La decisione nel prisma dell'intelligenza artificiale

a cura di
Ermanno Calzolaio

Wolters Kluwer
CEDAM

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1. The task of judging and the option of an artificial judge.

We live in a digital age where digital technologies invest most of our daily activities and where Artificial Intelligence (AI) is increasingly integrated in our society [1]. The use of algorithms in the judicial process has been questioned since the last years of the past century and is supported by the idea of preventing the mistakes and biases of the judge.

Nowadays, AI introduces the possibility of developing systems of predictive justice and eventually to attributing the task of solving controversies to an artificial judge.

AI is able to collect a huge number of cases and to compare

[1] The meaning of "Artificial Intelligence" and the use of this expression are wide debated in literature. It is outside the scope of the present paper to describe the main thesis on the point. For the first references, I limit myself to referring to the work of S. J. RUSSELL - P. NORVIG, *Artificial Intelligence: A Modern Approach*, 3rd ed., Harlow, 2016, p. 1 ff.; cf. D. HAREL, *Computers Ltd: What They Really Can't Do*, Oxford, 2000, reprinted in 2012, where on p. 194 the Author explains: «The very phrase "Artificial intelligence" [...] seems to be a contradiction in terms. We tend to view intelligence as our non-programmable and hence non-algorithmic characteristic. To many people the very idea of an intelligence machine doesn't sound quite right».

a fact with thousands and thousands of preceding ones with a very narrow margin of error, thus exceeding human skills in managing a great amount of data and comparing facts [2]. Moreover, AI has the capacity to learn from examples and improve its performance without humans explaining how to accomplish the task it is given [3]. Thus, it is potentially autonomous and unaffected by contextual conditions.

Many experiments show the ability of artificial intelligence to predict the solution of a case better than humans. Predictive software has been used in the United States since the last years of the past century and some European systems [4] are also experimenting with it.

The recent EU General Data Protection Regulation provides specific guarantees for the protection of personal data, especially when used for profiling and automated decision-making, and protects the right of a person not to be subjected to a completely automated decision process [5]. Art. 22 of the Regulation states: «The data subject shall have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her». The article introduces significant exceptions to the right, such as in the case of an explicit consent by the data subject and the case of a decision «[...] authorized by Union or Member State law to which the controller is subject and which also lays down suitable measures to safeguard the data subject's rights

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[2] D. DOBREV, *The Human Lawyer in the Age of Artificial Intelligence: Doomed for Extinction or in Need of a Survival Manual*, in *J. Int'l Bus. & L.*, 18, 2018, p. 39 ff., at 42; S. MASON, *Artificial Intelligence: Oh Really? And Why Judges and Lawyers Are Central to The Way We Live Now - But They Don't Know It*, in *Computer and Telecommunications Law Review*, 2017, p. 213 ff., at 217.

[3] Cf. H. SURDEN, *Machine Learning and Law*, in 89 *Washington Law Review*, 2014, p. 87 ff.

[4] Cf. L. LARRET-CHAHINE, *La justice prédictive*, in this volume, p. 161 ff.

[5] The analysis of the EU General Data Protection Regulation is outside the scope of the present paper, for a comment on the topic cf. S. HÄNOLD, *Profiling and Automated Decision-Making: Legal Implications and Shortcomings*, in M. Corrales - M Fenwick - N. Forgó, Robotics (Eds.), *AI and the Future of Law*, Singapore, 2018, p. 123 ff. and references ivi; G. RESTA, *Governare l'innovazione tecnologica: decisioni algoritmiche, diritti digitali e principio di uguaglianza*, in *Politica del diritto*, 2019, vol. 2, p. 199 ff., at 204.

and freedoms and legitimate interests [...]». The Regulation, therefore, aims to preserve human dignity and avoid a dehumanised judicial process, but it does not prevent the judge from substantially basing his decision on the solution provided by AI. The issue raises a set of questions, including the influence of a solution given by AI on the judicial process of knowledge and the implicit cognition [6] generated by the interplay between AI and a human judge. In this context, one main problem arises from the use of AI in creating "risk assessments" to aid judges in making decisions [7]. Indeed, some algorithms used in US courts proved to be "remarkably unreliable" in forecasting events such as recidivism in violent crimes. The COMPAS system (Correctional Offender Management Profiling for Alternative Sanctions), used to predict recidivism in many US lower criminal courts, turned out to be discriminatory on the basis of race. In fact, the COMPAS risk assessment is based upon information gathered from the defendant's life on the bases of questions and an interview with the defendant covering data concerning the defendant's criminal life, demographic information and whether anyone in the subject's family has ever been arrested or is divorced [8]. Questions include also the subject's high school grades and moral hypotheticals, such as whether the subject agrees or disagrees with some statements. Although the questions on which the risk assessment is based do not show a bias in themselves, the results given by the Algorithm were revealed as gravely biased against black defendants and had high percentage of error.

The probability of bias in the COMPAS risk assessment was admitted by the courts; nevertheless, the use of COMPAS was upheld underlining that it consists in a support for the judge's decision and not in a substitution of the judge. In the case *State of Wisconsin v. Loomis* [9], decided in 2016, the Wisconsin Supreme Court was asked to deal with the compatibility of the

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[6] See *infra*, para. 3 and refererences ivi.

[7] Lord Hodge, *Law and Technological Change*, speech at the British Irish Commercial Bar Association, 9 April 2019, available at https://www.supremecourt.uk/docs/speech-190404.pdf.

[8] Cf. S.K. Katyal, *Private Accountability in the Age of Artificial Intelligence*, in UCLA L. Rev., 66, 54, 2019, p. 85.

[9] *State of Wisconsin v. Eric L. Loomis*, 13 July 2016, 881 N.W. 2d 749.

use of COMPAS as a tool for sentencing in the circuit courts. The system was used by the Circuit Court to deny a defendant's motion for post-conviction relief. The decision was not made automatically by the Algorithm: the Court ordered an investigation into the facts to evaluate the risk of recidivism. The investigation included also the consultation of COMPAS risk assessment. The Algorithm established that the defendant presented a high risk of recidivism.

The Circuit Court stated that the algorithm solution was used only to corroborate its finding, and that it would have imposed the same sentence regardless of whether it considered the COMPAS risk scores. Moreover, the Court was aware of the risks related to using COMPAS when sentencing. Indeed, the report on the investigation on risk of recidivism presented to the Court included a description of how the COMPAS risk assessment should be used and cautioned against its misuse.

The defendant appealed the decision, on the basis of the violation of his right to a due process of law, under three different aspects: «[...] it violates a defendant's right to be sentenced based upon accurate information, in part because the proprietary nature of COMPAS prevents him from assessing its accuracy; it violates a defendant's right to an individualised sentence; and it improperly uses gendered assessments in sentencing» [10].

The Wisconsin Supreme Court concluded that the Algorithm can be used when sentencing, but it established methodologies and limitations for the use of COMPAS, in order to bring it into line with the right of a due process.

Firstly, the right of the defendant to be sentenced based upon accurate information is to be protected through an adequate awareness of the courts concerning the risk of COMPAS errors. The courts have to be apprised of some problems, namely the need for the tool to be monitored and re-normed for accuracy, due to the change of population; the risk that the algorithm will give a disproportional classification of a minority offender as having a higher risk of recidivism; the fact that the decision of the algorithm is based on a comparison with a national sample, so it does not limit

[10] *State of Wisconsin v. Eric L. Loomis*, cit., at 757.

the evaluation to cases from the same State; the fact that the proprietary nature of the algorithm may prevent it from disclosing how risk scores are to be determined. This information should encourage a cautionary approach to the solutions proposed by the algorithm.

Secondly, the Court stated that the right of an individualised sentence is protected every time the decision is not the result of an automated process, but the court analyses the results given by COMPAS together with other factors, so as to achieve the best solution for the case.

Finally, on the issue of gender discrimination, the Court recognised that COMPAS risk scores take gender into account, however, the Court stated that the failure to distinguish between men and woman misclassify both genders, achieving more unfair results: «Thus, if the inclusion of gender promotes accuracy, it serves the interests of institutions and defendants, rather than a discriminatory purpose» [11].

The cautions and limitations in the use of COMPAS, established by the Wisconsin Supreme Court in the *Loomis* case, seem unable to prevent any algorithm bias in risk assessment. In fact, bias can creep in at many stages of the AI learning process: not only at the stage of the collection of data (it may happen that data collected are unrepresentative of reality or reflect existing prejudice) but also in the preparation stage, when the attributes that the algorithm has to consider are selected, and during the processing [12]. The method of data processing is difficult to control, as it acquires autonomy even from the programmers who determine the processing rules. Again, these rules are quite difficult to access and understand for the courts. Finally, the influence of the algorithms on the cognitive process of the judge is still underestimated.

The problem of AI bias has recently been approached by identifying the ethical by design as a priority and premise of the application of AI in judicial systems.

In the first European Ethical Charter on The Use of Artificial Intelligence in Judicial Systems and Their Environment, the need for an ethical by design approach is

[11] *State of Wisconsin v. Eric L. Loomis*, cit., at 766.
[12] Cf. S.K. KATYAL, *op. cit.*, p. 89.

clearly highlighted [13]. The first principle of the Charter is focused on the respect for fundamental rights to «[...] ensure that the design and implementation of artificial intelligence tools and services are compatible with fundamental rights». The comment states:

> «When artificial intelligence tools are used to resolve a dispute or as a tool to assist in judicial decision-making or to give guidance to the public, it is essential to ensure that they do not undermine the guarantees of the right of access to the judge and the right to a fair trial [...] They should also be used with due respect for the principles of the rule of law and judges' independence in their decision-making process. Preference should therefore be given to ethical-by-design or human-rights-by-design approaches» [14].

These approaches are to be encouraged, as the protection of human rights heavily depends on the ethical safeguards in the interplay between human and machine. There is no certainty, however, that they will succeed in assuring the principle of fair trial. One problem may derive from the difficulty in containing the influences exercised by AI on the judge. From this perspective, the right to access the algorithm and be informed of how risk scores are determined, although important, does not always assure the independence of judge. Another problem relates to the possibility of developing an adequate ethical-by-design approach for judicial decision. One may wonder if the ethical principles that the judge (and the AI who supports the judge) needs to make a decision can be fixed and projected in advance or if they need to be interpreted according to the context where the judge gives the judgment. The question is if principles and values can be abstracted or, conversely, if they result from a constant mediation between law and reality. Law is a contextual science and fairness in law depends also on specific

[13] European Ethical Charter on the Use of Artificial Intelligence in Judicial Systems and Their Environment, Strasbourg, 3 - 4 December 2018, available at https://rm.coe.int/ethical-charter-en-for-publication-4-december-2018/16808f699c.

[14] *Ibidem*.

contextual elements: judicial interpretation cannot develop outside and irrespective of specific circumstances, isolated from a precise time and cultural dimension [15]. Consequently, the ability of AI to dissociate itself from contexts, which is the feature that assures its independence and neutrality, at the same time risks being one cause of unfairness in an AI decision. The issue brings to mind the question: «How and to what extent does judicial interpretation relate to the evaluation of the contextual elements of the case?».

Ultimately, the question is: «How and to what extent does judicial interpretation presume a human judge?». The answer to this complex problem concerns the idea of justice we want to embrace and the values and the virtues in law that we want to preserve and pursue. It invests the influence of the judge's humanity in decision-making and the role of the judge in decision making.

2. Law and interpretation or law as interpretation.

The inquiry into the role of the human being in judicial decisions requires an investigation of the interplay between law and interpretation and the mutual influence between law and who interprets law. The issue recalls an age old theme that has been tackled in different ways in all legal experiences, in the course of history, and can be expressed in a concise question: «Does the law exist without interpretation?». Traditionally, the problem is approached differently by common law and civil law systems, the former assuming the idea of law as practice, the latter considering the law as a science.

The English experience is one of the best examples among the European legal systems of an approach toward law as a practice, which has a set of implications on the relationship between law and judicial interpretation. On the one hand, English common law, as case law, has been developed over centuries as judicial interpretation; in modern times, the recognition of the doctrine of binding precedent did not change the nature of case law as a discursive law. Judicial precedents do not consist of legal definitions: they are binding rules but they conserve their nature

[15] D. Dobrev, *op. cit.*, p. 64.

of illustrative and explanatory principles enunciated by judges for a particular case. Thus, «The reason and spirit of cases make law, not the letter of particular precedents» [16]. On the other hand, statutory law, that today covers the majority of English law, acquires its effectiveness through statutory interpretation. Since the early common law, the law incorporated in cases has always been the principal reference for statutory interpretation. In *The Institutes of the Laws of England*, Lord Coke explained: «[...] the surest construction of a statute is by the rule and reason of common law» [17].

The English rules of statutory interpretation are tools elaborated by judges for judges, in order to communicate the meaning of the text of a statute and to convert the general statement of a statute into a concrete rule to be applied in the case under judgement. In the course of history, the approach of judges towards statutory interpretation has also led to the attempt to use equity as a canon of interpretation and give the statute the "internal sense of it", instead of that emerging from the words of the text. This idea, which has always been tempered by the profound respect for the principle of Parliamentary sovereignty, can also be traced in some theories on statutory interpretation up to the eighteenth century. So, Blackstone wrote:

> «[...] the most universal and effectual way of discovering the true meaning of a law, when the words are dubious, is by considering the reason and spirit of it; or the cause which moved the legislator to enact it. For when this reason ceases, the law itself ought likewise to cease with it [...]. From this method of interpreting laws, by the reason of them, arises what we call *equity*; which is thus defined by Grotius, "the correction of that, wherein the law (by reason of its universality) is deficient"» [18].

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[16] It is the famous opinion of Lord Mansfield in the case *Fischer v. Prince*, 3 Burr 1363, that is still valid today, cf. C.K. ALLEN, *Law in the Making*, 7th ed., Oxford, 1964, p. 216 ff.

[17] SIR. E. COKE, *The First Part of the Institutes on the Laws of England; or, a Commentary upon Littleton*, 18th ed., London, 1794, III, chap. 8, para. 272.

[18] W. BLACKSTONE, *Commentaries of the Law of England*, 1765-69, London, vol. 1, p. 61.

In the nineteenth century, the English judges' attitude towards statutory interpretation was restrained in accordance with the legalistic tendency, and the adherence to the literal meaning of the text was considered a safeguard of the supremacy of Parliament. The relationship between law and interpretation established in that period, however, conserved the fundamental idea that legislation is not enacted in a vacuum, but it presumes common law. The true meaning of legislation is discovered through its application to concrete cases, where legislation becomes experience, filtered by judicial reasoning [19].

On the Continent, conversely, the influence of legal positivism led to the recognition of a supremacy of legislation over law: law is legislation incorporated in the text and interpretation is a bare application of the text. The main reference is to the idea of interpretation expressed by Montesquieu, according to whom judges, like automatons, «[...] are only the mouths that pronounce the words of the law, inanimate beings, who can moderate neither its force nor its rigor» [20].

The myth of law without interpretation had already been dashed against reality by the end of the nineteenth century. In the French system, the law professor Geny originated the free scientific research movement in jurisprudence; he criticised the traditional approach toward the interpretation of written law and recognised the creativity of judicial activity. The judge has to shape the decision on the basis of a free search of the rule, that is «[...] outside the reach of any positive authority» [21]. At the same time judicial research needs to be "[...] objective, because it can be solidly based upon objective elements which systematic-scientific jurisprudence alone can reveal" [22]. Along these lines, Geny underlined that there is no

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[19] Z. BANKOWSKI - D. N. MACCORMINK, *Statutory Interpretation in the United Kingdom*, D. N. MacCormink - R.S. Summers (Eds.), *Interpretating Statutes. A Comparative Study*, Aldershot, 1991, p. 360.

[20] C. L. DE SECONDAT MONTESQUIEU, *The Spirit of the Laws*, translated and edited by A. M. Cohler - B.C. Miller - H.S. Stone, Cambridge, 1989, p. 163.

[21] F. GÉNY, *Méthode d'Interprétation et Sources en Droit Privé Positif*, 2d. ed., English translation by the Louisiana State Law Institute, Paris, 1954, p. 355, para. 156.

[22] *Idem*.

system of interpretation that can flatter itself for having completely eliminated the personal evaluation of the interpreter; thus, the conscience and the intuition of the judge are involved in the process of interpretation: «[...] the principles revealed by conscience and recognised by human reason through intuition are the first necessary directive for the free search of an interpreter of positive law» [23].

In the first decades of the XX century, the attack on formalistic legal interpretation found decisive support in the movement of legal realism, developed among American scholars and then widespread in both common law and civil law countries.

Legal realism emphasised the role of humanity in judicial decisions and went far as admitting that they have an irrational component [24]. Holmes, who is considered the initiator of the movement, stated that: «The life of law has not been logic; it has been experience» [25], pointing out a close relationship between law and interpretation and between law and experience. Firstly, the relationship between law and interpretation is to be analysed according to a logic of inclusiveness. Secondly, there is an intimate relationship between law and experience: in the judicial process law becomes experience.

Law as experience involves the humanity of the judge, not only his rationality.

Every judicial decision implies a double process of interpretation: on the one hand, the judge is asked to read the facts of the case, selected and produced during the process by the parties; on the other hand, the judge has to interpret law, in order to provide justice in the concrete case, to find the right solution for the case.

The facts of the case impact and influence the cognitive process of the judge and the law itself that the judge is asked to interpret. The Judge, like a scientist, is involved in the study of phenomena. However the judge, unlike the observers of other physical phenomena, deals with the behaviour of

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[23] *Ibidem*, p. 365, para. 160.

[24] V. TUMONIA, *Legal Realism and Judicial Decision-Making*, in *Jurisprudence*, 2012, 19(4), p. 1361 ff.

[25] O. W. HOLMES, *The Common Law,* New York, [1881] 1991, p. 1.

human beings [26]. Thus, the task of judging implies human relationships and this has an influence on the process of study.

The idea of a judge that applies the law to the facts, according to a linear process of interpretation, starting from the reading of the appropriate rule and ending with the judicial decision, when the rule is applied to the facts, seems to be unrealistic and even misleading. Conversely, the judicial decision follows a circular process: the impact of the judge on the facts leads to a first pre-comprehension of the question submitted to him. The relationship between the judge and parties, in the case in question, forges the judge's first interpretation. The initial comprehension is then checked through a process of reinterpretation and revision of the first idea. The cognitive process of the judge, therefore, is a round trip [27]. Along these lines, law is interpretation and not a premise of interpretation. Any phase of this movement stimulates the human nature of the judge in the interplay with the parties of the process and the facts of the case, as well as in analysing the rules and checking his first intuition.

3. The influence of the human judge on judicial decisions.

The question concerning the humanity of the judge and its involvement in the judicial decision has long been investigated in legal literature, with opinions differing as to the possibility and, if necessary, the opportunity of correcting its effects on the judgement. The issue was at the centre of the legal realism movement, mentioned above. In this scenario, the studies of Roscoe Pound on the influence of non-legal elements in the decision-making process assume major importance. The Author states that there is a discretionary element in judicial justice:

> «Two antagonistic ideas, the technical and the discretionary, may be seen at work throughout the administration of

[26] W.W. Cook, *The Logical and Legal Basis of the Conflict of Laws,* in *Yale L. J.*, 33, 1924, p. 457, at 475.

[27] L. Moccia, *Riflessioni sparse (e qualche involontario aforisma) su interpretazione e diritto*, in L. Moccia, *Comparazione giuridica e prospettive di studio del diritto*, Lavis, 2016, p. 47.

> justice. These might well be called the legal and the non-legal element in judicial administration. [...] in no legal system, however minute and detailed its body of rules, is justice administered wholly by rule, without any recourse to the will of the judge and his personal sense of what should be done to achieve justice in the cause before him. Both elements are to be found in all administration of justice» [28].

In a famous paper published in 1931 Jerome Frank, commenting on Pound's theory, questioned if judges are human and criticised the possibility that they might distance themselves from their human passions and character [29]. Human nature is intimately mingled with judicial technique and the immense importance of personal elements in court justice cannot be ignored. Whereas according to other scholars, the judge has the ability to distinguish between law and what law is not, departing from social, economic, political and physiological influences. All these pressures are conducive to judicial discretion, but rules and discretion in a judicial process are separable:

> «The way in which we can predict how a judge will decide an issue on which a rule of law exists is after all different from the way in which we can anticipate from observed past uniformities how a muscle will react when brought into contact with an electric current. In the case of the muscle, prediction does not have to assume that the muscle will react with conscious intent to conform to a rule formulating its proper behaviour under the circumstances. That is, however, precisely what a judge can and must in most cases be expected to do» [30].

Jerome Frank criticised the attempt to ask the judge to think

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[28] R. POUND, *Justice According to Law*, in *Columbia Law Review*, 13, 1913, p. 696.

[29] J. FRANK, *Are Judges Human? The Effect on Legal Thinking of the Assumption That Judges Behave Like Human Beings*, part I, in U. Pa. L. Rev., 80, (1931-1932), p. 17 ff.

[30] J. DICKINSON, *Legal Rules: Their Function in the Process of Decision*, in *U. Pa. L. Rev.*, 1930-1931, 79, p. 833, at 839.

in an artificial way and stated that: «He [the judge] will be ashamed of the way his mind works humanly despite his efforts. He will waste precious hours attempting to think inhumanly [...]» [31].

The judge is first of all a human being who looks at the world through the lens of his own experience, education, culture and vision of life. His humanity filters into the judicial decision and influences the development of the judicial process. The personality of the judge, his preconceptions about the issues that he is asked to judge and about the parties of the process as well as his emotions influence the meaning of the facts subjected to his interpretation.

The debate developed by the legal realism movement in the first decades of the last century is extremely relevant in our post-modern age, where the role of the judge as an actor of the development of law, instead of a bare applicator of legislation, clearly emerges. The multiple and multilevel sources of law, on the one hand, and the fast-changing social reality, on the other, put the task of judging outside the comfortable binaries and taxonomies of legal positivism and invest the judge with the complex task of confronting legal diversity and even with contrasting views of legal phenomena. The system challenges the technical and legal skills of the judge, but also his character and personality.

An Italian Constitutional court judge recently affirmed that the syllogistic process does not describe the judicial interpretation in our post-modern age [32]. Conversely, in the decision the judge has to search for the solution and this research constitutes a discovery that implies a process that is inconsistent with syllogism. In this process the rationality of the judge and his/her logical capacity are involved, but also his intuition, perception and comprehension are all relevant at an axiological level.

Good character has always been considered a fundamental feature of judges in the common law tradition, where the

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[31] Jerome Frank, *Are Judges Human?* (...), cit., p. 24.

[32] P. Grossi, *La invenzione del diritto: a proposito della funzione dei giudici*, in *Riv. Trim. Dir. Proc. Civ.*, 2017, p. 831; L. Moccia, *Riflessioni sparse (e qualche involontario aforisma) su interpretazione e diritto*, cit., p. 43 ff., at 50.

development of case law was due predominantly to judges of deep knowledge and strong personality. Even recently Lady Hale, in a speech about *Moral Courage in the Law*, explained that an effective judiciary needs well qualified and learned judges [33]. However, a judge with these essential characteristics is not necessarily a good judge: he or she also needs to show moral courage. Moral courage has different meanings, including «[...] courage to recognise and stand up to our own prejudices, preconceptions and predispositions – and the first step is recognising that we may have them» [34].

The contemporary legal literature commonly admits that the judge's temperament has a certain degree of influence on the solution of the case. So the task of judging «[...] is likely to be influenced by temperament, emotion, experience, personal background and ideology (influenced in turn by temperament and experience), as well as by an 'objective' understanding of what should be the 'best' legislative policy to adopt in order to resolve the issue in the case» [35].

In this scenario, a new contribution derives from neuroscience research applied to law and judicial decision. Neuroscientists revealed that the personality of the judge and his/her emotional character influence the cognitive process of judicial decision, at a level that the judge's rationality cannot control. Some studies show that judges can fall into implicit biases, into cognitive traps, and how their decisions are deeply influenced by affective sensations [36].

The myth of the blind judge recalls the idea of pure rationality in decision-making, whereas the development of cognitive science demonstrates that the decision is partly dependent on the judge's human nature, and it is impossible to

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[33] LADY HALE, *Moral Courage in the Law*, The Worcester Lecture 2019, Worcester Cathedral, 21 February 2019, available at https://www.supremecourt.uk/docs/speech-190221.pdf; LORD CLARKE, *Selecting Judges: Merit, Moral Courage, Judgment and Diversity*, in *High Ct. Q. Rev.*, 2009, 5(2), p. 49, speaking about the need for judges to have good character: «Moral courage rather than moral cowardice is needed for good character to be satisfied».

[34] LADY HALE, *op. ult. cit.*, p. 8.

[35] R.A. POSNER, *How Judges Thinks*, Harvard, 2010, p. 173.

[36] Among the wide literature, cf. A. BETHOZ, *Emotion and Reason: the Cognitive Neuroscience of Decision Making*, Oxford, 2006.

isolate intellectual functions in a human being, without considering their interplay with emotions and sensations. Judges are subject to implicit, or hidden, cognition when they make a choice. Among the implicit cognition that impacts the judicial decision, neuroscience particularly underlines bias, emotion and empathy [37].

The "emotional" judge has been seen as a peril for justice and due process [38]. Conversely, scientific and technological progress may appear to be an antidote against the risk of discretion in the administration of justice. Along these lines, the use of algorithms in judicial decisions, as a partial or total substitute for the human judge, suggests a model of neutral and objective justice, more conformant with the myth of the blind judge, who decides on the basis of pure rationality, a possibility definitively dispelled by neuroscience research.

The option of an "artificial" judge raises not only the question concerning the contribution of technology to judicial justice, but also the need for and utility of humanity in judicial decisions.

4. The role of the judge: a constant tension between human being and being human.

The judicial process is the greatest example of the mutual relationship between law and interpretation: law is interpretation and, during the process, law becomes interpretive judicial practice. The relationship between law and interpretation is not linear, but circular and the entire judicial decision is dominated by a continuous shift between the humanity of the judge and the role of judging: the impact of facts on the humanity of the judge and his role of researching the law for the case. Therefore, the judicial interpretation implies a constant tension between human being and being human [39]. It is inevitable that

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[37] A. S. BRADLEY, *The Disruptive Neuroscience of Judicial Choice*, in *UC Irvin Law Review*, 9(1), 2018, p. 1 ff., at 7.

[38] Cf. for example the study by A. FORZA - G. MENEGON - R. RUMINATI, *Il Giudice emotivo. La decisione tra ragione ed emozione*, Bologna, 2017, p. 207.

[39] The expression echoes the study by A. J. HESCHEL, *Who Is Man?*, Stanford, 1965, p. 27.

the judge approaches the decision on the basis of an initial view and intuition, however, comparing his initial view with the legal and policy arguments, he/she could depart from his/her initial view. In other words, the judge needs the ability to self-correct: this is an important feature of the role of the judge, as it helps to achieve the right conclusion when, for example, there are more possible results for a case [40]. The first interpretation of the judge is influenced by his/her own personality, but the humanity of the judge, is closely connected with the dignity of the task of judging.

The tension between human being and being human requires the recovery of the cultural dimension of judging and the role of the judge as a cultural mediator, neglected by a technical and scientific idea of law. The digital age makes it even more urgent to recover the humanity of the judge, and with it the human dignity of the role. To pursue this aim we need firstly to clear the field of an ambiguity that afflicts our time: the task of solving cases and the task of judging cases are not the same, even if their results usually overlap. The scientific and legal knowledge, the capacity to collect, classify and compare data, are important skills for solving the case, but they need to be accompanied by the ability of the judge to interpret law. This is a human ability, as it needs awareness of the contextual dimension of law; in other words, it needs humanity: a free will that impacts with the concrete facts of the case together with the responsibility to seek justice for that case.

The judge is a product of his/her time and interprets it with the awareness of a man/woman who moves in a logical system of probable knowledge. In this context, the judge makes full use of his/her experience to understand the current times and ways of our society, which are continuously transforming. Furthermore, the judge should be immersed in society, instead of alienated from it or unaffected by its ideas and forces. The role of the judge requires a constant fight between what is scientifically certain and what is fair and aspiring towards

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[40] LORD NEUBERGER, *Judge Not, That Ye Be Not Judged: Judging Judicial Decision-Making*, *AF Mann lectures*, *British Institute of International and Comparative Law*, 29 January 2015, available at https://www.supremecourt.uk/docs/speech-150129.pdf.

justice [41]. During a lecture at the British Institute in 2015, Lord Neuberger affirmed:

> «[...] we must approach the task of judging in a manner which embraces, rather than eschews, our humanity. We should do so more openly and more honestly».

From this perspective, the debate about the use of automatons and artificial intelligence in the decision-making process should be approached accepting the humanity of the judge instead of denying it.

Technological progress provides a great opportunity for challenging the role of the human judge and recovering the reasons for its dignity. In our time, as in the past, this process needs education and human virtues: that is the comprehension of technological progress but also the courage to be part of it, without rejecting it.

Technological progress and the development of artificial intelligence ask us to revolutionise the education of judges to help them understand a changing world.

The common law countries and, especially the US, are a driving force in reforming legal education programmes so as to include in the curricula of the law schools law and technological teaching, work on legal practice technologies, legal design projects, and innovation incubators [42]. Some scholars, however, affirm that the approach towards the inclusion of technological science into legal curricula are sometimes characterised by a sort of "anxious legal studies" [43]: the urgency for the legal control and regulation of

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[41] L. MOCCIA, *op. ult. cit.*, p. 53.

[42] L. FLORIDI (Eds.), *The Onlife Manifesto. Being Human in a Hyperconnected Era*, 2015, p. 9: «Throughout our collective endeavour, a question kept coming back to the front stage: "What does it mean to be human in a hyperconnected era?" This foundational question cannot receive a single definitive answer, but addressing it has proven useful for approaching the challenges of our times»; L. MOCCIA, *Education to Inter-Cultural Citizenship: a European Perspective to Global Citizenship*, in *La Cittadinanza Europea*, 2014, p. 161, at 177: «Notwithstanding sophisticated devices that in few seconds make people reachable everywhere, we still need a humanised common set of values and habits of mind upon which to base peaceful and prosperous coexistence in the world».

[43] Cf. J. WEBB, *Information Technology & the Future of Legal Education:*

technology. This approach leads to an interpretation of the relationship between law and technology along binary lines: melding technology and law as far as we can, pushing the technological courses, or "weaponising" the law to resist the technological revolution. They affirm, on the contrary, that the entanglement of humans and technology needs to be seriously investigated, evaluating how to best deal with the responsibility deriving from this relationship. In addition, technological learning should not be marginalised in legal education, but «[...] it must be understood and problematized pervasively across the curriculum» [44].

Technological progress challenges the entire vision of legal education because it challenges the idea of what it is to be human and, consequently the role of humanity in law. Therefore, the need to take seriously the interplay between AI and law in legal education implies learning to be human. We need to discover and exercise those human virtues in order to live together in a digital age.

Paradoxically, one main challenge for judicial interpretation in the age of AI is to tackle the question: «What does it mean to be human in a judicial decision?».

a Provocation, in *Griffith Journal of Law and Human Dignity*, Special Issue, 2019, p. 1 ff.

[44] At a practical level, legal education would encourage the introduction in the curricula of subjects to develop skills of design thinking, critical thinking and creative-problem solving, design oriented teaching and research, ethical and governance approach, cf. *Ibidem*, p. 21 ss.