

AI SYSTEMS IN SPORTS VERSUS LAW: WHO PAYS FOR THE DAMAGES CAUSED?

Sónia Moreira

Associate Professor with Habilitation in the Law School of University of Minho; Senior Investigator of JusGov, Portugal

Patrícia Sousa Borges

Invited Assistant Professor in the Law School of University of Minho; Investigator of JusGov, Portugal

Abstract: *It is undeniable how a mass of algorithms has invaded our routine, invisibly and stealthily, assisting us from the most basic and residual tasks to the most demanding and risky activities. Having said this, we believe that the overwhelming force and speed with which AI has become installed in our activities has led to continuous disquiet on the part of the European Union, well evidenced by the constant publication of legislation proposals on the subject¹.*

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1. The AI introduction into Sports

This revolutionary paradigm has also found a way into the sports practice, evidenced from not only the use of algorithms in the monitoring and development of athletes' physical capacity but also AI system's capacity of maximizing the interaction of the club with the fans. However, and despite the different levels of risk associated with the use of these algorithms in different activities², the truth is that there are questions associated with this use that urgently require an answer.

1. This paper is based – with developments and actualizations – to the work published in: Sónia Moreira, Patrícia Sousa Borges (2023), “Who is held liable for damages caused by the use of AI in Sports?”, [Gabriel Martín Rodríguez; Sandra López de Zubiría, (dirs.), Álvaro Alzina Lozano; Fábio da Silva Veiga Eds], *Estudios de Derecho y Gobernanza, Porto/Madrid: Instituto Iberoamericano de Estudios Jurídicos e Universidad Rey Juan Carlos*, ISBN: 978-989-35342-5-0, pp. 25-40.

2. The European Commission, in the proposal for a Regulation on Artificial Intelligence, published in April 2021, hierarchized different levels of risk according to the activity in which AI is used. See European Commission, *Proposal for a Regulation of the European Parliament and of the Council establishing harmonized rules concerning artificial intelligence (Artificial Intelligence Regulation) and amending certain Union legislative acts*, Brussels, 2021, available at <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0206&qid=1682348868535>. After a large social and political debate, having several aspects improved, this proposal was adopted in 2024 and is known as the Artificial Intelligence Act. See *Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down*

From this continuous legislative proposals, it is possible to extract (even if in an embryonic way) the position of the European Union regarding the use of AI systems, namely how the damages that derive from their use in the most varied activities should be addressed, in particular when used in the sports orbit.

AI has been used in sports for some time now, namely in sports training, aiding the performance of the athletes, etc. In 2002, a team of baseball in USA (the Oakland Athletics) started using a system named “Moneyball”, to analyze the performance of its athletes³; in 2014, in Germany, a football team started using “SAP Sports ONE”, a system that analyzes videos of matches played by the team in order to identify the weaknesses and strengths of their adversaries; in 2014, in Portugal, our country, Benfica started using “360 S Simulator”, a system that detects the weaknesses of the players and helps them to improve them⁴.

We have no doubt that the introduction of these systems contributes to a greater sporting truth, as these algorithms detect accurately the compliance with the game's rules. However, if these systems malfunction, the damage may be enormous: for instance, they may lead to the exclusion of a team from the grand finale of the Champions League, where its mere participation would mean a prize of 15.5 million euros.

2.2. The difference between the decision of a judge and a football referee

Regarding the use of AI in the judicial system, many countries are already using AI systems to assist the human judge. In Portugal, these new systems are currently in operation in about 25% of the courts (seven judicial districts - Braga, Bragança, Beja, Coimbra, Évora, Guarda, Lisboa-Oeste - and 14 TAF), at the disposal of more than 400 magistrates, having processed more than 400 million documents and recorded more than 10,000 decisions. In Estonia, the replacement of the human judge by algorithm systems is already being discussed⁵. How-

harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act), Brussels, available at <https://eur-lex.europa.eu/eli/reg/2024/1689/oj/eng>.

3. Michael Hughes; Tim Caudrelier; Nic James; Athalie Redwood-Brown; Ian Donnelly; Anthony Kirkbride; Christophe Duschesne (2012), “Moneyball and soccer - An analysis of the key performance indicators of elite male soccer players by position”, in: *Journal of Human Sport and Exercise*, vol. 7, issue 2, London, pp. 402-412.

4. In this regard, see, Nuno Maria Monteiro Palmeiro (2020), “*Referencial para a utilização de técnicas de inteligência artificial no futebol*”, in: MSc Dissertation in Information Management: Universidade Nova de Lisboa, pp. 18-24.

5. In this regard, the Estonian Ministry of Justice has announced the development of a robot

ever, it is necessary to analyze the use of AI systems in sports orbit, particularly in football, as possible substitutes for the decision-making power of the football referee.

Both the judge of law and the sports referee are assigned a decision-making function in response to the concrete facts that are presented to them, assessing its compliance with the law. The author Francisco Corte Real states that “the referee is for Sports as the judge is for Law - not in the literal sense (...), but in its function of guarantor of the effectiveness of the rules and their application to the concrete case. Like the judge of law, the referee should be characterized by their neutrality, impartiality and independence in relation to sportsmen and sporting institutions they represent, to ensure respect for the truth of sport”⁶. The Laws of the Game include 17 rules, and, according to Law 5, the referee is the “authority” of the game, which is played under their aegis and control, thus being responsible for the effective management of the match and for checking the compliance with all rules during the match. The same law gave the referee discretionary power to interpret and decide the incidences of the game, according to their conviction, and their decisions on facts related to the game cannot be appealed – namely, the validation or not of a goal. These characteristics imply that “the exercise of the functions of a referee requires their independence, whilst there are a series of situations of incompatibility between the exercise of the functions of referee and the exercise of other sports functions”⁷, since the referee is the person “empowered by sports federation to ensure compliance with the rules of competition in the midst of it”⁸.

There are similar unsurpassable characteristics between the exercise of these two functions⁹, for in fact, as with the judge seated in the court, the referee holds a power of appreciation and judgment according to the laws of the game and, to that extent, their impartial function is quite similar to that which guides the judiciary. However, we can already point out one difference: the time of the decision-making process. Unlike the judge, who has access to the case file, hears the par-

judge, see – *JUSDECISUM, Artificial Intelligence: the world's first “robot judge” is already being developed*, available at <https://www.jusbrasil.com.br/noticias/inteligencia-artificial-ja-estando-desenvolvido-o-primeiro-juiz-robo-do-mundo/694911278?ref=amp>.

6. Francisco Corte-Real (2019), “Árbitro”, *Enciclopédia de Direito do Desporto*, [Alexandre Miguel Mestre Ed.], Gestlegal: Coimbra, p. 31.

7. Nuno Barbosa (2011), “O estatuto jurídico do árbitro no direito português”, in: *Direito do Desporto Profissional, Contributos de um curso de Pós-Graduação*, [Ricardo Costa, João Leal Amado Eds.], col. no. 6, Almedina: Coimbra, p. 51.

8. *Ibis Idem*.

9. Notwithstanding the fact that we must not forget that the judge of law exercises jurisdictional power, with his or her own status recognized in articles 215 and following of the Constitution of the Portuguese Republic.

ties, hears the witnesses' testimony, and, after analyzing the evidence produced during the hearing and trial, issues a decision, the referee-judge has fractions of a second to issue a decision that may effectively change the course of the game.

Regarding the use of AI systems to assist the judge of law prior to making a decision, namely with the automatic organization of procedural documents, it seems to us that such help may be useful to speed up the process. However, with regard to the implementation of AI systems in sports, *in casu*, in a football match, replacing a football referee, it is important to assess whether it will be beneficial to verify compliance with the laws of the game, and ultimately, to achieve the principle of sports truth in the competition and the result itself¹⁰.

The football market generates billions of euros and has become one of the largest revenue generating markets in the world, which means that the requirement and rigor of the competition are increasingly determining factors for the promotion of a good show. Note that the referee is one of the active subjects of this event and, therefore, FIFA has implemented, along the technological evolution, mechanisms that may assist the referee's decision-making process, since it believes that "the change will benefit the game [and focuses on] the fairness, integrity, respect, safety, the enjoyment of the participants and how technology can benefit"¹¹. Currently, "the referee's decision-making process can be broken down into four distinct moments: first, the referee perceives a situation; then, the referee extracts a fact from that situation, and decides in accordance with the rules, finally implementing the application of the laws of the game"¹².

However, considering the short time the referee has in their decision-making process, in recent years we have seen a revolution in the implementation of assistant referees, as well as technological systems that allow to assist the formulation of an appraisal judgment on a particular ball throw. In 2014, FIFA implemented Goal Line Technology (GLT), a tool capable of indicating to the referee whether the ball has completely crossed the goal line; Then, in 2019, FIFA introduced video refereeing (VAR) as one of the refereeing team members who can assist the referee in making a decision using the television image with replays, but only for "clear and obvious errors or serious undetected incidents concerning goal/non-goal, penalty/no penalty, direct red card (but not the 2nd yellow card), or in the case of the referee commanding a wrong identification in one warning

10. Patrícia Sousa Borges (2021), "*Direito Penal Desportivo: a corrupção desportiva e o árbitro de futebol*", in: Nova Causa Edições Jurídicas: Braga, pp. 57-58.

11. International Football Association Board (2024), "Laws of the Game", available at <https://www.theifab.com/>.

12. Cedric Gottschalk; Stefan Tewes; Benjamin Niestroj (2020), "The Innovation of Refereeing in Football through AI", in: *International Journal of Innovation and Economic Development*, vol. 6, issue 2, Germany, p. 40, available at <https://www.dfl.de/en/innovation/xgoals-changing-how-we-evaluate-goalscoring-chances/>.

or expelling of a team player who committed an infraction¹³. Well, strictly speaking, we were not talking about AI systems yet, but about the introduction of technological systems in sports practice that reflected the incessant search for sports truth, and that, consequently, drove the introduction of AI systems as auxiliary tools in the referee's decision-making process.

Specifically, the *Bundesliga*, a German league, presented in 2019, a tool called *xGoals*, consisting of an algorithm that collects data from the game, namely, constitution of the teams and names of athletes, as well as the player's position on the field and based on that information presents a probability of a player scoring a goal. In this study, one can read that the “factors used in determining that probability include the angle of the shot, the shooter's distance from goal, the speed they are running at, whether there is an opponent marking them or not, where the goalkeeper is positioned and whether there are other defenders between the shooter and the goal”¹⁴.

Thus, the great revolution in assisting the football referee, motivated by the use of AI, appeared in 2022, with FIFA, world football's governing body, announcing that after conducting a three-year research work, it culminated with the conclusion that the introduction of algorithms assisting the assistant referees would contribute to the real purpose of sport: the sporting truth¹⁵. Therefore, Nicolas Evans¹⁶, leader of FIFA's team dedicated to innovation, implementation, and certification of new technologies, created an AI system, called - semi-automated offside technology - which consists in the introduction of twelve cameras near the field of play, capable of tracking ninety-nine body movements of the players, which together with the placement of a sensor on the ball allow the

13. International Football Association Board, (2024),), “Laws of the Game”, available at <https://www.theifab.com/>.

14. Cedric Gottschalk; Stefan Tewes; Benjamin Niestroj (2020), “The Innovation of Refereeing in Football through AI”, *op. cit.*, p. 40.

15. For the development of the study of the principles that guide Sports Law, see Patrícia Sousa Borges (2021), “*Direito Penal Desportivo [...]*”, *op. cit.*, pp. 44-51.

16. In addition to this introduction, it was recently announced by FIFA that the Qatar Football World Cup – 2023, will feature a new player data analysis tool. The system was developed by FIFA's High Performance Department, headed by Arsène Wenger, FIFA's Head of Global Football Development. In a statement Arsène Wenger had the opportunity to explain the reasons behind the introduction of this system, “*We would like to share our vision of using football data analytics combined with technical expert interpretation to create a new football intelligence, allowed everyone to better understand the game,*” adding further that, “*Enhanced football intelligence will be our blueprint for how we analyse football in the future.*” - v., Arsène Wenger (2022), “*FIFA to introduce enhanced football intelligence at FIFA World Cup 2022™*”, Fédération Internationale de Football Association: Switzerland, available at <https://www.fifa.com/technical/football-technology/media-releases/fifa-to-introduce-enhanced-football-intelligence-at-fifa-world-cup-2022-tm>.

identification of the offside infraction¹⁷ in a few seconds. The result obtained is immediately communicated to the VAR (video assistant referee), which will be equipped with all the tools to validate the referee's decision, alerting them to the error, in case of a wrong interpretation. Regarding this AI system, Pierluigi Collina, Chairman of the FIFA Referees Committee, said that its introduction will allow "faster and more accurate decisions"¹⁸ and will contribute to the confidence of fans in the competition, since the images captured by this system may begin to be displayed on screens in the stadiums, providing feelings of credibility and sports truth.

Therefore, ultimately, when considering the replacement of any element of the refereeing team, we only reach as possible the replacement of the assistant referee¹⁹ when making certain specific decisions, such as in the analysis of offside, of the complete passage of the ball from the goal line, of a foul occurred inside or outside the penalty area. However, we cannot forget that, and moreover, based on what Pierluigi Collina argues, "the referees and the assistant referees are still responsible for the decision on the field of play"²⁰, because the last decision will always, and in any case, rest with the (human) referee. Therefore, we argue that the duties of the assistant referees are not limited to the factual assessment of the situations described above and that, on the field of play, they are required to make a complementary assessment and to assist in the final decision of the main referee. Moreover, all decisions that affect the truth, whether it is to assess the casuistic situations of people's lives, or to assess sporting loyalty, can be taken by no one else than a human being²¹.

17. International Football Association Board, (2024),), "Laws of the Game", Game Law violation no 11, available at <https://www.theifab.com/>.

18. Pierluigi Collina (2022), "*Semi-automated offside technology to be used at FIFA World Cup 2022™*", Fédération Internationale de Football Association: Switzerland, available at <https://www.fifa.com/technical/media-releases/semi-automated-offside-technology-to-be-used-at-fifa-world-cup-2022-tm>.

19. According to Law 6, the "other match officials" are the two assistant referees, the fourth official, the two additional assistant referees, the reserve assistant referee, the video assistant referee (VAR) and at least one video assistant referee (AVAR). These refereeing team members will assist the referee in controlling the game in accordance with the Laws of the Game, but the final decision will always be made by the referee. - v. International Football Association Board, (2024), "Laws of the Game", available at <https://www.theifab.com/>.

20. Pierluigi Collina (2022), "*Semi-automated offside technology to be used at FIFA World Cup 2022™*", Fédération Internationale de Football Association: Switzerland, available at <https://www.fifa.com/technical/media-releases/semi-automated-offside-technology-to-be-used-at-fifa-world-cup-2022-tm>.

21. Considering the same regarding the use of AI in the Judiciary, see Sónia Moreira (2021), "Artificial Intelligence: Brief considerations regarding the Robot-Judge", [Maria Miguel Carvalho, Sónia Moreira Eds], in: *Governance & Technology* - E-Tec Yearbook, JusGov - Research

2.3. Civil liability regime vs AI in Sport:

Initially, the European Parliament Resolution of 20 October 2020, with recommendations to the Commission on a civil liability regime for artificial intelligence (2020/2014(INL)) presented a Proposal for a Regulation of the European Parliament and of the Council on Liability for the Operation of Artificial Intelligence-Systems based on a strict liability regime in case of High Risk AI systems (Article 4), leaving the other AI systems “subject to fault-based liability, unless stricter national laws and consumer protection legislation is in force” (Whereas (17))²².

However, in September of 2022, the European Commission presented a proposal for a Directive on the adaptation of the rules of Extra-Contractual Civil Liability to AI, called “Proposal for a AI Liability Directive”²³: in one hand, the European Commission proposed a Directive and not a Regulation; on the other hand, this proposal established subjective civil liability (not a strict liability regime), although it provided for some situations that eased the burden of proof for the injured party.

In this last Proposal, the burden of proof would be on the injured party, meaning it would be up to them to prove that there was negligent or intentional harmful behaviour (action or omission) on the part of the person potentially responsible for producing the damage, as well as a causal connection between this fault and the damage. The injured party had to prove the verification of all the requirements of subjective civil liability. The problem was that, in the specific case of actions or omissions perpetrated with the use of AI, there are certain specific features - such as opacity, autonomous behaviour and complexity - which might hinder the burden of proof on the injured party.

Therefore, the AI Liability Directive Proposal defined rules regarding access

Centre for Justice and Governance/University of Minho - School of Law: Braga, pp. 306-307, available at <https://www.jusgov.uminho.pt/publicacoes/etec-yearbook-2021-2/>.

22. European Parliament (2020), Resolution of 20 October 2020, with recommendations to the Commission on a civil liability regime for artificial intelligence (2020/2014(INL)), available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=oj:JOC_2021_404_R_0006.

23. Under the terms of that proposal, the Directive would be applied jointly with Directive 85/374/EEC - Directive on Product Liability -, i.e., maintaining for this part, the same assumption of the proposal of the Civil Liability Regime applicable to Artificial Intelligence, published in 2020. In this regard, it should be noted that a proposal to amend Directive 85/374/EEC was also presented. - v. European Commission (2022), Proposal for a Directive of the European Parliament and of the Council on Product Liability Directive: Brussels, available at https://single-market-economy.ec.europa.eu/document/3193da9a-cecb-44ad-9a9c-7b6b23220bcd_en. However, only the proposal of amendment of the Directive of Defective Product Liability managed to see the light of day, being adopted in 2024 (see below). Unexplicably, the proposal of Directive for Liability of AI was recently withdraw.

to and conservation of evidence and established a series of rules to ease the burden of proof of the injured party (Article 3).

Very briefly, these rules were the following:

a) if the AI system provider did not provide the injured party with the relevant information to enable that party to decide whether or not to initiate legal proceedings, the national court might require it to do so (Article 3, number 1); if they did not comply, the court would presume that the provider failed to fulfil a relevant duty of care, considering that the elements requested would make it possible to provide such proof. However, this presumption of the defendant's fault was rebuttable (Article 3, number 5);

b) in the event of (proven or presumed) fault on the part of the supplier, the existence of a causal link was presumed (Article 4, number 1). This presumption was also rebuttable (Article 4, number 7);

c) for systems that are not high-risk – such as the AI systems in Sport, as determined *a contrario sensu* by article 6.^o of the recent Artificial Intelligence Act of the European Union -, this presumption was only applicable if the national court considered that it was excessively difficult for the plaintiff to prove the causal link (Article 4, number 5).

In numbers 2 and 3 of article 4 of the Proposal, the European Commission specified the actions that might be brought as a result of damage caused by a high-risk AI system, specifically the damage that might be caused by the use of an AI system in courts of law (art. 6.^o of AIA).

We believe that this proposal for a Directive on Civil Liability for AI tried to attend to the specificities that the use of AI represents in civil society and to safeguard the injured party, namely, as to regard the difficulty of producing evidence. However, it should be more protective: a strict liability regime would be preferable for high-risk systems²⁴; as for non-high-risk ones, the Proposal should, at least, establish a rebuttable general fault presumption. It is much easier for the person that controls the AI system to refute his/her fault than otherwise. On the other hand, in these cases the Proposal used indetermined concepts, such as “excessive difficulty” for the claimant to prove the causal link. As national courts are the ones to determine what might be “excessively difficult” for the claimant, our concern was that this solution would inevitably lead to a fragmentation of the

24. Some authors consider that “[c]hoosing not to harmonise all rules at the EU level also preserves the coherence of the national tort liability systems”, preventing unbalances and the complexification of the systems, allowing the stakeholders to maintain the legal regime that they already know. “Moreover, some jurisdictions already have strict national-based liability regimes that could potentially be applicable to some AI applications, such as autonomous vehicles”. Orian Dheu, Jan de Bruyne, Charlotte Ducuing (2022), “The European Commission’s Approach to Extra-Contractual Liability and AI – A First Analysis and Evaluation of the Two Proposals”, in: *SSRN*, pp. 4-5, available at <https://ssrn.com/abstract=4239792>.

legislation at an European level, leading to an undesirable level of uncertainty and insecurity in what was intended to be a coherent internal market²⁵.

Despite all these concerns, we could not argue that the presumptions proposed by the EU legislator (even if rebuttable) might represent an important milestone for the continuity of belief in an “ecosystem of trust”²⁶ for all users of algorithmic systems.

Unfortunately, this Proposal was withdrawn on February of 2025²⁷ and the EU has not presented yet another solution. It is said that probably the European Commission considered several voices stating that too much regulation was prejudicial to the development of this industry²⁸. Although it is always possible to call the application of the new Directive on Liability for Defective Products²⁹ (approved at 2024³⁰), which was proposed at the same time as the one now withdrawn, there might be situations left with lack of legal response, as the New Products Liability Directive is only applicable when a product (which now includes software programmes) is defective. Will that be enough?

3. A Brief Conclusion

It seems to us that the use of algorithmic systems in sport can be considered to carry a minimum risk, and that, therefore, we agree with its inclusion in the catalogue of low-risk AI systems by the European Union. Despite the obvious

25. Agreeing with us, Henrique Sousa Antunes says that “despite the proposal calling for legal certainty, it is, in fact, incapable of preventing the fragmentation of the rules applicable to damage caused by high-risk artificial intelligence systems, considering, first of all, the nature of the differences between the national legal systems in terms of the rules on civil liability for dangerous activities”. V. Henrique Sousa Antunes (2023), “Non-contractual liability applicable to artificial intelligence: towards a corrective reading of the European intervention”, [Luisa Antonioli, Paola Iamiceli Eds], *The making of European Private Law: changes and challenges*, University of Trento, p. 3, available at <https://ssrn.com/abstract=4351910>

26. European Commission (2020), “*White Paper on Artificial Intelligence — A European approach to excellence and trust*”, available at https://commission.europa.eu/publications/white-paper-artificial-intelligence-european-approach-excellence-and-trust_en.

27. See <https://www.europarl.europa.eu/legislative-train/theme-a-europe-fit-for-the-digital-age/file-ai-liability-directive>, and <https://cdt.org/insights/press-release-withdrawal-of-the-ai-liability-directive-proposal-raises-concerns-over-justice-for-ai-victims/>.

28. See <https://pt.euronews.com/my-europe/2025/03/04/a-ausencia-de-regras-de-responsabilidade-especificas-para-a-ia-deixara-as-vitimas-sem-recu>.

29. For a very brief appreciation of this legislative act, see Eva Sónia Moreira da Silva (2025), “*Temas de Responsabilidade Civil*”, Almedina: Coimbra, pp. 140-151.

30. *Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC*, available at <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32024L2853>.

analogy between the nature of the activity of a judge of law and that of a sports referee, the decision taken by a judge of law immediately interferes with the rights, freedoms and guarantees of the citizen. Its replacement by a system of algorithms may put in crisis the principle of human dignity. To this extent, the use of AI in the judiciary may produce more damages or losses to the citizen than its use in Sport.

In truth, we applauded the concern of the European Union regarding the use of AI in such varied activities, since it had constantly and attentively proposed significant changes in civil liability regimes, with a view to maintaining a safe and credible digital environment, proposing harmonized rules for all Member States, thus preventing each country from presenting the regime that suits them best. However, the withdraw of the Proposal of a Directive on Civil Liability of AI left us very concerned with the possible lack of legal protection of the damaged party.

All said, there are good news for Sport, as Sports Truth will be better achieved with the use of reliable AI tools; but also, bad news, if we consider that our law may not be enough to answer to our question: who pays for these damages?

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