is consistent with the ideas put forth by other scholars of tort law that were

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[6] Ernest J Weinrib, *The Idea of Private Law* (Oxford University Press, 2013), 3.

[7] Ibid.

[8] Peter Cane, "Distributive justice and tort law," *New Zealand Law Review* 4 (2001): 403.

[9] Ibid.

[10] Rory Van Loo, "The Revival of Respondeat Superior and Expansion of Gatekeeper Liability," *Georgetown Law Journal* 109, no. 141 (2020): 150.

[11] Gregory C. Keating, "The Idea of Fairness in the Law of Enterprise Liability," *Michigan Law Review* 95, no. 5 (1997): 1360.

[12] Ibid., 1269.

discussed earlier. The existing liability frameworks do not align with the true centres of authority and profitability. The theory of risk-based arguments helps strengthen the argument. This theory centres on the concept of benefit and profits that an individual who endangers others to achieve a profit or benefit should be held accountable for the resulting harm.[13] This theory warrants examination from two distinct perspectives.

Initially, it emphasises economic profit, taking into account responsibility for defective products or industrial disturbances. Meanwhile, the second aspect emphasises that the risk-benefit analysis extends beyond mere financial gain, incorporating non-monetary benefits, such as the happiness derived from having pets.[14] The internal logic of this theory clearly indicates that the system of tort law ought to concentrate on the accountability of the individual who stands to gain the most from such risks. In the realm of modernisation, manufacturers emerge as the most viable choice.

The evolution of legal doctrine during industrialisation marks a shift from a fault-based theory centred on individual responsibility to a framework of product liability that emphasises the accountability of manufacturers, enterprise liability. The manufacturer is the entity that derives advantages from social activities through the sale of their products. The notion of product liability has emerged across different jurisdictions when the new technology arrives to make its presence known once more.

AI technology has emerged as a pivotal force in the global landscape today. The complex issue arises regarding how tort law will adapt to this type of technology. From the author's legal perspective, supported by scholars and historical facts, it is clear that traditional tort law with a fault-based theory is inadequate in addressing the new wave of technology. Consequently, product liability in enterprise liability is poised to become the dominant framework in tort law, supplanting the fault-based approach.

2. Fault-Based Liability: Limits in the AI Context

2.1 A Fault-Based Liability

This section will provide a thorough examination of the legal philosophy that supports the fault-based theory. The concept in question relates to the philosophy of corrective justice. In the following discussion, this article will examine the rationale for discarding the fault-based theory in the context of AI, grounded in the principles of tort law.

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[13] Marco Cappelletti, *Justifying Strict Liability: A Comparative Analysis in Legal Reasoning* (Oxford University Press, 2022), 81.

[14] Ibid., 81-82.

It is universally accepted that corrective justice represents a bilateral relationship, establishing the basis of tort law according to Aristotle's ideals- a viewpoint supported by Beever, who argues that corrective justice promotes fairness in interpersonal interactions. From Beever's standpoint, corrective justice aligns with the concept of bipolar justice in a fault-based framework.[15] Tilley's argument reinforces this by indicating that bilaterality is crucial in both intentional torts and torts of negligence,[16] as it maintains a balance of individual interests.

The fault-based theory has dominated tort law since its inception. Rooted in the philosophy of corrective justice, which focuses on bilateral relationships, it underscores the relationships between individuals. The European Parliamentary Research Service describes it as a framework demanding evidence of harm by concentrating on the liable party's fault and the connection between that fault and the damage.[17] In instances involving intentional torts, it is imperative for the claimant to establish the defendant's intent within the pertinent context. Similarly, in negligence claims, the claimant is responsible for demonstrating the defendant's duty of care as outlined by common law or the appropriate standard of care under civil law. This indicates that, irrespective of the various interpretations existing within legal frameworks, the claimant inevitably bears the burden of proof. This approach leads to ambiguity in situations where intricate technologies, such as AI, pose challenges in the cases being examined. Consequently, the burden of proof concerning fault will increasingly rest upon the claimant.

2.2 A Fault-Based Liability Applying with AI

The scholars previously referenced demonstrate that fault-based liability is grounded in the principle of corrective justice. This principle seeks to restore an equilibrium between the parties involved by recognising and addressing wrongful actions. It assumes a direct causal link between a claimant's harm and an individual's fault.

However, a fault-based theory relies heavily on a contested fault by a claimant; AI systems complicate fault-based liability by adding layers of complexity, autonomy, and opacity that obscure human fault. This example illustrates the potential for AI products to create confusion among humans.

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[15] Allan Beever, "Corrective Justice and Personal Responsibility in Tort Law," *Oxford Journal of Legal Studies* 28, no. 3 (2008): 476-477.

[16] Cristina Tilley, "Just Strict Liability," *Cardozo Law Review* 2022-23 (2022): 2354.

[17] Tambiama Madiega, "Briefing EU Legislation in Progress: New Product Liability Directive," accessed 19 May 2025, https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/739341/EPRS_BRI(2023)739341_EN.pdf.

In the following example, a scenario will be presented that illustrates the complex issue between machines and humans.

For many years, vehicles have been developed with systems and technologies that assist drivers, such as power steering, cruise control, adaptive cruise control, electronic stability control (ESC), and anti-lock braking systems (ABS). As automated driving systems assume more driving responsibilities, human error may no longer be the primary cause of accidents; instead, flaws in these systems could be to blame.[18]

The main issue revolves around how to determine liability in the event of an accident, specifically whether it was caused by a human driver or an automated system. The filing of a negligence lawsuit by a victim against either the driver or the manufacturer constitutes a fault-based argument. The claimant is charged with establishing whether a duty of care exists on the part of the manufacturer or the human driver. In the context of fault-based theory within common law jurisdictions, it is essential for the claimant to demonstrate the manufacturer's duty of care. This necessitates a thorough examination of the technical and scientific knowledge that was accessible during the vehicle's production and distribution phases. A significant inquiry emerges: how can an accident victim or user exhibit this technical and scientific proficiency in the absence of expert support? It is essential to acknowledge that the company is deepening its knowledge of autonomous vehicles. The manufacturer clearly demonstrates a profound understanding of customer insights, indicating that a fault-based approach may be inadequate for effectively addressing AI liability.

3. What is Enterprise Liability?

The concept of enterprise liability has emerged in modern society, as Holmes suggested that the law evolves through the logic of experience, rather than abstract reasoning.[19] When technology advances and industrial activities generate profits or benefits for manufacturers, their responsibility expands to include both their activities and their products. This analysis indicates that a fault-based theory is inadequate for addressing liability in the context of AI, considering the technology's novelty. Nonetheless, there exists a scholarly discourse regarding the necessity for a novel theoretical framework to address the complexities of AI liability.

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[18] Owen Hayford, "Self-driving cars: Who's liable when the car is driving itself?," accessed 10 June 2023, https://www5.austlii.edu.au/au/journals/PrecedentAULA/2017/21.html.

[19] Oliver Wendell Holmes, *The Common Law* (Clark, New Jersey: The Lawbook Exchange, Ltd., 2005), 82.

3.1 The Enterprise Liability and Distributive Justice: What is the philosophy behind it?

Distributive justice provides the philosophical foundation of enterprise liability by framing liability not as a matter of bilateral fairness, but as a question of how benefits and burdens should be shared across society. Aristotle first articulated distributive justice as the apportionment of goods in proportion to need and merit, embedding it within the very idea of a just political community.[20] Modern accounts extend this principle to the distribution of risks and responsibilities. Fleischacker, for example, argues that distributive justice entails a moral obligation of the state to intervene in markets, ensuring that property and rights are not left solely to the domain of private exchange.[21] In this view, tort law cannot be confined to interactions between individuals but must also reflect society's responsibility to allocate burdens fairly.

Judicial and scholarly perspectives reinforce this broader orientation. Steyn's reasoning demonstrates that distributive concerns are embedded in judicial practice, where judges balance the positions of claimants and defendants to prevent unjust outcomes.[22] Steyn's perspective converges with Sheinman's functionalist view that tort law's primary purpose is preventative rather than remedial.[23] Both highlight that law should not only rectify past wrongs but also proactively allocate risks and burdens in ways that protect social welfare. These accounts illustrate that distributive justice is not an external addon to tort law but an internal principle that shapes its evolution.

Steyn's concept is significant and views tort law as a system, where both corrective justice and distributive justice are fundamental elements and central concepts in tort law. Nevertheless, when applying these principles to specific cases, it is vital to select the system that is most effective and reliable. This argument aims to demonstrate that the philosophy of distributive justice, which serves as the foundation for enterprise liability, has a well-established history within the legal domain. Nevertheless, it encounters difficulties in affirming its significance in light of the dominant paradigms of corrective justice and fault-based theory, a condition that continues until societal transformations take place, as noted by Holmes.[24] While contemporary technology

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[20] Samuel Fleischacker, *A Short History of Distributive Justice* (Harvard University Press, 2004), 1-2.

[21] Ibid., 4-5.

[22] Lord Steyn, "Perspectives of Corrective and Distributive Justice in Tort Law," *Irish Jurist* 37 (2002): 5-6.

[23] Hanoch Sheinman, "Tort Law and Corrective Justice," *Law and Philosophy* 22, no. 1 (2003): 30-32.

[24] Oliver Wendell Holmes, *The Common Law*, 3.

generates conflicts that the current framework of corrective justice and fault-based theory fails to address, alternative perspectives persist in applying traditional theories.

Enterprise liability exemplifies this distributive philosophy in practice. While Calabresi, Rabin and Keating are often cited for their doctrinal contributions, their arguments also express a distributive logic: Calabresi's insistence on spreading costs,[25] Rabin's focus on safety enhancement,[26] and Keating's fairnessbased requirement that enterprises internalise risks all illustrate the law's commitment to allocating burdens to those best placed to bear them.[27] Their accounts collectively demonstrate how distributive justice underpins enterprise liability, moving tort law beyond individual fault and towards systemic responsibility.

For these reasons, distributive justice must serve as the philosophical foundation of enterprise liability in AI liability. By reallocating risks to manufacturers and enterprises that profit from AI technologies, distributive justice ensures both fairness and efficiency. It also bridges the gap left by corrective justice, enabling tort law to respond to the systemic and futureoriented risks that characterise intelligent technologies.

3.2 The Definition of Enterprise Liability

The definition of enterprise liability is sometimes not explicitly defined. Cain argues that it can be clearer when related to strict liability, vicarious liability, and loss spreading.[28] These ideas are central to understanding how tort law allocates responsibility and costs, often reflecting principles that go beyond individual fault.

Cain not only suggests vicarious liability as a form of strict liability, but also presents product liability under statutes like the Consumer Protection Act 1987 of the UK as a type of strict liability for defective products.[29] He argues that it is a hybrid of relationship-based and outcome-based strict liability. This implicitly places the burden on the manufacturer or, often, a commercial enterprise for harms caused by their products, regardless of fault in the traditional sense.[30]

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[25] Rabin L. Robert., "Some Thoughts on the Ideology of Enterprise Liability," *Maryland Law Review* 55, no. 4 (1996): 1204.

[26] Ibid.

[27] Gregory C. Keating, "The Idea of Fairness in the Law of Enterprise Liability," 1270.

[28] Peter Cane, *The Anatomy of Tort Law* (Oxford: Hart Publishing, 1997), 46.

[29] Ibid., 48-49.

[30] Ibid.

In Cain's arguments, he mentions strict liability but does not address it directly. Keating, however, is among the scholars who discuss enterprise liability explicitly. He also agrees that enterprise liability constitutes a form of strict liability.[31] It tends to encourage a more effective and widespread reduction of risks, while also distributing the costs of realised risks more evenly.[32] From his perspective, this is particularly true when sufficient liability insurance markets are available for participants. It spreads the costs of non-negligent accidents among all parties who benefit from participating in large-scale, systematically organised risky activities.[33]

Different types of enterprise liability vary depending on the specific issue; in this article, the focus will be solely on product liability, as discussed above by Cain and Keating. Therefore, future discussions will be confined to product liability law.

3.3 Enterprise Liability and Its Core

At the early stage of the development of enterprise liability, Rabin believed that product liability was a significant indicator of enterprise liability. He believes that society continues to change from a corrective justice philosophy.[34] This is important because existing fault-based theory leaves significant legal gaps. The supporting idea can be seen from the views of Cappelletti and Keating that the concept of enterprise liability involves distributing the costs of accidents among those who benefit from taking on such risks. It is evident that society has shifted from a corrective to a distributive justice, where the rule of society aims to establish a new paradigm of liability for individuals within it.

Enterprise liability creates fairness among parties because it does not require consumers to prove that manufacturers or producers have caused them harm. Consumers only need to demonstrate that manufacturers create risks or gain benefits or profits from their activities, which is sufficient evidence to hold manufacturers accountable for compensating consumers for such harm. Meanwhile, manufacturers have a responsibility as individuals who create risks and gain profits. When they benefit from selling their products, it is fair to require them to be responsible for their products' defects. This is called the principle of no-fault liability.

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[31] Gregory C. Keating, "A Social Contract Conception of the Tort Law of Accidents," in *Philosophy and the Law of Torts*, ed. Gerald J. Postema, Cambridge Studies in Philosophy and Law (Cambridge: Cambridge University Press, 2001), 30.

[32] Ibid., 41.

[33] Ibid., 39.

[34] Rabin L. Robert., "Some Thoughts on the Ideology of Enterprise Liability," 1204.

For the factors of the enterprise liability. Rabin is the scholar who, through his research, confirmed that the standpoint of enterprise liability, in the form of product liability, involves risk spreading and safety enhancement. He commented that these two components represent the ideology of enterprise liability.[35] The conceptual basis of this argument is similar to what Calabresi refers to as enterprise liability in his work. He defines enterprise liability as 'places losses on people who are most likely to insure and places losses on those who are in a position to pass part of the loss on to purchasers of their products or to factors employed in the production of their products.'[36] The discourse of Calabresi became a universal agreement. Under this system, it is pivotal to distribute risks—the costs of accidents—to other actors, such as purchasers of products; this is known as loss allocation or spreading loss to consumers.[37]

Priest is another significant scholar in enterprise liability; he also states that enterprise liability applies when a business is held responsible for damages resulting from the products it places on the market. He believes that the theory addresses the relationship between manufacturers and consumers.[38] His idea is that enterprise liability, like product liability, can prevent losses. It plays a role in internalising costs to influence accident levels. It represents the most efficient method for allocating the remaining risks of loss.[39]

From the scholars' perspective, the conceptual basis of enterprise liability is developed. It is acceptable that enterprise liability concludes with three factors. The first is no-fault liability. The second is cost internalisation, which induces an appropriate level of accident prevention.[40] If manufacturers are held liable for their defective products without fault, it ensures that they will implement the most effective solutions to prevent harm from their products. The third benefit is the distribution of risk, as manufacturers can add a small price to their products to spread the costs of accidents, meaning that many people bear the cost of accidents.[41]

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[35] Ibid.

[36] Guido Calabresi, *The Cost of Accidents: A Legal and Economic Analysis* (New Haven, United States: Yale University Press, 1970), 50-51.

[37] Ibid.

[38] George L. Priest, "The Invention of Enterprise Liability: A Critical History of the Intellectual Foundations of Modern Tort Law," *Journal of Legal Studies* 14, no. 3 (1985): 463.

[39] Ibid.

[40] Gregory C. Keating, "Enterprise Liability: Collective Responsibility and Commutative Justice," in *Reasonableness and Risk: Right and Responsibility in the Law of Torts* (Oxford University Press, 2022), 273.

[41] Ibid.

It is significant that no-fault liability, internalisation and risk distribution can be seen as the core idea of enterprise liability

4. What is AI?

In previous sections, both fault-based theory and enterprise liability were discussed, along with the philosophy behind them. In the following section, a thorough analysis of AI will be provided, including the reasons why fault-based theory cannot be applied to it, based on the characteristics and harm that AI can cause.

4.1 Definitions of AI: Why should we discuss this specifically?

The main point this article wishes to highlight is the significance of grasping the idea of AI. It seems that many individuals frequently use this term in everyday discussions without fully comprehending its true meaning. The response indicates that understanding AI definitions requires a specific comprehension of its capabilities and the different classifications involved. Individuals frequently envision AI as a cyborg or a menacing robot, akin to representations found in science fiction films. However, this article shall clarify these misconceptions and establish a precise comprehension of what AI genuinely constitutes in reality.

Over time, numerous interpretations of AI have emerged. Academics uphold distinct definitions, while contemporary perspectives on AI are shaped by technological advancements and individual viewpoints. The concept of AI is articulated with clarity, presenting a range of interpretations for its recognition. While it may not be feasible to encompass every definition, this article has selected several noteworthy interpretations to enhance understanding.

According to Calo, he argues that there is no straightforward, consensus definition of AI because AI is best understood as a set of techniques aimed at approximating some aspects of human or animal cognition using machines.[42] Calo presents a typical perspective on AI by aligning it with the cognitive abilities of both humans and animals. His definition lacks a specific term or any characteristic of AI. In contrast to Dignum, who emphasises the intent behind AI, defining it as a system that processes information to achieve a specific goal.[43] In this definition, AI is a tool to process meaningful work.

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[42] Ryan Calo, "Artificial Intelligence Policy: A Primer and Roadmap," *University of California, Davis, Law Review* 51 (2017): 404.

[43] Virginia Dignum, *Responsible Artificial Intelligence How to Develop and Use AI in a Responsible Way* (Springer, 2019), 9.

Whereas in the classic Proposal for the *Dartmouth Summer Research Project on Artificial Intelligence*, the founding document that established the field of AI in 1995,[44] McCarthy, Minsky, Rochester, and Shannon emphasise a more compelling explanation that the AI problem is taken to be that of making a machine behave in ways that would be called intelligent if a human were so behaving.[45] This definition offers a clearer understanding of AI and the appropriate methods for its development. They assess AI as a machine possessing human-like intelligence. This perspective, while commonly embraced, is facing growing scrutiny in the realm of AI technology. Bostrom, a leading expert in AI, aligns with the prevailing view on the current state of AI. He asserts that AI is advancing towards achieving human-level intelligence. It is indeed accurate to say that we are approaching a point where our computing power will be adequate to replicate the evolutionary processes that give rise to human intelligence.[46]

The definitions of AI exhibit notable similarities, highlighting that AI serves as an efficient and exceptionally capable tool. Although AI researchers assert that their objective is to develop AI with human-level intelligence, this notion raises questions about the complexity of AI, which may ultimately surpass human understanding. The prospects for AI to develop in the future are noteworthy. This notion represents a core fundamental principle of AI that is broadly acknowledged by specialists, and in discussions about AI, we refer to modern technologies that exemplify these qualities.

4.2 Types of AI: Does it exist?

The following question is whether a hierarchy of capabilities exists within AI. When we discuss AI, numerous types are present in daily life, such as smartwatches, self-driving cars, AI chatbots, and robots. This raises the debate about whether we should categorise AI as a specific type for control. In light of these arguments, this article recommends a classification of AI in the academic realm. This knowledge is important because it can help researchers focus on the current state of AI technology.

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[44] Ibid.

[45] John McCarthy et al., "A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence: August 31, 1955," *AI Magazine* 27, no. 4 (2006): 11.

[46] Nick Bostrom, *Superintelligence: Paths, Dangers, Strategies* (United Kingdom: Oxford University Press, 2014), 29.

Calo,[47] Dignum[48] or Tegmark[49] indicates that in this milestone, AI may be classified into two primary categories: AGI and ANI. Numerous justifications exist for the legal distinction between AGI and ANI. Tegmark, a physicist and machine learning researcher, asserts that AGI is the objective that scientists globally value.[50] Nonetheless, he believes that this form of AI is an ambition of utopians and may not be realised easily.[51]

The notion of AI is unambiguous: all instances of AI encountered in our everyday lives pertain to ANI, or narrow AI. We shall remain cautious against being misled by information in discussions concerning AI within the realm of science fiction. It is broadly recognised that AGI may materialise at an unspecified time in the future. It is not currently taking place. The present academic discourse is solely concentrated on ANI.

In conclusion, at present, human capabilities are limited to the production of a second category known as ANI, or 'Narrow AI,' often referred to as 'Weak AI.'[52] In actuality, the term 'Weak' is a misnomer, as humans employ such AI technologies in their daily lives; for instance, in applications such as speech recognition, natural language processing, machine learning, facial recognition, and robotics.[53] Self-driving cars are primarily focused on the task of driving and are not engineered for a variety of functions, categorising them as Artificial Narrow Intelligence (ANI). AI chatbots are designed to engage in communication with users. While these systems are capable of addressing a range of enquiries, their responses are limited to screen displays, thereby categorising them as Artificial Narrow Intelligence (ANI).

4.3 Fundamental characteristics of AI: Why do we have to understand them?

Understanding the potential impact of AI liability on legal accountability necessitates a comprehensive understanding of AI's operational mechanisms and distinct

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[47] Ryan Calo, "Artificial Intelligence Policy: A Primer and Roadmap," 405.

[48] Virginia Dignum, *Responsible Artificial Intelligence How to Develop and Use AI in a Responsible Way*, 12.

[49] Max Tegmark, *Life 3.0 Being Human in the Age of Artificial Intelligence* (Great Britain: Penguin Books, 2017), 43.

[50] Ibid.

[51] Ibid.

[52] Adam Riccoboni, *THE AI AGE* (Critical Future Publishing, 2020), 93.

[53] Ibid.

characteristics, which diverge from those of conventional technology. This article posits that a fault-based theory is considered "inappropriate" for AI liability. The term "inappropriate" is employed here to underscore the notion that AI's characteristics markedly differ from traditional products within the conventional framework. This article maintains that these characteristics are essential factors in discussions surrounding AI liability among legal academics. This section will address these challenges by delineating core principles of AI, which will subsequently inform the ensuing debate regarding the harms associated with AI in the following section.

What are the main characteristics of AI?

There are some connections between different academics. For example, the EU AI High-Level Expert Group Report determines that the key concepts of AI are complexity, opacity, openness, autonomy, predictability, data-drivenness, and vulnerability.[54] Meanwhile, Buiten, Streel, and Peitz suggest that AI's unique characteristics include complexity, opaqueness, and autonomy.[55] In contrast, Dignum proposes that AI characteristics include autonomy, adaptability, and interactivity.[56] It is evident that a consensus and agreement regarding the primary characteristics are particularly absent. Nevertheless, a common perspective within the academic discussion, as defined by various scholars, proposes that the characteristics of AI encompass complexity, opacity, and autonomy. Additional elements may be integrated into these three characteristics.

All three are features of AI, so in this article, we will clarify and examine them here.

4.3.1 Complexity

To begin with, the complexities of AI involve a variety of stakeholders engaged in the development of AI software. This includes various programs that may be interconnected with a single hardware component,[57] exemplified by self-driving vehicles.

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[54] The Expert Group on Liability and New Technologies, "LIABILITY FOR ARTIFICIAL INTELLIGENCE AND OTHER EMERGING DIGITAL TECHNOLOGIES (European Commission, 2019)," p.32, accessed 27 October 2024, https://www.europarl.europa.eu/meetdocs/2014_2019/plmrep/COMMITTEES/JURI/DV/2020/01-09/AI-report_EN.pdf.

[55] Miriam Buiten, Alexandre de Streel, and Martin Peitz, "The law and economics of AI liability," *Computer Law & Security Review* 48 (2023): 5.

[56] Virginia Dignum, *Responsible Artificial Intelligence How to Develop and Use AI in a Responsible Way*, 17.

[57] Miriam Buiten, Alexandre de Streel, and Martin Peitz, "The law and economics of AI liability," 6.

Self-driving vehicles engage with an array of hardware and software systems, encompassing road infrastructure and diverse cloud services. The determination of the cause of an incident following an accident presents significant challenges.[58] This results in complicated challenges when AI systems experience malfunctions, which will be examined in the following sections.

4.3.2 Opacity

The subsequent concern relates to the opacity and lack of transparency inherent in the operation of an AI system. The phenomenon may be attributed to advancements in AI technology, particularly in the realm of machine learning. Consequently, predicting the outcome becomes more challenging.[59] The report from the EU AI High-Level Expert Group suggests that the functionality of AI will transcend straightforward comprehension as mere code, evolving instead into a complex black box phenomenon. At this juncture, it does not imply that it will transcend human comprehension; however, the incomprehensibility of certain outputs complicates matters for both parties involved in the lawsuit,[60] especially for the party responsible for bearing the burden of proof in the litigation. Throughout the litigation process, there will be a greater pressure on the party responsible for the burden of proof to demonstrate the fault of the opposing party. This scenario is particularly troubling for consumers who do not fully understand the AI process.

4.3.3 Autonomy

The final characteristic is autonomy, which appears to be the most significant concern, as the autonomy of AI highlights the accountability of its manufacturers. If manufacturers are unable to anticipate the decisions or outcomes generated by AI, what basis exists for holding them accountable for those actions or results?

In a fault-based system, it is clear that individuals are accountable for their own actions. This principle is distinctly articulated within the realm of tort law, particularly in relation to the tort of negligence. The autonomy of AI prompts an

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[58] The Expert Group on Liability and New Technologies, "LIABILITY FOR ARTIFICIAL INTELLIGENCE AND OTHER EMERGING DIGITAL TECHNOLOGIES (European Commission, 2019)," 33.

[59] Miriam Buiten, Alexandre de Streel, and Martin Peitz, "The law and economics of AI liability," 6.

[60] The Expert Group on Liability and New Technologies, "LIABILITY FOR ARTIFICIAL INTELLIGENCE AND OTHER EMERGING DIGITAL TECHNOLOGIES (European Commission, 2019)," 3.

examination of whether it possesses inherent faults or merely mirrors the intentions and limitations of its creators. In actuality, AI does not qualify as either a human or a legal entity, thereby rendering it clear that AI cannot be attributed with faults. Accountability for the actions of AI necessitates the attribution of liability to a human or another entity. The ensuing technical challenges pertain to the mechanisms through which victims may recognise such individuals.

The subsequent focus relates to the legal procedure involved in the presentation of evidence during court hearings. In the lack of substantiating evidence that attributes responsibility for the AI's error to the manufacturer, consumers encounter significant difficulties in ascertaining accountability. It may be the case that manufacturers bear no responsibility for this error. This outcome presents complexities that result in inequitable legal proceedings regarding the burden of proof. This illustrates the operational framework of a fault-based theory within the context of litigation.

At this point, it would have been more useful to analyse how AI can enable autonomous decision-making,[61] and how machine learning can allow the AI system to make decisions independently.

4.4 What is Machine Learning? How can it produce unfair results in litigation?

Regarding machine learning, it can be explained in simpler terms as a method of data analysis that automates analytical model building. It uses algorithms to identify patterns in data and then attempts to generate the output.[62] This means that AI with machine learning employs data for analysis, but data alone is not useful. Machine learning can analyse patterns in data through algorithms, and these patterns can be used to make predictions.[63] Dignum offers a valuable perspective that the role of machine learning is to train AI until it can produce output without human intervention, making it autonomous.[64] It compares AI to mere machines, whose capabilities or intelligence can be predicted when they enter the market, but the final capabilities of AI cannot be anticipated due to machine learning. This milestone highlights that the definitions of

[61] Miriam Buiten, Alexandre de Streel, and Martin Peitz, "The law and economics of AI liability," 6.

[62] Adam Riccoboni, *THE AI AGE*, 93.

[63] Ibid., 94.

[64] Virginia Dignum, *Responsible Artificial Intelligence How to Develop and Use AI in a Responsible Way*, 23.

machine learning indicate the limitations of human ability to foresee all decisions made by AI.[65] This perspective, while widely accepted, is increasingly challenged by technicians. In contemporary society, a diverse array of products and services employs machine learning technologies. These include facial recognition systems, video recommendation algorithms, search engine functionalities, customer service solutions, email spam filters, malware detection alerts, virtual personal assistants, and systems designed for crime and fraud detection, in addition to applications in medical diagnosis.[66]

Is it feasible to envision a scenario where a machine learning system produces unpredictable results in AI products or services, while consumers are still required to provide evidence for their claims? This situation is likely to lead to an inequitable outcome.

5. Adverse Effects of Artificial Intelligence

5.1 AI's harm: How can AI harm humans?

It is now widely recognised that AI presents distinct characteristics that distinguish it from traditional technology. The investigation now focuses on the ways in which these characteristics may inflict particular harm and negative consequences on human beings. The intricate framework of AI encompasses elements of complexity, opacity, and autonomy. The issues may originate from them, and what implications do they hold for us as human users?

The European Commission suggests that problems can arise in four ways.[67]

5.1.1 Malfunction

First, the AI may have malfunctioned. Nevertheless, the manifestation of a malfunction can differ from that of other technologies. For instance, AI may function as designed; however, it can produce unintended consequences due to its self-learning capabilities and its ability to adjust its behaviour to new obstacles. It is sometimes

[65] It can be argued that humans cannot easily intuit how AI has come to a decision, but we might be able to design AI systems in such a way that we can interpret. However, in this article, I will not focus on this argument.

[66] Adam Riccoboni, *THE AI AGE*, 95.

[67] Ernst Karner, Bernhard Koch, and Mark Geistfeld, *Comparative law study on civil liability for artificial intelligence* (Publications Office, 2021), 23.

unpredictable, making it challenging to associate adverse results with human wrongdoing.[68] In summary, it is a separate point that the AI is working as it should but has the capacity to develop emergent behaviour outside of human control, or at least without human intervention. More specifically, misconduct may involve the flawed initial design of the algorithm and/or its interplay with sensors or external data, or the failure to pre-define boundaries for the self-development of the AI system.[69]

An instance of AI misconduct attributable to the design of the algorithm, as well as its sensors or external data, was observed in 2022. During a chess tournament, an incident occurred in which an AI robot engaged in competition with a child, resulting in the robot seizing and subsequently fracturing the child's finger amidst the match. The incident occurred as a result of the child's rapid movement following the robot's turn, which did not allow the robot sufficient time to respond or process the action effectively.[70] If AI robots are considered regular products, it is essential to investigate whether the issues arise from manufacturing defects or design defects. Furthermore, in this context, it is crucial to revisit the notion of how the machine learning process governs the movements of these robots. The action must be understood in the context of machine learning systems, which affect the movement of AI robots.

5.1.2 Hardware

The next concern relates to the relationship between AI and hardware. The potential for AI to inflict harm arises from inherent flaws within the hardware or its features, which may subsequently result in malfunctions of the AI system itself.[71] Identifying the specific aspect that is detrimental to a user presents a considerable challenge. For example, once the software is integrated into the television, it may prove challenging to ascertain which specific component is responsible for the issues encountered.

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[68] Ibid.

[69] Ibid., 23-24.

[70] AI Gone Wrong, "Hilarious & Horrifying Artificial Intelligence Fails," accessed 31 May 2024, https://www.privateinternetaccess.com/blog/ai-gone-wrong/#:~:text=In%202022%2C%20an%20AI%20robot,respond%20or%20process%20the%20action.

[71] Ernst Karner, Bernhard Koch, and Mark Geistfeld, *Comparative law study on civil liability for artificial intelligence*, 24.

5.1.3 Bias

Thirdly, the functioning of AI is subject to the influence of human actions, encompassing users, content providers, manufacturers, producers of software or hardware components, and various third parties. The significance of this lies in the fact that an increased number of participants enhances the impact on the final 'behaviour' of the AI system.[72]

This situation arises when developers determine the weighting of specific data points or negotiate the trade-offs inherent in their decisions. For instance, the application of the AI technique referred to as the Harm Assessment Risk technique (HART) enabled Durham Constabulary to assess more than 12,000 individuals from 2016 to 2021. The process of detaining an individual on suspicion of criminal activity involves an AI system that assesses the likelihood of future offences. This assessment categorises the individual into high, medium, or low risk classifications, which subsequently informs the decision to either pursue charges or enrol them in a Checkpoint rehabilitation programme. Consequently, individuals classified as being at 'medium' risk may participate in the Checkpoint rehabilitation programme, and upon successful completion, they would be exempt from facing charges or legal repercussions. Individuals classified as being at 'high' risk, however, did not meet the criteria for prosecution diversion. The design of the tool was deliberately oriented towards assigning greater significance to outputs that indicate an individual is classified as high risk, thereby preventing the release on bail of those categorised as 'high-risk' arrestees.[73]

This system demonstrates a wider trend in the application of AI within the field of criminal justice. It presents a significant approach to utilising AI for risk assessment; however, it is potentially constrained by the biases inherent in the individuals involved in the data set compilation for the AI.[74] Scholars argue that there is a potential for biased output that could lead to discriminatory outcomes. Algorithms are developed using historical data, which may reflect existing biases in policing decisions, social trends, and priorities. This may result in the potential continuation or intensification

[72] Ibid.

[73] Fair trials, "FOI reveals over 12,000 people profiled by flawed Durham police predictive AI tool," accessed 15 April 2024, https://www.fairtrials.org/articles/news/foi-reveals-over-12000-people-profiled-by-flawed-durham-police-predictive-ai-tool/.

[74] Marion Oswald et al., "Algorithmic risk assessment policing models: lessons from the Durham HART model and 'Experimental' proportionality," *Information & Communications Technology Law* 27, no. 2 (2018): 234.

of established patterns of criminal behaviour. The use of postcode as a predictive factor introduces the possibility of a feedback loop that may intensify existing patterns of offending behaviour.[75] It may prove impractical to concurrently fulfil various interpretations of fairness.[76] Data analysts should strive to recognise and address biases inherent in existing datasets. The argument regarding the risk assessment of HART clearly emphasises the bias that exists in the individuals who input the data.[77] While technological advancements may occur, human influence on data remains significant.

5.1.4 Interaction with other technologies

Finally, the implementation of AI systems often interacts with other technologies. This complicates the identification of the ultimate causes of the victim's harm, as there may be multiple contributing factors.[78] Reframing the issue through the lens of professionalism offers a clearer understanding of the real problem. Terranova, Cestonaro, Fava, and Cinquetti illustrated that AI in healthcare collaborates effectively with medical practitioners. This type of AI utilises extensive data analytics to facilitate the rapid and precise identification of diseases, expedite and enhance medication research, and monitor patients through virtual nursing assistants. Moreover, it integrates with various technologies, including human determination and other diagnostic instruments.[79]

Additional instances can be identified across a range of technologies; for example, AI-driven transport systems, including self-driving cars, rely on additional AI travel planners and traffic management systems. This highlights the potential of a single event concerning AI to engage a wide range of participants. This framework relies heavily on the contentious collaboration among diverse technologies, encompassing both the practitioner and the AI tool. The error may arise in a multitude of contexts, and at times, it becomes difficult to identify the party accountable for it.

Among the many challenges posed by AI, evidence indicates that upcoming issues will be more intricate than those we faced with simple machines. Utilising a fault-based approach to assess the intent or negligence of manufacturers is not

[75] Ibid., 228.

[76] Ibid., 231-232.

[77] Ibid., 241-242.

[78] Fair trials, "FOI reveals over 12,000 people profiled by flawed Durham police predictive AI tool."

[79] Claudio Terranova et al., "AI and professional liability assessment in healthcare. A revolution in legal medicine?," accessed 31 May 2024, https://doi.org/10.3389/fmed.2023.1337335.

suitable. This underscores the need for enterprise liability. The next section will summarise the shortcomings of the fault-based theory.

5.2 How does AI create legal gaps within a traditional fault-based framework?

This section examines the ways in which AI may contribute to the emergence of gaps within the framework of traditional fault-based liability. This viewpoint arises from a legal framework that emphasises a fault-based theory rather than enterprise liability. Buiten, Streel, and Peitz provide a valuable analysis regarding the challenges of adapting AI liability to contemporary tort law; however, their emphasis on economic theory may constrain the breadth of their argument.[80]

5.2.1 To Establish a Fault

The central assertion regarding the determination of fault is that this matter holds significance across all jurisdictions, especially in relation to the tort of negligence. In instances where a claimant is required to establish a breach of the duty of care, which strategies can be employed to achieve this when AI functions independently via machine learning?[81] Furthermore, the process of determining fault and allocating responsibility among the involved parties can present significant complexities. Given the multifaceted nature of AI development involving numerous stakeholders, the question arises regarding the determination of liability when manufacturers introduce AI products and other entities supply complementary software. This complexity necessitates a thorough examination of the legal frameworks and accountability mechanisms in place. Furthermore, the question arises as to who bears responsibility for incidents involving AI when multiple stakeholders are involved.

5.2.2 Causality

Secondly, one might reasonably ask whether it is possible to prove causality. The intricate and often opaque nature of AI renders the demonstration of a causal link between an action and its subsequent outcomes a challenging endeavour.[82] An AI chatbot, for instance, can be trained to produce independent outputs that

[80] Miriam Buiten, Alexandre de Streel, and Martin Peitz, “The law and economics of AI liability,” 7.

[81] Ibid., 7-8.

[82] Ibid., 8.

developers might not anticipate. In what manner can a claimant demonstrate the causal relationship among the data sets, the training methods employed by the developers, and the resultant outcomes of the AI chatbots? The absence of transparency in AI products or services results in a scenario where the outcomes are left unaccounted for. This situation presents challenges when consumers lack the requisite expertise to analyse the source code and understand the algorithmic foundations of AI; how can they establish causality in legal proceedings?

5.2.3 Types of Damage

Thirdly, it is essential to examine whether tort law adequately acknowledges the various forms of damage attributable to AI.[83] The applicability of tort laws to all harm caused by AI tools in the jurisdictions under review remains uncertain. For example, in the context of product liability, the definition of 'products' may not include all varieties of products or services, especially certain forms of AI, such as chatbots. This concern initiated a series of discussions regarding the legal definition of software.

In light of the challenges previously discussed, it is crucial to acknowledge the forthcoming analysis. In the subsequent section, the limitations of a fault-based theory will be identified. Building upon the concept of no-fault liability, which will be analysed in the following sections, Enterprise Liability presents a compelling framework for addressing these issues.

6. Thai product liability law and the enterprise liability regime

The enterprise liability regime became the central concept of product liability when the key ideas of no-fault liability, internalisation and risk distribution gained prominence in the law. In Thailand, it is undeniable that the Liability for Damages Arising from Unsafe Products Act 2008 (the Unsafe Products Act 2008) represents a modern development of product liability, shaped by the concepts of enterprise liability, no-fault liability, internalisation, and risk distribution.

The legislators clarified their stance in the final notes. These notes reveal concerns regarding enterprise liability, emphasising that the evidentiary burden on consumers in lawsuits exacerbates the problem. Customers often need to prove factors that are beyond their knowledge or control, such as technical faults in products or internal business

[83] Ibid.

processes. Moreover, the substantial costs linked to litigation place a considerable burden on consumers' disadvantage.[84]

The Unsafe Products Act primarily serves as a robust tool for consumer protection through enterprise liability. Unlike the traditional fault-based theory applied in tort of negligence in the Civil and Commercial Code, several factors in the legislators' notes raise concerns regarding the concept of enterprise liability. It is concerning that the concept of strict liability is applied in this Act since the Unsafe Products Act entails no fault liability. This marks a legal innovation, evolving the traditional concept into a modern framework of enterprise liability.

The Act introduces intriguing ideas, beginning with its definition of entrepreneurs. This definition encompasses various stakeholders, including manufacturers, importers, and sellers, who are unable to clarify the origin of unsafe products. Under this Act, consumers are not required to prove the fault of entrepreneurs; they only need to demonstrate that the damage arose from the normal use or storage of the product. Nevertheless, the issue of causality remains unresolved, as consumers still bear the burden of establishing a direct link between the harm suffered and the use of the product. In addition, the statute empowers the court to shift the burden of proof from consumers to manufacturers. These significant changes mark a clear departure from the conventional fault-based negligence theory in tort law, a concept similarly recognised in both the US and the EU.

Conversely, to reconcile party interests with social equity, the Act incorporates a defence clause for manufacturers. For instance, these clauses allow for demonstrating that the product is safe or that consumers lacked knowledge about safety due to vague warnings. Although punitive damages can be pursued, they are infrequently awarded. Such provisions apply only in cases where the entrepreneur, exhibiting gross negligence, purposefully neglects to address concerns tied to an unsafe product.

When applying AI liability under this Act, enterprise liability governs it; however, certain aspects of the Act do not safeguard all consumers of AI tools. For instance, the Act's product definition excludes AI agents, covering only tangible AI products like self-driving cars. This issue will be analysed in the following section.

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[84] The legislators' note at the end of the Unsafe Products Act 2008.

7. Analytical Framework for Evaluation of Thai Product Liability Law

This article examines two foundational models of tort liability—fault-based liability and enterprise liability, in the context of harm caused by AI. Its core objective is to evaluate which model provides a more appropriate, fair, and effective legal response to the novel risks posed by autonomous and complex AI systems. To this end, the study employs a structured analytical framework consisting of six critical dimensions, each aligned with the Unsafe Products Act 2008. The framework is designed to assess both the effectiveness of the Act and its capacity to address liability for AI-related harm.

7.1 Principle of Justice in Liability Systems

This dimension examines the underlying theory of justice informing each liability regime. Fault-based liability is typically grounded in corrective justice, which emphasises moral accountability, individual fault, and restitution by the wrongdoer. In contrast, enterprise liability reflects distributive justice, aiming to allocate the burden of harm to those best positioned to prevent, insure against, or absorb such risks, most notably manufacturers.

7.2 Principle of Responsibility

This dimension explores how different liability models define and assign legal responsibility for harm. In a fault-based system, responsibility is closely linked to individual conduct, which can leave victims without compensation if causation is unclear or fault is hard to prove. Conversely, enterprise or no-fault liability models expand responsibility to include manufacturers that benefit from, control, or are best suited to manage the risks of emerging technologies.

7.3 Burden of Proof

This dimension considers how evidentiary burdens are distributed between claimants and defendants. Under fault-based regimes, injured parties must typically prove the existence of duty, breach, causation, and damage. In AI contexts, this burden becomes especially onerous due to algorithmic complexity and information asymmetry. Enterprise liability models may alleviate this burden by establishing presumptions or modifying evidentiary standards, thereby enhancing access to justice.

7.4 Causality Requirement

This dimension evaluates how each regime approaches causal attribution in tort law. Fault-based liability demands clear, traceable links between a defendant's actions and the resulting harm. However, the autonomous, probabilistic, and opaque nature of AI systems complicates this requirement. Enterprise liability may mitigate this challenge by de-emphasising strict causality and permitting presumptions or alternative standards of proof, especially when harms are embedded within complex algorithmic processes.

7.5 Scope of Protection

This dimension interrogates whether existing liability regimes are suitable for addressing AI-related harms. It considers whether the legal framework extends to non-traditional products and agents, such as software, algorithms, autonomous vehicles, and digital assistants. Fault-based models may be constrained by conventional legal categories rooted in physical products and human agency. In contrast, enterprise liability offers greater flexibility to broaden the definition of actionable harm and the entities subject to responsibility, thereby providing more comprehensive protection in AI-driven contexts.

7.6 Institutional Flexibility

This final dimension assesses the adaptability of legal institutions: courts, legislatures, and regulatory bodies in responding to technological evolution. It considers whether each liability model allows for interpretive innovation, prompt legal reform, or administrative adjustment. In dynamic AI landscapes, the institutional agility of a legal system may determine its long-term fairness, responsiveness, and effectiveness in ensuring accountability and compensation.

8. Evaluation of the Thai Product Liability Law with Enterprise Liability

This section evaluates the Thai product liability regime through the framework of enterprise liability to assess its capacity to address AI-related harm. Building on the three core concepts outlined in Section 3.3, the analysis examines the Unsafe Products Act 2008 to determine the extent to which it reflects the foundational principles of enterprise liability. The six analytical dimensions set out in Section 7 provide the evaluative framework.

8.1 The Principle of Liability Without Fault in AI-Related Harm across the Dimensions of Principle of Justice in Liability and Responsibility

This section evaluates the extent to which Thai product liability law fulfils the analytical dimensions of justice and responsibility, which lie at the heart of the no-fault liability principle examined in this article. In the dimension of justice in liability, the incorporation of enterprise liability into the Unsafe Products Act marked a significant step towards promoting fairness by rebalancing the asymmetrical relationship between manufacturers and consumers. By relieving injured parties of the burden to prove fault, the Act seeks to correct the informational and resource disparities that traditionally disadvantage consumers in product liability claims.

In terms of responsibility, however, significant gaps remain. In s 4 of the Unsafe Products Act employs the term "entrepreneurs" to designate those who may be held liable, a concept that captures manufacturers, importers, and sellers but does not expressly extend to other entities active in the AI lifecycle. While this approach reflects the traditional product paradigm, where liability is tied to tangible goods, it risks excluding key actors such as AI developers, operators, and service providers. In contrast, international policy frameworks, such as the OECD's definition of AI actors, explicitly recognise "those who play an active role in the AI system lifecycle, including organisations and individuals that deploy or operate AI."[85] The limited terminology in Thai law, therefore, illustrates how its definitions may already be outdated and in need of reform if they are to encompass the broader range of responsibilities associated with AI systems.

The statutory definition of "unsafe products" under s 4, Paragraph 7, further reflects an effort to broaden responsibility. The provision classifies as unsafe any product that causes, or may cause, harm due to a manufacturing defect, design defect, insufficient instructions, inadequate warnings, or misleading information concerning the product's ordinary use or care. This definition takes a comprehensive view of defective products by capturing not only tangible flaws in production or design but also failures in communication that could compromise consumer safety.

Yet, the reach of these provisions remains circumscribed. The Unsafe Products Act was drafted with conventional goods in mind—products whose risks are relatively

[85] OECD, "Artificial Intelligence & Responsible Business Conduct," accessed 2 June 2025, https://mneguidelines.oecd.org/RBC-and-artificial-intelligence.pdf.

stable and whose defects can be identified with reasonable certainty. When applied to AI systems, the Act's ability to deliver justice and responsibility is significantly constrained. The absence of explicit provisions addressing AI-specific risks—such as autonomous updates, post-sale modifications, and the opacity of machine learning processes—creates uncertainty and leaves consumers facing considerable hurdles in seeking effective remedies.

Accordingly, while Thai law embodies the principle of liability without fault in form, its practical operation exposes a narrow scope that fails to extend to the complex and evolving risks posed by AI. This gap underscores the urgent need for legal development to ensure that the dimensions of justice and responsibility are not merely formal aspirations but are meaningfully realised in the AI era.

8.2 The Principle of Internalisation in AI-Related Harm across the Dimensions of Principle of Responsibility, Burden of Proof and Causality

When assessed against the analytical dimensions of responsibility, burden of proof, and causality, Thai product liability law demonstrates a partial but incomplete realisation of the principle of enterprise liability in the context of AI.

With respect to responsibility, the 2008 Act extends liability beyond physical harm, recognising psychological injury and, in certain circumstances, punitive damages. This expansion reflects a consumer-oriented approach that resonates with the distributive rationale of enterprise liability, insofar as it places the burden of internalising risks on manufacturers rather than consumers. However, the scope of recoverable damages under Thai law remains incomplete. The Act does not provide explicit remedies for losses arising from data loss or data corruption, which are increasingly central to AI-related harm. Unlike physical or psychological injuries, these forms of digital damage remain outside the statutory framework, leaving consumers without adequate redress in cases where AI malfunctions compromise data integrity. Consequently, while the Act broadens responsibility in some respects, it continues to reflect the paradigm of static and tangible products, leaving its application to the evolving dynamics of AI uncertain.

The dimension of the burden of proof reveals a similar tension. While Thai courts are empowered to reverse the burden of proof in appropriate cases, thereby shifting evidentiary responsibility onto manufacturers, this mechanism depends heavily on judicial discretion. In principle, this enhances consumer protection; in practice,

however, it produces inconsistency and unpredictability. Victims of AI-related harm remain dependent on the willingness of individual judges to invoke burden-shifting, rather than being able to rely on a stable and predictable rule of law.

The most formidable challenge arises from causality. The Act continues to apply traditional causation principles, which presume a clear and direct link between a product defect and the harm sustained. Thai legal scholarship, as Paijit notes, generally relies on two principal theories. The first, the theory of equivalence of conditions, treats all contributing factors to the damage as causes in full, on the basis that it would be inappropriate to isolate only one factor.[86] The second, the theory of adequate causation, distinguishes between possible causes and identifies as the legally relevant cause only that factor which, under ordinary circumstances and common experience, would typically lead to the harm.[87]

Both theories, however, face serious difficulties when applied to AI systems. The autonomous, adaptive, and opaque features of AI render causal chains diffuse and technologically complex, making it nearly impossible to isolate or identify a legally relevant cause. As a result, the requirement of causality imposes an evidentiary burden that consumers are ill-equipped to satisfy. This undermines the very rationale of strict liability, which is intended to relieve injured parties from the practical impossibility of proving fault.

Taken together, these dimensions reveal that Thai law has made progress in redistributing responsibility and partially easing evidentiary burdens. Yet, its continued reliance on classical causation rules prevents it from fully realising the enterprise liability framework. The outcome is a liability regime that embodies strict liability in form but fails to deliver its protective function in substance, particularly in cases involving the unique risks of AI.

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[86] Paijit Punyapun, *Explanation of the Civil and Commercial Code: Torts* (Bangkok: Thammasat University, 1976), 33.

[87] Ibid., 34.

8.3 The Principle of Risk Distribution in AI-Related Harm across the Dimensions of Principle of Responsibility, Scope of Protection and Institutional Flexibility

An evaluation of Thai product liability law against the dimensions of responsibility, scope of protection, and institutional flexibility further underscores the challenges of adapting an analogue-era framework to the digital age of AI.

With regard to responsibility, Thai law reveals a structural imbalance. The absence of a development risk defence imposes near-absolute liability on manufacturers, even in circumstances where the risks of an AI system could not reasonably have been foreseen. While this stance may appear protective of consumers, it risks undermining the fairness of the liability system by ignoring the unforeseeable nature of certain technological risks. In effect, it imposes liability without consideration of whether the manufacturer was in a realistic position to prevent the harm, which distorts the principle of enterprise liability itself.

The scope of protection demonstrates another limitation. The 2008 Act is confined to tangible, movable products and does not explicitly extend to AI services, software, or digital harms such as data loss or manipulation. As a consequence, consumers are left exposed in precisely those areas where AI poses the most novel risks. The mismatch between the legal framework and the technological reality illustrates how a regime designed for the physical marketplace struggles to govern the digital ecosystem.

Finally, the dimension of institutional flexibility highlights the paradox of Thai product liability law. On the one hand, the regime is consumer-oriented, formally imposing heavy liability burdens on manufacturers. On the other hand, the rigid statutory definitions and the narrow conception of “product” prevent the law from adapting to the evolving risks of AI. This rigidity leaves consumers only partially protected and undermines the long-term credibility of the liability system.

In sum, when measured against these analytical dimensions, Thai law reveals both strengths and weaknesses. It reflects a strong commitment to consumer protection in principle, but suffers from doctrinal rigidity and definitional limitations that curtail its effectiveness. Unless the law evolves to address AI-specific risks, its framework risks obsolescence, offering formal liability without delivering substantive justice in practice.

Conclusion

This article presents critical insights into AI and the associated challenges of liability within this domain. The literature review reveals a consensus among scholars that AI can inflict harm while operating within a black box framework, which lacks transparent explanations of the underlying processes. This situation raises significant concerns within the civil justice system, particularly concerning the traditional fault-based theory. The philosophical foundation of corrective justice suggests that this theory is applicable solely when the parties involved possess equal standing. While certain manufacturers retain control over AI systems, consumers are confined to the utilisation of AI products and services, leading to a disparity in status. Consequently, state intervention is imperative to rectify this imbalance and establish a more equitable system for citizens. This context highlights the limitations of a fault-based approach in addressing contemporary AI liability issues and sets the stage for the introduction of enterprise liability in AI liability.

At the same time, the analysis also demonstrates the weaknesses of Thai product liability law, which remains insufficiently aligned with the principles of enterprise liability in the context of AI. The current legal framework, while embodying strict liability in form, fails to capture the complex and evolving risks associated with AI systems, particularly with respect to digital harms and the responsibility of diverse AI actors. This gap highlights the urgent need for legislative reform in Thailand to ensure that enterprise liability is effectively incorporated into AI regulation, thereby providing both fairness and adequate protection for consumers in the AI era.

To ensure that Thai law can adequately address the risks associated with AI, reforms are required that build on the foundations of enterprise liability. The definition of “entrepreneur” and “product” should be revised to extend beyond tangible goods and to encompass AI developers, deployers, and operators, as well as software and algorithmic services. Equally, causation rules must be adapted to reflect the technological opacity of AI systems by allowing presumptions of causality or reversing the burden of proof where appropriate, thereby preventing consumers from being unfairly disadvantaged in litigation. At the same time, the scope of recoverable damages should be broadened to include digital and data-related harms, such as data loss, corruption, or manipulation, which are increasingly central to the risks generated by AI.

Finally, Thailand should consider establishing AI-specific liability mechanisms, drawing inspiration from international developments such as the European Product Liability Directive 2024/2853. Such mechanisms could include enterprise liability for AI systems and the creation of new relationships between manufacturers and consumers.

These reforms would not only strengthen consumer protection but also create a balanced and future-oriented liability system that ensures fairness, accountability, and efficiency in the AI era. They would bring Thai law closer to the distributive justice principles underpinning enterprise liability, transforming the Thai product liability law into a substantive safeguard for society in the age of intelligent technologies.