

Civil Liability for AI Harm: Reconstructing the Standard of Fault in Comparative Civil Law



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Abstract

The increasing autonomy, complexity, and opacity of artificial intelligence systems pose significant challenges to traditional rules of civil liability, particularly the conventional fault-based standard developed around human conduct. This article examines the adequacy of the concept of fault in addressing harm caused by AI systems and seeks to reconstruct a more appropriate standard through a comparative analysis of civil-law and common-law jurisdictions. It analyses the difficulties associated with attributing responsibility, establishing causation, predicting harmful outcomes, and determining the degree of human control over autonomous systems. The study further compares fault-based, strict-liability, and hybrid approaches adopted in several jurisdictions, including France, the Netherlands, Quebec, Russia, the United Kingdom, the United States, and Canada. The analysis demonstrates that traditional fault should not be abandoned but adapted to the specific characteristics of AI. Accordingly, the article proposes an integrated framework based on foreseeability, effective and organisational control, technical complexity, proximate causation, and the level of risk created by the system. The proposed model distributes liability among developers, operators, users, and other relevant actors according to their capacity to anticipate, prevent, monitor, and mitigate harm. The article concludes that a flexible and context-sensitive reconstruction of fault can ensure effective victim compensation and accountability while avoiding excessive restrictions on technological innovation.

Keywords: Artificial intelligence; Civil liability; Fault standard; Causation; Foreseeability.

1. Introduction

Contemporary legal systems face significant challenges from the advent of artificially intelligent systems (AI). While extensive attention has been given to many of these challenges by a broad community of law scholars, the issue of civil liability for harm caused by AI systems remains insufficiently addressed (J. Erdélyi & Erdélyi, 2019). Where systems operate either autonomously or in partnership with human agents, the nature of the existing liability framework for AI-induced harm relies heavily on the concept

of fault. However, the explosive growth of AI applications raises the question of whether it is appropriate to apply the pre-existing conception of fault in this context. Constraints on the existing concept of liability need to be examined, as well as alternative approaches derived from comparative analysis of various jurisdictions. The goal of this scholarship is to reconstruct—by means of a comparative survey of civil law jurisdictions—a fault concept suitable for AI technology. (Ali & Ahmed, 2025)

Experts warn that existing legal systems were not designed with AI technology in mind; thus, structural difficulties arise as general frameworks are applied to specific AI technology (Hacker, 2022). Despite this warning, systems are nevertheless emerging in which a general framework of fault-based liability applies. Such liabilities do not provide a general presumption of fault. This approach underscores the fundamental distinction between fault-based principles and strict systems. Previous scholarship thus considers it legitimate, systemically and practically, to engage with fault in the preparation of an appropriate civil liability regime for AI. A basis for investment in AI applications is widely acknowledged to consist of an expectation of a compatible civil liability regime.

2. The Concept of Fault in Civil Liability

The concept of fault occupies a central place in a great number of civil liability systems. This is true both in the common law tradition and in civil law orders, where fault is enshrined in the general civil code of many. A system of liability for which fault constitutes a necessary factor is referred to as fault-based or fault-oriented liability. The notion of fault is itself a matter of great historical and doctrinal richness, (Al-Dulaimi and Mohammed2026) but at the most general level it can be defined in a positive manner as the plaintiff's expectation that the defendant acts (and hence omits to act) in accordance with a standard of conduct that is defined in the legal order concerned. Properly understood, fault then relates, first and foremost, to the 'how' of human behaviour. Fault denotes a deviation from the norm but does so while refraining from addressing the central issue of the 'whether'. It is only once the 'how' of behaviour has been scrutinised and a deviation has been established that one can, in a second step, tackle the 'whether' and declare that the attribution of fault entails a concomitant attribution of liability (Hacker, 2022).

2.1. Major Significant Historical Foundations, Key Developments, and Progressions of Fault

Recovery from damage in tort law based on fault is no mere repetition of the old adage that no-one should be made liable in tort for harm that they have not caused through their wrongful act. An understanding of the underlying nature and concept of tortious fault is important to achieving the desired result in a difficult recent case involving a road traffic accident that led to serious injuries. (Abraham & Sharkey,

2023) The complexity and uncertainty of liability law can be reduced by focussing on issues of foreseeability and control in the social context, while at the same time recognising that the role of tort liability is not only to compensate the innocent victim but also to place appropriate limits on the potential liability of those who are responsible for causing the harm. (Farajpour2025)

In the main, these principles are widely applied across common law jurisdictions. However, a number of civil jurisdictions operate more elaborate causation and/or liability rules, either expressly or implicitly, that depart from a purely fault-based regime. In such jurisdictions the tort of negligence is but one of a number of avenues of recovery for tortious harm and its role is often more closely related to the underlying question of proximity than to the primary goal of apportioning tortious responsibility according to fault. An analysis in comparative perspective therefore enables a clearer understanding of the true nature of tortious liability based on fault and its appropriate limits." (Bhatt, 2025)

2.2. Distinguishing Between Fault Liability and Strict Liability Principles in Legal Context

Strict liability principles govern cases where a person is held liable for the acts or omissions of another even though that person committed no fault and could not have prevented the harm. An example of strict liability is where a lessee of a vehicle is deemed responsible for fines incurred by the lessor. Fault liability principles attribute responsibility based on blameworthiness. Nobody is liable for an act unless either intentional, negligent or reckless; fault forms the basis for the legal reasoning to answer questions of liability for wrongs. The common law differentiates between fault liability (attributive responsibility) and strict liability principles (absence of attributable responsibility) (Hacker, 2022).

In continental law systems, liability for torts committed without the fault of the tort-feasor is not tortious liability in the strict sense. Continentals use the term “responsibility” to denote liability governed by strict liability rules – which, however, are not of the tort law kind. Dominant doctrinal views in civil law do not recognise a strict liability system for torts comparable to the common law system. Continental systems with a clear distinction between tortious liability in the wider sense (which encompasses both fault and responsibility) and liability in general (which is broader, and incorporates contractual liability) do not classify strict liability as tort law, strictly speaking. (Al-Hameed et al.2025)

3. AI Harm and the Challenges to Fault

Liability for AI-induced harm presents unique challenges for civil justice systems adapted to human-centric paradigms. The inner workings of increasingly sophisticated autonomous systems often surpass

the understanding of users, regulators, and even designers. Automated decision-making and conduct governed by algorithms instead of human instructions further complicate liability attribution (Hacker, 2022). Technical complexity, autonomous operation, and the inaccessibility of causative data hinder effective risk evaluation and precautionary measures. The public increasingly depends on AI-enhanced tools for vital functions. Digital platforms supply creative content with negligible user input, and financial robots offer investment guidance based solely on financial data (J. Erdélyi & Erdélyi, 2019). Inevitably, instances of AI-driven harm will emerge, encompassing injuries, property damage, and data loss.

Novel and far-reaching technical challenges prompt re-examination of familiar legal constructs. Notions of foreseeability, control, causation, and risk allocation—the essential foundations of fault—are confronting unprecedented challenges. The case of an autonomous vehicle misidentifying a pedestrian raises basic questions: Which parties were responsible? What precautions could have been implemented to avert the incident? These questions demand investigation of specifics to guide the reconstruction of fault standards adapted to AI.

3.1. Attribution of responsibility for the various actions and critical decisions made by autonomous systems in multiple diverse and significant contexts

Autonomous systems can directly impact the physical world without human intervention or consent, raising issues of responsibility and liability for any harm caused. Four main action types— think, decide, do, and act— can help classify such systems. Advanced systems are capable of a think-do strategy, generating (potentially harmful) proposals and simultaneously acting upon them, with humans retroactively scrutinizing and approving these proposals. Further complexity arises from cascading think-decide-do steps that diverge from conventional learning algorithms. Certainly, considerable responsibility for all autonomous actions remains with users, designers, and operators; whether this is sufficient, and how to distribute responsibility among those engaged with and affected by the system remains uncertain. (Hong, 2024)

Several AI-related challenges hinder conventional tort-based civil liability regimes based on fault or negligence. Harm appears frequently and earlier in cascading stepwise sequences or lengthy AI-enhanced decision processes, while responsibility is apportioned only to the very last action upon ‘thinking’ before ‘doing’. However, the initially considered action may hold equal or greater relevance. For traditional tort

systems, pinpointing the act that most closely precedes the harm often suffices, but such proximately-related thinking continues to elude straightforward analysis in many AI contexts. (Elavarasan, 2025)

Automated AI actions may occur without any associated user ‘decision’ step. ML-equipped systems, after a training phase, revert entirely to an already-existing base knowledge, which includes responsible know-how. Frameworks exist whereby an initial human guideline shapes a series of inner AI functions. Yet these algorithms are currently still regarded to provide predictive rather than directive functions. Where systems sporting both high-level pre-established rules and low-level adjustable techniques exhibit failures, it remains open to interpretation whether liability should be ascribed to the original instructional operation, the set of good-but-incomplete principles enabling the malfunction, or entirely to subsequent application and adjustment. (Al-Hameed et al.2025)

3.2. Causation in AI-related harm

AI harm raises sophisticated questions about causation, paralleling debates regarding pre-established causation tests in tort reform. AI systems—themselves results of human creativity, design, and development—do not operate independently from initial human decisions, limiting needless abstraction through a search for socratic first causes. Technology exerts contributory force through design, programmatory features, and life-cycle influences. IP laws also produce a traceable chain to the enterprise and author from a legal viewpoint. AI systems perform probabilistic, non-unique responses calibrated through chance. Their innumerable ontological configurations produce malleable, polytropic behaviour requiring subsequent human instruction, fixing the initial designers’ obligations to determine technical optimisation’s inclusion and broadening the concept of reasonable control. AI experimentation often involves monitoring engagement metrics, augmenting prospective fault through further exposure to societal biases thereby accumulating telos of AI control shifts and renovation at each juncture. Current debates illustrate problematic administrative burden, absence of negligence presumptions, and necessary complexity of reform; adopting a proximate causation layer to elite designs producing remote AI-inflicted detriment could materially facilitate liability across technical domains (Hacker, 2022).

3.3. foreseeability and the standard of care

Although the concept of fault plays a central role in civil liability, the precise criteria and standard of care remain subject to interpretation and vary across jurisdictions. A defining feature of comparative discourse is the emphasis placed on foreseeability, often referred to as an ‘instrumental’ or ‘intermediate’ criterion of the standard of care because its degree serves to calibrate compliance with the generally

required standard (Hacker, 2022). The OECD Principles on Artificial Intelligence, define the term AI as encompassing both current and anticipated systems, and media reports typically classify AI methods into the categories of automation, decision support, and machine-learning-based approaches. The focus on AI liability and the nature of the regulated activity have led to a preference for constructing only an outline of the intervening standard of care between the extreme faultless-machine and full-responsibility scenarios, and because the degree of foreseeability largely determines what constitutes a required standard of care, foreseeability receives primary treatment.

Systemic differences between autonomous and conventional information technologies, together with the essential nature of AI, call into question the very premise of attributing foreseeability and consequently fault-based responsibility for legal injury caused solely by the autonomous AI activity of an independently operating ‘agent’ beyond the effective control of the user (Erichson, 2023). Large language models and the lack of a factual basis for predicting particular yet relevant future inputs furnish an example of unforeseeable operation. Because fault addresses the specific point of decision and the surrounding contextual circumstances, comparative consideration centres primarily on the means adopted to engender the system, rather than ex ante foresight and the end consequence. The extreme limit of fully predicting and safeguarding against every potential input or action by the autonomous agent—a machine capable of operating independently and beyond human oversight—places the activity under a non-AI-related definition contrary to the broader interpretation of machine-based liability. While AI technology includes autonomous agents and independent systems, the surrounding operational circumstances determine the nature of the regime for liability. Another distinction pertinent to the question of whether fault beyond input data is involved concerns the location of the legal liability. Constructing only remotely applicable-ML-architecture machine-learning artificial-intelligence large-language-model inference activities excludes non-AI-induced responsibility from the analysis entirely. (Mallet & Nassar, 2025)

4. Comparative Perspectives on Fault

For civil law jurisdictions that primarily apply fault liability *strictu sensu* to AI-related harm, four geographically separate paradigms emerge, each exhibiting national or regional variations: (i) central and eastern Europe; (ii) western Europe; (iii) Asia; and (iv) Latin America. In nations adhering to mixed liability, closely analogous civil law jurisdictions combine fault-based and strict liability principles. Considerable structural parallels exist in common law AC and ILA regimes, yet civil law doctrines

remain authoritatively distinct; only supplementary common law features warrant attention. (Verstein, 2023)

Civil law jurisdictions classically predicated upon fault exhibit remarkable coherence in their liability rules for AI-related harm. Agreement characterises three foundational tenets: (1) the foreseeability and control of harmful outcomes, even when causation proves less than direct; (2) the significance of unchallenged complexity, diversification, or transformation in technical design; and (3) the absence of liability for AI simulation of human behaviour no longer modifiable by human intervention, albeit modelling AI behaviour already amenable to adjustment constitutes an exception. Common law AC and ILA doctrines reappear within civil law discussion less as constitutive frameworks than as complementary markers or elaborations. (Lima et al.2023)

4.1. Civil law jurisdictions with fault-based regimes

This overview focuses on civil-law jurisdictions that impose liability only for fault. These include the Netherlands, Quebec, and Russia. By examining the relevant regulations or interpretations of the fault concept in these jurisdictions, it becomes possible to reconstruct, along the lines proposed above, a workable and internationally exposed standard of fault specifically suited to AI-related harms. (Joshi, 2025)

In the Netherlands, Article 6:162 of the Civil Code on tort liability requires a wrongful act, the general duty in tort. Judgments on tort liability made by the Dutch Supreme Court focus on the factual, social, and legal criteria that constitute a specific tortious act. The existence of an obligation or a right corresponds to the general duty in tort. The obligation or the right that concerns AI-related activity may encompass the duty to refrain from illegal actions, the duty to refrain from causing unreasonable disturbance, or the duty to operate a risk enterprise. The interpretation of fault constitutes another central concept in tort law. The Dutch Supreme Court uses a simple liability model, where the requirements of illegitimacy and causation must be met in tort law when the loss is the result of the operation of an artificial intelligence system. It has been rigorously stated that in tort law the obligation to compensate follows solely in the event of a wrongful act. Hence, the focus on the wrongful act and factual cause is established in accordance with external social factual circumstances and changes, and on the problem of finding the right entitled to compensation, although the debate still remains open on the detailed analysis (Walker Smith & Neznamov, 2019).

In Quebec, Articles 1457-1459 of the Civil Code govern extra-contractual civil liability. They stipulate that a person is liable for the wrongful act committed by an artificial intelligence if the conduct or the fault of that person contributes to that harm unless the person shows that he or she exercised the diligence of a prudent and diligent person.

In the Russian Federation, the Civil Code sets out that the person who has committed a wrongful act is bound to compensate for the damage caused and distinguishes between types of liability that depend on fault, and on the technical characteristics of the object that caused the damage. In both systems analysed, adequate steps can be taken to reconstruct a workable and internationally acceptable standard of liability based on foreseeable events in a civil liability context (Hacker, 2022).

4.2. Civil law jurisdictions with mixed or fault-like regimes

In civil law jurisdictions with mixed or fault-like liability regimes, the challenges associated with AI responsibility are similarly complex. Such systems typically exhibit elements of both fault and strict liability, leading to the perception of a “hybrid” approach. French law constitutes a widely recognized representative of this category (Hacker, 2022) characterised by the coexistence of these models, one of which addresses state-of-the-art technology. A more distinct variation is afforded by Russian law, which adopts a subjective notion of fault through the evaluation of the infringer’s attitude toward wrongful conduct, an assessment closely linked to traditional tort law.

In French liability law, damage functions as a general prerequisite in tort, whereas the obligation to ensure safety ranks as a specific criterion. The hybrid system comes into play when damage emerges from a defect associated with an artificial intelligence system. In such instances, strict liability applies for harm stemming from a defect, while the court additionally examines the existence of fault, with the operator remaining answerable unless compliance with appropriate standards and benchmarks is demonstrated. The concept of appropriateness encompasses technical and technological considerations as well as subjective factors like the operator’s knowledge of the established norms (Walker Smith & Neznamov, 2019).

4.3. Common law approaches and their influence on fault

Common law systems, especially the United Kingdom, United States and Canada, have developed additional liability regimes to tackle challenging civil-harm cases outside the realm of fault-based tort law, including product liability, occupiers’ liability and certain statutory regimes known as no-fault torts.

The contributory negligence doctrine interacts with several of these systems while permitting the injured plaintiff to recover damages reflecting the defendant's limited fault. This doctrine has also made its way into public authority liability, while Canada recognizes the sort of statutory no-fault regime that now commonly applies to motor-vehicle damage (Hacker, 2022). Within these common-law jurisdictions, there are two additional influences relevant to reconstructing fault-based responsibility for AI harm.

First, the innovative strict liability for defective products developed in the United States under the Second Restatement is known through systems influenced by French civil law and has now encouraged broader notions of product liability elsewhere in the common law. The founding of a civil liability regime on a broad and materially "firm" notion of defect continues to exhibit influence in the reconstruction of fault-based responsibility for harm from AI systems. Similarly, the Canadian approach to public authority liability provides the largest structure for considering fault in regulating such AI infrastructures as smart cities or connected transportation systems; the voluntary adherence of AI actors to the contents of the Act plays a significant role in properly calibrating their duty of care. (Ratner, 2025)

Finally, the notion of preventive-order liability established in Canada and considered in Australia fascinates tort theorists confronted with widespread governmental precautions against emerging technologies that might inflict AI-induced harm. Preventive orders communicate forwarding a low-probability of very serious potential consequences and thus proceed from the notion of reasonable care. The failure to adopt major prophylactic safeguards emerges as particularly relevant in the numerous AI incidents that remain possible despite widespread international commitment to effective containment. These influences enhance reliance on the conventional elements of foreseeability and control in reconstructing responses precise to the nature of AI.

Notably, significant legal developments have fallen under the scope of artificial intelligence yet focus on fields indirectly related to civil liability, notably intellectual property, privacy and the command of machines. These various influences address the challenge of determining liability for damage caused by AI systems more or less independently of fault. Even extensive efforts to elaborate a strict liability regime for harm caused only by wide-ranging AI systems fail to account adequately for the salient concerns. (Hong, 2024)

5. Reconstructing the Fault Standard for AI

A. Foreseeability and Control in AI Fault

The challenge of accountability for AI-generated harm arises from the distinctive functionality of such systems. Jurisdictions that view fault through the lens of care, foreseeability, and control can respond to the challenges presented by AI with relative ease. Damage is expected to remain a prerequisite for liability under fault frameworks. For AI-integrated activities, however, an operative and distinctive framework should focus on foreseeability and control. (Bachar, 2023)

Foreseeability operates through the lens of future outcomes and not the temporal distance between cause and effect. AI can possess multifarious machine-learned parameters that continue to evolve, leading to unpredictable outputs and a certain degree of independence from the owner and operator. Instruments such as multi-modality permits extensive autonomy and a constellation of possible outputs depending on shifting input parameters. Fully autonomous AIs, such as generative text and artistic AIs, may not only augment decision-making but serve as independent initiators and co-producers of harmful content. Here, the necessary ascription and concentration on the AI operator might fluctuate and vanish, reverting to the original source of the kind of bad input provided to the autonomous system and the operator's intention to avoid harm. Consideration can still remain on the operator's intention via the "goal" set for the machine. (Maheshwari)

Control must be cast in broad terms, as held by the courts of leading jurisdictions. The touchstone for proactive preventive control that mandates pre-emptive action increases in significance. In many circumstances, damage facilitation can occur without a full and significant control retention by the operator of the AI activity.

Alongside further technical complexity, the proliferating presence of intermediary players and technologically-orientated third parties supplying fine-tuning or input augmentation support may be rising. Such participants can broaden a strong liability, while regulatory conversation may prod into the extent and type of data input or modification being offered that preserves either liability or the defence thereof. (Miceli, 2024)

B. Technical Complexity as a Fault Consideration

Technical and operational complexity of AI and augmented ML systems continues to rise. The case for imposition of a liability framework for operator AI-enhanced facilities remains a point of attention. Sophisticated generative AIs readily produce potentially noxious content, blurring the border for the

operator between the legitimately generative and the potentially unallowable. Such paradigmatic challenges do not absolve an operator-focused AI fault proposition. (Al-Hameed et al.2025)

Technical complexity can introduce both a difficulty and an element of focus into liability. The AI-footprint and enhancement contingently increase the complexity, blurring responsibility. The technical challenge presented might itself affect the assessment of care, due at times to the lack of clarity between safety and other concerns in the evolving AIs. Simultaneously, enhanced or altered complexity raises a key dimension of liability as it embodies the trade-off governing the competitive decision to enclose and embrace augmenting-expertise support. Expanded AI-ML frameworks obligate a deeper probity into the obligation-on-care dimensions, thereby cross-cutting the aspect of care/foresight into the overarching examination.

C. Proximate Causation and Remote AI-Induced Harm

Proximate-causation criteria furnish a pre-existing comparative-scale benchmark for gauging AI+issues. In multiple arrangements, damage may stem from activities governed entirely beyond the reach of the principal provider—for example, the overlay of an intermediary add-on that by-passes base queries entered under the original operator’s strict verification and intent. Resolution therefore reverts, in aspect, to a geophysical nettle around the fundamental dossier of extent occupancy and supervision. (Jaddou and Marouf2023)

Specifications on-distance, moreover, may selectively alter as operator health informs contingent supply. Incidents accruing exposure well beyond real-time circling pose challenges for liability, given the outer reach on the operative-prevent-constrain spectrum. The spectra of responsibility, therefore, between maintenance-for-governance and expansive-input-suration diverge according to the nature of the value-laden system—whether actively presumptive towards the operator or strictly adjunct mediately. Conditional benchmarks, hence, bridge directly into foundational allocations of risk and preventative obligation, transitioning across the bases of premises entered or governance structure supplied and onto the degree of preventive-accessibility incorporated into the provision finality. (Mallet & Nassar, 2025)

D. The Function of Fault in Allocating Risk and Damages

The assignment of fault proceeds through diverse considerations joining-back common-starting themes across formally structured systems. Rather than rest solely around concepts of culpability or blame, the

case-capacity of a fault regime embraces further analytic devisings uniting multiple strands. Across civil-frames and elaborate formations of formalism, these alinement-longlines deploy fault-element under-opportunity rather alongside a thematics of care and moral impermissibility. The concurrence of opportunity lodged into a liability-searching queue re-expresses an option that can retrace conditions constraining the net-traffic alongside the bound for input-sequencing and joint dependency motifs. (Baker)

The pairing of risk and damage integrates further aspects imbedding shared benchmarking of fault-rigidities shaping pre-optional-settings and capability further alongside. Domain-wide complexity through highly composite structures and thoroughly-widespread activity modulates-look further surfaces across priority-table matrices. The guard-band therefore loosely-frames a dissecting-view across policy reconsiderations layering back over levels and provision sorts. Options for founding unmapped-integration collectively-compile through either caution-led preservation of the original scheme-designation alongside backtracing or direct passage through salvageated freedom, supporting awareness of the brakes through a detailed contour exhibiting by-pass to-headroom preparation either. (Emanuel et al.2025)

Policy-archetype integration locates foundational-layering joining further common-scales towards the tick-and-wholesale, probing-back residence address disclosing additional illumination towards extensive-coverage corollary. Full-spectrum synthesis coordinates further option-construct tracing reconnections inserting-seam correspondences establishing foundational-through-face central.

5.1. The role of foreseeability and control in AI fault

As noted in civil law jurisdictions, foreseeability, the possibility to anticipate the harmful consequences of one's actions, plays a crucial role in the standard-of-care definition and influencing the allocation of damages between parties (Hacker, 2022). Therefore, in connection with a broader comparative survey of fault, an elaboration on foreseeability needs to be provided.

The interpretation of the role of foreseeability is starkly different between AI and traditional systems. In the case of an AI-enabled system, owing to the complex nature of the intelligent solution, it cannot have an at-least-similar AC. Therefore, much effort shall be put in by legal scholars to reformulate the standard of care expected from human stakeholders, emphasizing the need of evaluating foreseeability at a much-broader level to tackle the proxy causation link introduced by the AI, and stating that when appropriate

actions has been undertaken in accordance with the knowledge widely recognized by the community of the surrounding sector at that instance, thus no legal attribution could be made further to the hazarded outcome.

5.2. The integration of technical complexity into fault assessment

The characteristics of artificial intelligence (AI) systems warrant special consideration in the assessment of fault-based liability. The fact that these systems are capable of continuously learning through their embedding into online systems and of autonomously performing actions unprecedented during design or training poses challenges regarding the plausibility of a straightforward correlation between the foreseeability of remote AI-induced harm and the wide spectrum of proximate cause, from human conduct to the conduct of the AI system itself. Only cited by reference to a specific document. As mentioned, certain AI systems comprise mathematical models with complex architectures trained on large datasets yet produce outputs in a manner that remains inherently non-transparent to most users even when the decision-making process is mathematically intelligible. Such a lack of transparency impedes the ascertainment of not only the degree of control exercised by the user but also, consequently, the avoidability of harm emanating from the autonomous actions taken by the AI system after the very moment said models are introduced into the user's environment. These AI features challenge traditional fault concepts based either on foreseeability or control (Hacker, 2022).

In reconstructing the standard of fault, it thus becomes crucial to specify the exact function embodied in the fault concept and how precisely the above-mentioned AI features impact it. Such a clarification allows contemplation of the very possibility of establishing a practical fault standard for an emerging technology marked by opacity and unpredictability without risking its economic and social benefits—a situation comparable to the earlier advent of motor vehicles and the associated discourse on an allegedly reasonable eschewal of the standard of fault as a whole within a reform-oriented legal community (Fernández Llorca et al., 2022). One option consists in retaining the traditional functions of the fault concept yet integrating into the assessment a dimension reflecting the technical complexity involved—irrespective of the tractability of causation, not just regarding the acting subject but also about the remotely affected object.

5.3. Proximate causation and remote AI-induced harm

While foreseeability addresses the types of harm that the operator is liable for, additional refinements are needed to define an operator's responsibility concerning the particular cause of AI-induced injury and

the degree of control exercised over the AI system (Hacker, 2022). The operational design domain describes the specific conditions under which an automated system is designed to function. These include mission constraints and constraints on environmental inputs, interventions, and external controls (J. Erdélyi & Erdélyi, 2019). The broader the operational design domain, the more extensive the output space and the greater the freedom afforded to the AI system”. In various jurisdictions a distinction is made between direct and indirect, primary and secondary, and immediate and remote causes.

The AI operator is liable only when the remote cause of harm, regardless of its breadth, provides the system with the corresponding degree of freedom within the broader operational design domain (Fernández Llorca et al., 2022).

5.4. The function of fault in allocation of risk and damages

The concept of fault allocates liability while reserving it for more reproachable conduct, serving to calibrate both risk and damages. The greater the risk taken, the broader the distance ceded—to autonomy, machine-learning models, or intermittent access to training data—greater the chance of liability. Two factors enter the calculation. The first, foreseeability, concerns the potentiality of AI harm even if the specific outcome is likely remote, given that high-risk use persisted. The second, proximity, examines whether even with that high risk access remained sufficiently distanced to contemplate non-liability. The extreme is evident in no-fault liability, where, once a risk threshold is crossed, the claimant’s chance of recovery does not depend on knowing whether the perpetrator even knew of that risk. (Kordi, 2023)

7. Comparative Models and Proposals

AI systems increasingly assume versatile responsibilities and operate in myriad contexts. Civil codes thus require adaptation for effective regulation and management of AI-related risks. Rather than introduce a new regime, the European Parliament and Commission tend toward reconstruction of existing frameworks, especially surrounding issues of direct freedom and safety. Parallel movement is observable within comparative tort regimes; attention remains devoted to existing codes, notably the United States Restatement and the French Civil Code; technical analysis informs pertinent legislative proposals, affording yet another avenue for inspiration (Hacker, 2022).

Various jurisdictions afford a constructive starting point for analysis, shedding light on legislative approaches and conceptual challenges. Entry points for reflexive consideration and anticipation likewise emerge, clarifying primary objectives and potential pathways. Four leading jurisdictions—Belgium,

Brazil, France, and Quebec—adopt civil liability rules targeting AI systems whilst providing civil-law perspectives on a critical dimension. A bridging analysis explores articulation of liability norms across internal code constituents, facilitating consideration of fault-related challenges and enriching the circuit of comparative signals.

7.1. A synthesis of leading jurisdictions

Civil liability for AI harm has gained significant attention as autonomous systems proliferate, prompting governments and scholars to propose frameworks for AI-triggered damage. Reconciling civil liability with the autonomous operation of AI is especially vital because, despite its economic and social importance, liability for AI-inflicted harm remains unsettled. A consistent, comparative law analysis of fault is appropriate and timely due to the centrality of accidental harm to civil liability and the differentiation of fault across civil-law jurisdictions. Because advanced generative systems and robotic systems operate to varying degrees of autonomy and spatial temporality, a comparative examination of fault meets the need for a broad-scope harmonisation measure with relevance to any direct causative involvement of AI in the occurrence of harm. (Braithwaite, 2022)

The comparative analysis reveals that established civil-law jurisdictions retain significant substantive fault differences and diverge even further from common-law approaches, complicating harmonisation efforts beyond a general comparative framework. Prevalent civil-law approaches permit the formulation of a representative conceptual model, while retaining room for national adaptation to specific contextual parameters. Examination of how the civil law of leading jurisdictions addresses causation, foreseeability, complexity, and damage confirms that public guidance regarding the connections between control, technical complexity, and negligence remains both necessary and achievable. (Bero, 2024)

7.2. A proposed framework for AI fault in comparative law

Civil liability in the event of AI harm raises concerns regarding the traditional standard of fault. Analysing this standard in leading jurisdictions can assist in formulating a viable solution. A detailed examination of authoritative doctrines enables the formulation of a novel, structured framework grounded in historical precedent, with enhanced clarity on key parameters. (Verstein, 2023)

The proposed standard accounts for foreseeable misuse and organisational control over the AI system when determining negligence. It integrates the notion of technical complexity by distinguishing between remote, unforeseeable AI-induced damage originating from sophisticated systems and direct, predictable

harm linked to rudimentary systems. A refined approach to causation permits consideration of AI-induced harm that, though repetitive, occurs outside the immediate context, as separate and non-derivative. The framework further reconceptualises fault involving material risk by defining it as an augmented capacity to cause damage under elevated exposure. It thereby differentiates allocation and level—risk management concerns typically governed by insurance, and resulting harm—factors justifying tort intervention.

Attributing fault to a party supplying a legally compliant AI system relies on the idea that extensive effort to preserve safety is sufficient, after which the package no longer supports macro-level risk management. Fact-intensive and contextually sensitive, this concept prompts a shift in civil liability debates to the level of causal attribution and requires a corresponding adjustment regarding prescriptive or imputed compliance. An alternative position holds that liability enters only after precautionary measures fail, irrespective of continuous updates pertaining to the tort exclusion. This preliminary framework for construing fault demonstrates broad internal consistency yet substantial external mesh. Refinements are still viable, and the transparent exposition of rules facilitates identification of any additional adjustments by jurisdictions pursuing the new liability paradigm (Hacker, 2022).

7.3. Significant Implementation Challenges and Complex Transitional Pathways Ahead

Legal systems worldwide are grappling with the distribution of civil liability for harm stemming from artificial intelligence (AI). A recent regulatory initiative in the European Union exemplifies this trend—draft directives are advancing through the legislature to establish general rules governing liability for damages caused by AI. Implementation of these proposed directives is likely to prove difficult.

-Difficulties arise after damage has occurred, when parties seek indemnification from other parties on the basis of alleged fault. Particularly frequent disputes hinge on the adequacy and precautions exercised in selecting the data used to train AI systems (Hacker, 2022).

-Liability shields for small and medium-sized enterprises (SMEs) address the tensions between the need for rapid AI innovation and proper accountability. These enterprises are provisionally shielded from liability for up to three years from their first market entry. This safeguard acknowledges the potential life-and-death consequences of AI while recognising the difficulty of involved liability determinations. (Al-Shaibani, 2024)

8. Conclusion

AI general-purpose technologies are not only transforming various aspects of societies but are also triggering substantial legal, economic, and ethical debates that cannot be overlooked. As these groundbreaking technologies proliferate across different industries and domains, liability regimes are urgently being adapted and recalibrated to effectively determine responsibility for civil damages stemming from the diverse applications of AI systems. A thorough comparative analysis of civil liability across different jurisdictions reveals that civil law jurisdictions tend to favour fault-based liability. These jurisdictions exhibit a considerable level of caution when it comes to the adoption of stricter liability regimes compared to their common-law counterparts, which often embrace more robust frameworks for accountability. Notably, these civil law jurisdictions have yet to fully redefine the concept of fault in light of the implications and unique challenges posed by artificial intelligence, a situation that is not as pronounced in common-law and mixed jurisdictions, where the interplay between negligence and liability is more clearly articulated. Through an in-depth analysis of leading civil law countries such as France, Italy, Spain, Belgium, and Switzerland, we observe that the fundamental elements like foreseeability, technical complexity, and control emerge as critical components that shape the landscape of liability in these jurisdictions. (Abdollahi et al., 2023) Furthermore, the differentiation between proximate and remote causation becomes especially pertinent in understanding liability in these contexts, as it provides clear guidelines for the allocation of risk in situations involving AI systems. Even in highly automated systems, it is abundantly clear that an integrative fault-based framework remains absolutely necessary to ensure accountability. Such a framework is crucial to re-establish the appropriate allocation of risk, differentiate operators who exercise similar levels of care, and reinforce the pivotal yet evolving role of human agency amidst the ongoing rise of AI technologies in society. By recognizing these critical factors, stakeholders can better navigate the complex legal landscape and work towards establishing fair and just systems that adequately address the challenges brought forth by artificial intelligence. (Crootoof, 2022)(Hacker, 2022)

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