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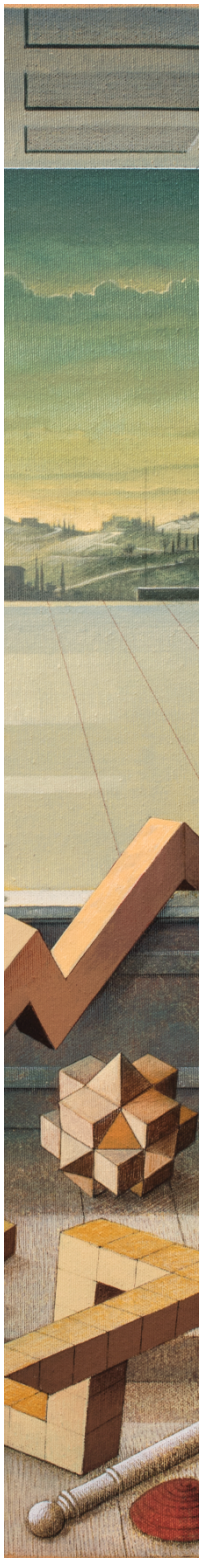

ARTIFICIAL INTELLIGENCE, CIVIL LAW AND ETHICS IN ITALY: A POSSIBLE INTERACTION

Remo Trezza

Abstract
[Artificial intelligence, civil law and ethics in Italy: a possible interaction]. The contribution contains the reflections proposed at the International Congress "*Persona y derecho*", organized by the Peruvian Institute "*Arte del derecho*" (scientific coordinator Prof. Carlos Antonio Agurto Gonzales) on 1 and 2 April 2021. It starts from the difference between the legal system and the electronic system, it touches on issues such as the need to evaluate artificial intelligence systems in advance, passing through the influence of new technologies in the field of civil law, neuroscience and the so-called necro-robotics, up to the elaboration of principles to be respected in order to have an anthropo-mechanical relationship.

Key words:
Civil law, artificial intelligence, judgment of merit of A.I. systems, anthropo-mechanical relationship

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Artificial intelligence, civil law and ethics in Italy: a possible interaction

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1. Methodological premise: legal informatics vs. artificial intelligence and law

In the first instance, it is necessary to differentiate, for a more careful understanding for the continuation of the discussion, legal information technology [1] from the relationship between artificial intelligence and law[2].

With regard to the first question, it must be said immediately that legal information technology is the branch of law that, for many years, has been dealing with technological and digital mechanisms and tools in the world of law in general, especially the procedural one. In fact, think of the Digital Administration Code (Legislative Decree no. 82/2005), which, among many, provides for the institutions of the "digital signature" and "electronic document", focusing on their discipline on their

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[1] See R. Bin, N. Lucchi, *Informatica per le scienze giuridiche*, Cedam, Padova, 2009; S. Russo, R. Scavizzi, *Manuale di diritto comunitario dell'informatica*, Giuffrè, Milano, 2010; G. Ziccardi, *Il Computer e il giurista*, Giuffrè, Milano, 2014; D. Valentino (ed.), *Manuale di diritto dell'informatica*, Esi, Napoli, 2016; G. Sartor, *L'informatica giuridica e le tecnologie dell'informazione*, Giappchelli, Torino, 2016; F. Faini, S. Pietropaoli, *Scienza giuridica e tecnologie informatiche*, Giappichelli, Torino, 2017; Aa. Vv., *Informatica giuridica e informatica forense al servizio della società della conoscenza. Scritti in onore di Cesare Maioli*, Aracne, Roma, 2018; A. M. Gambino, A. Stazi, D. Mula, *Diritto dell'informatica e della comunicazione*, Giappichelli, 2019; G. Ziccardi, P. Perri, *Dizionario Legal tech. Informatica giuridica, protezione dei dati, investigazioni digitali, criminalità informatica, cybersecurity e digital transformation law*, Giuffrè, Milano, 2020.

[2] See R. Trezza, *Diritto e intelligenza artificiale. Etica, Privacy, Responsabilità, Decisione*, Pacini giuridica, Pisa, 2020. Seee also G. Taddei Elmi, A Contaldo (ed.), *Intelligenza artificiale. Algoritmi giuridici. Ius condendum o "fantadiritto"?*, Pacini giuridica, Pisa, 2020; U. Ruffolo (ed.), *Intelligenza artificiale. Il diritto, i diritti, l'etica*, Giuffrè, Milano, 2020; G. Alpa (ed.), *Diritto e intelligenza artificiale. Profili generali, soggetti, contratti, responsabilità civile, diritto bancario e finanziario, processo civile*, Pacini giuridica, Pisa, 2020; A. Santosuosso, *Intelligenza artificiale e diritto. Perché le tecnologie di IA sono una grande opportunità per il diritto*, Mondadori, Milano, 2020; M. Cupersito, *Intelligenza artificiale e diritto: profili normativi, etici e politici*, in *Opinio Iuris*, 1 giugno 2020, available online; A. Longo, G. Scorza, *Intelligenza artificiale. L'impatto sulle nostre vite, diritti e libertà*, Mondadori, Milano, 2020.

validistic and evidentiary implications[3].

Let us consider, for example, also all the telematic management (technological means for the functioning of the law) relating to the processes. In addition to the legislation on electronic civil proceedings (so-called PCT)[4], there is also a series of technological tools that can assist legal operators, such as the Italgiure Web, Sentenze Web, Sigico and CED services.

With regard to the Court of Cassation, the top of legitimacy in the legal system, the Italgiure and Sentenze Web services, functional mechanisms for the faster and more usable search for sentences, were developed by the Electronic Documentation Center (CED)[5], which deals with "telematising" the proceedings and making the justice service as functional as possible.

Similarly, the Constitutional Court, which, aided by the IT offices, has "digitized" all the procedures – especially in the emergency context due to the Covid-19 pandemic[6] –, giving the possibility of access not only to the published sentences, but also to the official press releases of the Court, to the ordinances of admissibility or otherwise of the interventions (*ad adiuvandum* or *ad opponendum*), or even to the telematic possibility to take advantage of the ordinances of admissibility or not of the interventions of the friends curiae or, again, to consult, with access credentials, the acts of constitutional processes (so-called electronic file).

These are just a few cases of what is called "legal information technology", or that set of rules that tend to "digitize" and, therefore, streamline the procedural and procedural phases.

On the other hand, unlike legal information technology, there is Artificial Intelligence, which contemplates in itself various equipment, means, software, applications, variables that have an advantageous impact – most of the time – but also – other times – disadvantageous on the social system and about people. This is the reason why intelligent systems must be screened for their merit[7]. It is therefore necessary to understand whether these are capable of being "functional" to the development and protection of the human personality. Mechanistic merit, therefore,

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[3] See G. D'Aietti, *Il documento elettronico: profili giuridici, civili e penali*, in *www.privacy.it*, Relazione presentata al Convegno Nazionale su "Informatica e riservatezza" del CNUCE – Pisa 26/27 settembre 1998, available online; V. Rizzo (ed.), *Documento informatico, firma digitale e commercio elettronico*, Esi, Napoli, 2000; N. Graziano, *Il disconoscimento del documento informatico sottoscritto con firma digitale*, in *Informatica e diritto*, 17 gennaio 2001, available online; C. Fiscale, F. Del Monte, A. Feliciani, G. Arenaccio, *La firma elettronica e il documento informatico: come semplificare la sottoscrizione e conclusione dei contratti durante il lockdown*, in *Diritto bancario*, 26 marzo 2020, available online; M. Milanese, *L'atto pubblico informatico*, in *www.comprarazionedirittocivile*, available online.

[4] See A. Didone (ed.), *Le riforme del processo civile: dalla digitalizzazione del processo alla negoziazione assistita*, Giuffrè, Milano, 2014; E. M. Forner, *Procedura civile digitale. Prontuario teorico-pratico del processo telematico*, Giuffrè, Milano, 2015; S. Rossetti, M. Santopietro, D. Muradore, *Il processo esecutivo telematico*, Giuffrè, Milano, 2016; P. Della Vedova, *La deriva telematica nel processo civile*, in *Judicium*, available online.

[5] See G. Mammone, *Relazione sull'amministrazione della giustizia nell'anno 2018*, Roma, 25 gennaio 2019, Gangemi editore, Roma, 2019, pp. 95-98; G. Mammone, *Relazione sull'amministrazione della giustizia nell'anno 2019*, Roma, 31 gennaio 2020, Gangemi editore, Roma, p. 21.

[6] A. Didone, F. De Santis (ed.), *Il processo civile solidale. Dopo la pandemia*, Wolters Kluwer, Milano, 2020

[7] P. Perlingieri, *Il diritto civile nella legalità costituzionale*, Esi, Napoli, 2006, p.p. 346-351; I. Martone, *Il giudizio di meritevolezza. Questioni aperte e profili applicativi*, Esi, Napoli, 2017; E. Minervini, *La «meritevolezza» del contratto. Una lettura dell'art. 1322 comma 2 c.c.*, Giappichelli, Torino, 2019; R. Trezza, *Multiproprietà azionaria e tutela del consumatore: risvolti processuali e funzioni della causa negoziale*, in *Cultura giuridica e diritto vivente*, n. 7/2020, pp. 2-13.

must rise to a necessary and unfailing evaluative element for the construction – what is hoped for – of an intelligent right for people[8].

2. The new "global" world and the advent of new technological coordinates

The society in which we find ourselves resolving conflicts – which, if before they were more visible and perceptible between people, today are also between people and artificial machines – is a highly "globalized" society, in which a real "digital revolution[9]".

As we know, the phenomenon of globalization has triggered a "shortening" of the inter-relational speed, since, simply with a click, it is now possible to interface with another part of the world.

The sociologist of law, Ferrarese, after Giddens, who already defined globalization as a phenomenon of "kilometric lowering of relations", stressed that the phenomenon of law in the global world is to be attributed to the "shift of sovereignty from states to markets[10]".

The market, which in itself should be governed by state law[11], in the galloping world of globalization, risks annihilating the state, appropriating a self-legitimizing sovereignty that imposes unregulated economic measures[12].

The law, but above all the person, must be *prius* in the mercantile dynamics (*lex mercatoria*) and regulate the *posterius* of the market as adequately as possible.

The law cannot come later, it must acquire the capacity for "foresight". It is true that "ex facto oritur ius", but it is also true that the social and technological dynamics in place can only move the law towards a solution-dynamic approach rather than inertia, the result of a comfortable immobility[13].

Intelligent systems have already changed the space-time, as well as physical and mental coordinates of human components. They have penetrated the system, increasingly imbued with allocations based on the speed of hoarding, leading to three factual coordinates that are now evident: dematerialization, despatialization and detemporalization.

Artificial Intelligence, behind which there is always the man-computer, no longer has to do with the traditional dimension of materiality because it transcends it (dematerialization)[14].

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[8] R. Trezza, *I diritti della persona tra "tecniche" e "intelligenze" artificiali. Casi, questioni, prospettive*, Ediciones Olejinik, Cile, 2021.

[9] P. Cellini, C. Ratti, L. De Biase, *La rivoluzione digitale. Economia di internet dallo Sputnik al machine learning*, Luiss University Press, Roma, 2018; F. Rullani, E. Rullani, *Dentro la rivoluzione digitale. Per una nuova cultura dell'impresa e del management*, Giappichelli, Torino, 2018; G. Giorgetti, *Rivoluzione Digitale Italiana: dal colonialismo all'indipendenza tecnologica*, 2019.

[10] M. R. Ferrarese, *Diritto sconfinato. Inventiva giuridica e spazi del mondo globale*, Laterza, Roma-Bari, 2006, p. 102.

[11] P. Perlingieri, *Il diritto civile nella legalità costituzionale*, cit., p. 471 ss.

[12] M. R. Ferrarese, *Diritto sconfinato*, cit., p. 102 ss.; A. Catania, *Metamorfosi del diritto. Decisione e norma nell'età globale*, Laterza, Roma-Bari, 2008, p. 47 ss.

[13] R. Trezza, E. Quarta, *Driverless car o driverless law: quale direzione prenderà il diritto per evitare "incidenti sistematici"?*, in *Cultura giuridica e diritto vivente*, n. 2/2021.

[14] S. Capaccioli, *Criptovalute e bitcoin. Un'analisi giuridica*, Giuffrè, Milano, 2015; R. Razzante (ed.), *Bitcoin e criptovalute. Profili fiscali, giuridici e finanziari*, Maggioli, Sant'Arcangelo di Romagna, 2018; F. Pontani, *Criptovalute. Tecnicità, diritto ed economia*, Aracne, Roma, 2019.

Furthermore, being able to communicate – as especially the emergency period has made us perceive – in any possible way in order to reach an international audience, has made the traditional coordinates of the space disappear, no longer limited to physicality, but to the telematic dynamism that allows "virtual space" the now almost completely absent "physical-relational space". Furthermore, there is no time in intelligent systems. They, except for the click of shutdown, would be capable of continuous, frenetic processing, with not a few implications on the health and harmonious development of the human person.

Therefore, there must be the man (the jurist) capable of regulating, as far as possible, the "unregulated" world of technicality, with the "regulated and regulatory" world of juridicality.

3. The ontological difference between electronic and legal order

In order to try to give juridical-systematic answers to the world so unruly of new technologies, it is necessary to dwell on the ontological difference, as an "original differential context", between the electronic and legal systems[15].

The first can be defined as the set of "governing rules" of the electronic world, based on algorithmic variables capable of making intelligent systems work, but which cannot, in order to pass the merit test of achieving the best human protection, not be appropriate to the legal values on which, instead, the legal system is based.

The latter, in fact, is the set of rules governing the relationships between the active subjects of the state system (having the primary status of person, and then of citizen), based on "legal values" (first of all the constitutional principles and the fundamental rights that are contained in the Constitutional Charter and, by interposed parameter, also in the Supranational Charters and Treaties)[16].

We cannot think of an intelligent system that makes decisions that do not comply with the legal values of the legal system in which it operates. In this sense, in fact, the *homo informaticus* (the person professionally appointed to program the enabling software of intelligent systems), must have the legal values correctly transmitted by the *homo juridicus*, which must necessarily be introduced into the machine. This transmission allows the "injective passage" from legal value to an algorithmic variable worthy of being able to function[17].

The merit test, therefore, must be carried out *ab origine* (ethics by design), during and up to the last possibility of the material r-existence of the machine (ethics by default)[18]. The entire security structure must also be built on these criteria, relating to the protection of privacy (by design and by default).

4. Legal values and algorithmic variables: "algorithmic-ethical" profiles and prejudices of prejudices (so-called bias of bias)

What was said in the previous paragraph allows to differentiate – if it is not yet clear – the legal values from the algorithmic variables.

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[15] R. Trezza, *Diritto e intelligenza artificiale*, cit., p. 15.
[16] P. Perlingieri, *Il diritto civile nella legalità costituzionale*, cit., p. 159 ss.; p. 265 ss.; pp. 305-307.
[17] R. Trezza, *Diritto e intelligenza artificiale*, cit., pp. 15-17.
[18] R. Trezza, *I diritti della persona tra "tecniche" e "intelligenze" artificiali*, cit.,

The former are the result of the preceptivity of the legal system and are translated by the jurist and lowered from the world of abstractness to the world of orderly dynamism; the latter, on the other hand, are the variables present in intelligent systems in which the reference values have been inserted. Only in this way can an intelligent machine operate in the system, through – obviously – a continuous screening of merit since the machine, in addition to containing biases (internal prejudices, entirely ontological), could also contain transmission errors from values to variables (bias of bias, or prejudices of an induced human nature, which must be immediately corrected, rectified)[19].

Any intelligent system must always pursue an "ethically" acceptable purpose and all the algorithmic variables, in which there has already been the "injection of values", must always have the ability to be interpreted in an "ethically" oriented way.

This dimension, as will be seen, has a strong impact on the civil liability profiles of the machine, where not only the manufacturer of the artificial machine can be called to answer, but also the translator of legal values (jurist) and the programmer/introjector (computer scientist)[20].

5. General overview of machine liability and categorical tripartite division

The machine, like a human person, can cause damage, physical (think of the field of health robots) or psychic (think of the case of cyber-bullying), property or non-property.

What, then, is the responsible statute of intelligent machines?

In addition to the European Parliament Resolution of 2017, there were also those of October 2020 and January 2021, which, by identifying the guidelines on robotics and civil liability of intelligent systems, tried to make it a fundamental principle of the system that of accountability (accountability) in the same way as the discipline relating to the protection of personal data, thus making it clear that liability must be understood as "objective", also considering the discipline dictated by the Community Directive on defective products[21].

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[19] R. Trezza, *Diritto e intelligenza artificiale*, cit., pp. 22-24.

[20] R. Trezza, *Diritto e intelligenza artificiale*, cit., p. 49 ss.

[21] C. Castronovo, *Problema e sistema del danno da prodotti*, Milano, 1979; R. Pardolesi, *La responsabilità per danno da prodotti difettosi*, in *Le nuove leggi civili commentate*, 1989, p. 487 ss.; A. Gorassini, *Contributo per un sistema della responsabilità del produttore*, Milano 1990; G. Alpa, *Responsabilità civile e danno*, Bologna 1991; G. Ponzanelli, *Responsabilità del produttore*, in *Rivista di diritto civile*, 1995, II, p. 215; G. Alpa, *Il diritto dei consumatori*, Roma-Bari 1995; F. Cafaggi, *La nozione di difetto ed il ruolo dell'informazione. Per l'adozione di un modello dinamico-relazionale di difetto in una prospettiva di riforma*, in *Rivista critica di diritto privato*, 1995, II, p. 447; U. Carnevali, *La responsabilità del produttore*, Milano, 1974; C. Castronovo, *La nuova responsabilità civile*, Milano, 1997; A. Stoppa, *Responsabilità del produttore*, voce del Digesto delle discipline privatistiche (sez. civ.), XVII, Torino, 1998, p. 119 ss.; P. G. Monateri, *La responsabilità civile*, in *Trattato di diritto civile diretto da R. Sacco*, Torino, 1998; U. Carnevali, *Responsabilità del produttore*, voce dell'Enciclopedia del diritto, Agg., II, Milano, 1998, p. 936 ss.; G. Alpa, M. Bessone, *La responsabilità del produttore*, Milano 1999; A. De Berardinis, *La responsabilità del produttore*, in G. Alpa (ed.), *I precedenti. La formazione giurisprudenziale del diritto civile*, II, Torino, 2000, p. 1193 ss.; L. Mezzasoma, *L'importatore all'interno della C.E. di prodotti difettosi fabbricati in altro Stato comunitario*, in *Rassegna della giurisprudenza umbra*, 2001, I, p. 207; G. Ponzanelli, *Responsabilità del produttore*, in *Rivista di diritto civile*, 2000, II, p. 913; S. Della Bella, *Cedimento di scala estensibile e responsabilità del produttore-progettista: la nozione di danneggiato nella disciplina sulla responsabilità del produttore*, in *Responsabilità civile e previdenza*, 2003, I, p. 1153; G. Ponzanelli,

The aforementioned Resolutions also established that it is necessary to provide an economic fund for people who are directly damaged by intelligent systems not equipped with compulsory insurance against damage. Furthermore, there is the provision of a "certificate of ethical compliance" for each machine which confirms exactly the reasons expressed in the previous paragraphs: the intelligent system as built ontologically in an ethical sense.

In addition to the qualifying dynamics of responsibility (think of the hypotheses of application of art. 2043, 2050 of the italian civil code), the proposal reached here is in the subjective-categorical tripartition that sees in the translator the one who translates the legal values, in the producer the one who produces the machine and in the programmer who introduces the algorithmic variables. In this regard, civil liability will also differ according to the inter-agents in the artificial process.

In fact, there may be the responsibility of the manufacturer simply for a malfunction of the machine and the responsibility of the programmer for "wrong final decision", which does not comply with the actual legal values, as described above.

Regarding the release regime, it can be said that the manufacturer can prove that he has done everything possible to avoid the malfunction or that he is not aware of it (perhaps because a piece of the machine was commissioned to others). The latter case could be configured as a hypothesis of strict liability of the producer with the possibility – for its part – of exercising the right of recourse.

The programmer, in the same way, will be able to prove that he has used all the diligence necessary to introject the legal values into the machine, unless it was the translator (*homo juridicus*) who had the summary algorithmic variables of incorrect legal values. This case too would qualify as a hypothesis of objective liability with the possibility of exercising the right of recourse.

Finally, the translator (jurist) can prove that he has translated the legal values with the utmost due diligence (article 1176, paragraph 2, of the italian civil code). In the latter case, the hypothesis could also be that of "contractual liability" if the programmer has entered into an intellectual work performance contract with the translator himself[22].

6. Artificial Intelligence and the process

One of the areas in which Artificial Intelligence is predominantly setting foot is certainly the procedural one.

Responsabilità oggettiva del produttore e difetto di informazione, in *Danno e responsabilità*, 2003, I, p. 1005; G. Nicolini, *Danni da prodotti agroalimentari difettosi: responsabilità del produttore*, Giuffrè, 2006; P. Mariotti, *Prodotti difettosi e obsolescenza programmata*, Maggioli, 2013; E. Graziuso, *La responsabilità per danno da prodotto difettoso*, Giuffrè, 2015.

[22] R. Trezza, *Diritto e intelligenza artificiale*, cit., p. 49 ss.; R. Trezza, E. Quarta, *Driverless car o driverless law: quale direzione prenderà il diritto per evitare "incidenti sistematici"?*, cit.; R. Trezza, *Responsabilidades legales atribuibles a máquinas y algoritmos: ¿categorías tradicionales o género novum de responsabilidad?*, in *Actualidad civil*, n. 76/2020, pp. 155-177.

There are two delicate fields of intersection between I.A. and process: the first is represented by the robotic decision[23]; the second, on the other hand, from predictive justice[24].

We start from the assumption, very dear to the writer, that a judge-person can never be replaced by a judge-robot. This for a very simple reason: the judge-person has his own human dignity, which, as a corollary, also includes the dignity of the intellect, from which the dignity of deciding derives. We cannot think of separating human dignity from the dignity of deciding, since the second is completeness and function of the first.

No regulatory provisions – see, in this sense, art. 101 cost. – gives the artificial character to justice. "The judge is subject only to the law". But which judge? The Constitution certainly would never have thought of a judge-robot, who would only have an intellectual dignity, represented by the set of perceived and collected data, but not the human one that distinguishes him from the human person himself. Man, it must be remembered, is not only *res cogitans*, but also *res extensa*. Does the machine know the value of "human empathy"? Evidently, the only "amorphous" variable of the machine is its not being able to relate to the human person as a whole. It is therefore equipped with a so-called Algorithmic "disaffection".

Could the robot judge be able to decide on the basis of the fundamental principles of the legal system?

7. Artificial Intelligence and the principle of equality

Some examples, in the context of proceedings, even at a comparative level, can help to better understand and provide an overall answer to the question with which the previous paragraph was concluded.

Refer to the Compas case. An algorithm in Wisconsin decided that a "black" person was more likely to relapse than a "white" person. Why did he decide it? Evidently because the algorithmic machine did not know ex ante (ethics by design)

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[23] G. Gitti, *Dall'autonomia regolamentare e autoritativa alla automazione della decisione robotica*, in *Tecnologie e Diritto*, n. 1/2020, pp. 113-127; N. Irti, *Il tessitore di Goethe (per la decisione robotica)*, in *Decisione robotica* (ed. by A. Carleo), il Mulino, Bologna, 2019, pp. 17-22; G. Mammone, *Considerazioni introduttive sulla decisione robotica*, in *Decisione robotica* (ed. by A. Carleo), il Mulino, Bologna, 2019, pp. 23-30; A. Carcaterra, *Machinae autonome e decisione robotica*, in *Decisione robotica* (ed. by A. Carleo), il Mulino, Bologna, 2019, pp. 33- 61; M. Luciani, *La decisione giudiziaria robotica*, in *Decisione robotica* (ed. by A. Carleo), il Mulino, Bologna, 2019, pp. 63-96; E. Vincenti, *Il "problema" del giudice-robot*, in *Decisione robotica* (ed. by A. Carleo), il Mulino, Bologna, 2019, pp. 111-124; M. Maugeri, *I robot e la possibile "prognosi" delle decisioni giudiziali*, in *Decisione robotica* (ed. by A. Carleo), il Mulino, Bologna, 2019, pp. 159-164; A. Di Porto, *Avvocato-robot nel "nostro stare-decisis". Verso una consulenza legale "difensiva"*, in *Decisione robotica* (ed. by A. Carleo), il Mulino, Bologna, 2019, pp. 239-250; M. R. Covelli, *Dall'informatizzazione della giustizia alla "decisione robotica"? Il giudice del merito*, in *Decisione robotica* (ed. by A. Carleo), il Mulino, Bologna, 2019, pp. 125-138.

[24] L. De Renzis, *Primi passi nel mondo della giustizia "high tech": la decisione in un corpo a corpo virtuale fra tecnologia e umanità*, in *Decisione robotica* (ed. by A. Carleo), il Mulino, Bologna, 2019, pp. 139-158; F. Rundo, A. L. Di Stallo, *Giustizia predittiva: algoritmi e deep-learning*, in *Sicurezza e Giustizia*, 2019, pp. 31-34; Aa. Vv., *La giustizia predittiva tra machine learning e certezza del diritto*, in *VGen*, available online; A. De La Oliva Santos, *"Giustizia predittiva", interpretazione matematica delle norme, sentenze robotiche e la vecchia storia del "Justizklavier"*, in *Rivista Trimestrale Diritto e Procedura Civile*, n. 3/2019, pp. 883-895; C. Morelli, *Sentenze, predittività prudente. Il libero convincimento del giudice è valore primario*, in *Italia oggi*, 5 luglio 2019, p. 5, available online; M. Versiglioni, *Se l'algoritmo scrive la sentenza che almeno rispetti la logica*, in *Il Sole 24 ore*, 2019, available online.

what was the legal reference value on which to take the decision-making action (principle of equality) and showed an internal prejudice which, as said on several occasions, must necessarily be rectified with a correct transmission and injection of legal values[25].

Refer again to the known case of the assignment of school chairs in Italy. A ruling, now known by all, of the Italian Council of State[26], in making the institution of the "administrative IT" act admissible in our legal system, ruled in the sense that a similar decision (assignment of chairs without perhaps taking into account the actual conditions and contingents of teachers) must be predictable and knowable, as well as transparent (article 97 of the Constitution).

The ruling, therefore, anticipated the concept of *ex ante* predictability and *ex post* knowability of the decision, highlighting that the algorithm can indeed be entrusted with decisions, but these must always pass the control of merit by a judge-man.

Another case may be the one from which the decision of the Court of Bologna is generated, precisely on 31 December 2020, where an algorithmic platform has chosen to favor workers – in this case the riders of the Deliveroo company – rather than others, without taking into account considering their needs and problems.

The algorithm, in fact, on the basis of a few days of absence, had provided for a more effective work shift, but never considered the reasons – even serious ones because perhaps related to the health of the worker – of the absences. This platform was therefore deemed "discriminatory" by the trial judge. This is a further case of "disaffection" of the machine in the face of a human "affection", a connatural element of the dignity of deciding[27].

Another case is that relating to electronic testimony. In Florida, for a case of femicide, it was discussed whether Alexa (Amazon's artificial voice) could be admitted as a witness in the trial, as, as a "home automation sensor", she could learn and record what happened[28]. A similar significance of the testimony has not yet been discussed in our legal system. It can only be said that there are no rules of our procedural system that lead one to think that there may be another type of witness in addition to the human one. From the point of view, however, of truthfulness – somewhat comparable to that of humans, especially in the light of the principle of *nemo tenetur se detegere* – it could be better, also in terms of testimonial chronometry

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[25] R. Trezza, *Diritto e intelligenza artificiale*, cit., p. 17.

[26] R. Trezza, *Diritto e intelligenza artificiale*, cit., p. 81 ss.; M. Sabatino, *Consiglio di Stato: l'algoritmo è un atto amministrativo informatico*, in *La Pagina Giuridica*, 7 agosto 2019; Aa. Vv., *Atti e procedimenti amministrativi informatici: promossa la P.A. Robot, se l'algoritmo è conoscibile*, in *Giurdanella.it (Rivista di diritto amministrativo)*, 29 aprile 2019, available online; C. Morelli, *Consiglio di Stato apre alla PA robot*, in *www.altalex.it*, 20 gennaio 2019, available online; M. De Angelis, *Algoritmi nei concorsi pubblici: il caso dei docenti che fa "scuola"*, in *Ius in itinere*, 5 ottobre 2019, available online; G. Pesce, *Il giudice amministrativo e la decisione robotizzata. Quando l'algoritmo è opaco*, in *Judicium*, 15 giugno 2020, available online; F. Calisai, *Dati, informazioni e conoscenze: inquadramento giuridico e regolazione. Appunti su un potenziale paradigma appropriativo*, in *Tecnologie e diritto*, n. 1/2020, pp. 13-45; A. Di Martino, *Intelligenza artificiale e decisione amministrativa automatizzata*, in *Tecnologie e diritto*, n. 1/2020, pp. 83-112; V. Conte, *Decisioni pubbliche algoritmiche e garanzie costituzionali nella giurisprudenza del Conseil constitutionnel francese*, in *Tecnologie e diritto*, n. 1/2020, pp. 347-362; C. Napoli, *Algoritmi, intelligenza artificiale e formazione della volontà pubblica: la decisione amministrativa e quella giudiziaria*, in *Rivista AIC*, n. 3/2020, pp. 1-37.

[27] Redazione di diritto di internet, *Tanto tuonò che piovve. Prima pronuncia sull'algoritmo (detto Frank) in tema di discriminazione collettiva dei lavoratori*, 5 gennaio 2021, available online.

[28] L. Vizzoni, *Domotica e diritto. Problemi giuridici della smart home tra tutele e responsabilità*, Giuffrè, Milano, 2021.

(genuineness), of the witness person who, years later – except for the possibility of a probative incident – he could forget elements, facts, circumstances useful for the trial.

An example of the ethical finalization of the algorithm and deserving functionalization of the same is its use for reasons of personal protection. Lastly, see the Facebook case. This social network has decided to develop an algorithm capable of capturing fake news – perhaps detrimental to the person's sensitivity – or of capturing, reporting and, finally, deleting offensive videos or writings (hate speech). A clear example of how the algorithm "serves" man for his best development.

8. Artificial Intelligence and human care

The A.I. he must never "trample" human dignity, he must always put himself at the "service" of the person, so that the latter can develop himself and improve himself in a harmonious setting.

Intelligent systems, for this inescapable reason, must be built keeping in mind the goal to be achieved (artificial teleology): "the most adequate protection possible of the human person".

This is the reason why on the subject of I.A. and process we can speak of a "predictive algorithm" while in the field of A.I. and of the human person we must speak of a "protective algorithm[29]".

It is necessary to underline that the algorithmic system, for this purpose, could also be used by the judge for the best choice, thanks to the introjected value variables, of the institutions for the protection of the human person (support administration, disqualification, disqualification).

Furthermore, it is necessary to understand that, in the near future, a support administrator could also be a health-care robot, who, in addition to already taking care of the human person, could also take care of its development in a situation of such vulnerability not to allow the latter to provide for its own interests and primary needs.

The human person, in fact, must be protected with the most adequate, suitable, flexible measure[30]. And a robot, only if ethically oriented, could be of help to the judge in deciding on the possible institute to be adopted.

It is right to speak, also in this perspective, of robo-ethics. Not only the algorithm must be based, from its construction, on ethics (legal values underlying the system), but also robotic machines, which – unlike a single algorithm – will certainly be more complex.

Do not distract attention even from health robots, thanks to which doctors operate in more efficient conditions and patients achieve better results.

Here, the most relevant problem is given by the possible responsibility if the robot does not work correctly or if this machine causes harm to the patient.

The most accredited hypothesis is, on the basis of the Gelli-Bianco Law on medical liability, that of the configurability of the contractual liability of the structure if the robot does not work, with evident exercise by the latter of the recourse action against of the manufacturer[31].

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[29] R. Trezza, *L'algoritmo "protettivo": gli istituti di protezione della persona alla prova dell'Intelligenza Artificiale*, in *Tecnologie e diritto*, n. 1/2021, p. 217 ss.

[30] C. Perlingieri, *Amministrazione di sostegno e neuroscienze*, in *Rivista di diritto civile*, n. 2/2015, pp. 330-343.

[31] V. Rotondo, *Responsabilità medica e autodeterminazione della persona*, Esi, Napoli, 2020, p. 159 ss.

The case, however, of having caused the death of a patient, must be distinguished from the first. In this hypothesis, if the robot worked correctly and the doctor had an "agent field", that is, he was able to monitor the medical robot from the beginning to the end of the operation, a hypothesis of non-contractual liability of the doctor could be configured (from point of civil law for existential – non-pecuniary – damage possibly suffered by the loved ones of the deceased patient) and a sure hypothesis of manslaughter, as amended by the aforementioned law[32].

One might wonder if a machine, a robot, an intelligent system is capable of responding criminally. According to the reading of article 27, co. 1, cost. surely the answer is no. The personality of criminal responsibility presupposes the commission of a fact of one's own (attributable to a specific human person) and not the possibility of responding for a fact of others. This implies that the physician-man, having full "acting field" on the robotic machine, is the only one who can respond criminally.

9. Necro-robotics

A much debated topic, especially in recent times, is that of necro-algorithmic, in addition to human enhancement, which arouses many perplexities, a phenomenon for which a deceased person is virtually "resurrected" for the sake of a loved one still alive.

Regarding the issue of human enhancement[33], where the A.I. it is used for the preparation of soldiers (especially in America) so that they can better face war and any other type of battle to defeat the enemy definitively and by all possible means (see, for example, the drone-bombs), one wonders if the limit of human dignity is, in this case, respected[34].

An investigation should then be carried out on the responsibility – also on an international level – deriving from the damage (including from unjust death) caused by military drones guided by a human being in order to quickly "locate" the enemy and "annihilate" him.

With regard to the second question, however, it must be said that techniques, such as Neuralink, or even the chatbot resuscitating the dead create problems, not only on a strictly ethical level, but also on a legal level.

Here too, it is good to reiterate that any "new artificial creation" must always pass through the scrutiny of ethical and legal merit.

Neuralink, for example, could, among the perceivable advantages, be able, through the direct connection "computer tool-human brain", to restore physical and rehabilitative abilities to a paraplegic athlete.

The three-dimensional robots that recreate the virtual physiognomy of the deceased could, on the other hand, have the advantage of treating the physical absence of a loved one that has caused degenerative conditions on a psychic level in the person who remains alive. The limit to the use of this last invention must be marked by the time of re-elaboration of mourning, through a real "acceptance therapy" that leads to

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[32] R. Trezza, *La responsabilità civile del medico: dall'oscurantismo al doppio positivismo. Focus sulla responsabilità civile del medico prenatale*, Brunolibri, Salerno, 2019, p. 29 ss.; R. Trezza, *La responsabilità civile del medico: approccio e dintorni*, in *Diritto alla vita, diritto alla salute e responsabilità medica. Riflessioni prospettiche sull'autodeterminazione della persona umana* (ed. by R. Trezza), Brunolibri, Salerno, 2020, p. 55 ss.

[33] S. Amato, *Biodiritto 4.0. Intelligenza artificiale e nuove tecnologie*, Giappichelli, Torino, 2020, p. 120.

[34] S. Amato, *Biodiritto 4.0.*, cit., p. 167 ss.

the psychological path of acceptance of the death-event and the regaining of the psychological serenity of the human person still alive.

Only in this dimension, even the chatbots, or the verbal repeaters of conversations with the voice of the deceased, can be used.

There must always be a worthy screening and an equally deserving purpose that goes in the sense of best human protection. Even in this case, therefore, necro-robotics will have to be increasingly necro-ethical[35].

10. The protection of the person in the neuro-scientific dimension

A further aspect of A.I. it is related to the new dimensions of neurological science. There are many intelligent tools that make it possible to improve the neurological health of the human person[36] (and for this very reason they deserve to be built, always based on "healthy" variables and to be used) and to predict behaviors, especially criminal ones.

From the point of view of the criminal trial, neuroscience may be able to make people understand the reason why a person has committed a crime or, from a preventive point of view, when he will be able and if he will be able to do the same again (recidivism[37]).

In this regard, it is obvious to refer to the traditional Lombrosian theories, by means of which, through the brain analysis of criminals, the physiological conformation of "inclination" to the commission of crimes could be identified. Such a study is described as "biological determinism".

It should not be overlooked, however, that in addition to a physiological determinism, there may be several other variables or circumstances that lead to the committing of crimes, namely the social factor (so-called sociological determinism), the economic factor (so-called economic determinism), the technological factor. In this latter perspective, precisely because there is the risk of the perpetration of crimes even in the liquid reality of the network (deep web, cybercrime and so on), we could speak of a new type of determinism, namely the "technological" one.

The element that most interests us here is the following: the final outcome of the experiments, that is, all the neuronal data collected, what kind of protection does it have?

The "neuronal data" certainly fall into the category of sensitive data and must be treated according to the regulations of the new GDPR regarding the protection of personal data. For this very reason we should also begin to discuss "neuronal privacy[38]".

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[35] S. Amato, *Biodiritto 4.0*., cit., pp. 172-179

[36] L. Palazzani, R. Zannotti, *Il diritto nelle neuroscienze. Non «siamo» i nostri cervelli*, Giappichelli, Torino, 2013; N. Lettieri, S. Faro, E. Fabiani, *Diritto, neuroscienze, scienze della cognizione*, Esi, Napoli, 2015; A. Santosuosso, *Le neuroscienze e il diritt*o, Ibis, 2009; C. Grandi, *Neuroscienze e responsabilità penale. Nuove soluzioni per problemi antichi?*, Giappichelli, Torino, 2016; O. Di Giovine, *Ripensare il diritto penale attraverso le (neuro-)scienze?*, Giappichelli, Torino, 2019.

[37] A. Forza, *Neuroscienze e diritto*, in *Rivista penale*, n. 3/2009, p. 253; P. Pietrini, *La macchina della verità alla luce delle recenti acquisizioni delle neuroscienze*, in *Cassazione penale*, 2008, p. 141 ss.

[38] S. Amato, *Biodiritto 4.0*., cit., p. 122.

11. Artificial Intelligence and civil law: electronic contractual autonomy, electronic contract and digital inheritance

The A.I. has invested, with its innovations and techniques, all sectors of law. For the purposes of interest here, it is necessary to dwell, albeit schematically, on the relationship between I.A. and civil law, examining, among many issues, those that are deemed to be the most interesting, namely the case of smart contracts[39], the algorithmic determination of the object of the contract[40] and the digital inheritance[41].

The algorithmic determination of the interests of the parties, through a jumble of telematic interests made to perceive the software, means that we can speak of "electronic contractual autonomy", where, *a fortiori*, the interests of the parties, as already happens pursuant to the art. 1322 of the italian civil code, will have to pass the ax of the merit screening.

The algorithmic determination, on the other hand, of the object of the contract is allowed for the same reasons set out above. Anything that is mere process could be replaced by the machine. A standardized evaluation, for example, could easily be replaced by software.

An interesting theme, which is emerging more and more strongly, is that relating to the digital heritage. Everything that a person leaves disseminated on the net, on social networks, on online platforms and so on, after his death, what protection will he have?

Think, for example, of the electronic holographic will which, in reality, as mentioned at the beginning of the paper, could fall within the branch of legal information technology, as a mere legal-telematic means of procedural streamlining. In the latter case, would it be possible to guarantee compliance with the date, the presence (physical or even "remotely" of the witnesses) and the signing (in presence or "remotely")? By linking the rules of the civil code on the subject of holographic wills, with those relating to the digital administration code and – if you want – with those relating to the containment of the Covid-19 epidemic, which increasingly stimulate an early "digitization" and sudden to make commercial and economic traffic flow, it is desirable that a system solution can be surely prepared.

Lastly, in addition to the well-known case of the "digital simulacrum", which is part of the necro-robotics on which we have already focused, reference should be made to the very recent decision of the Court of Milan of 9 February 2021, with which Ordered "Apple" to deliver photos and videos of their dead son to two parents.

In this dimension, namely that of "digital assets" (photos, videos, writings and so on), which rules should apply from the succession point of view[42]?

There is no need to add new rules to the existing ones which, once again, are able to support the weight of innovation (think of the combined provisions of article

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[39] S. Comellini, M. Vasapollo, *Blockchain, criptovalute, I.C.O. smart contracts*, Maggioli, Sant'Arcangelo di Romagna, 2019; G. Gallone, *La pubblica amministrazione alla prova dell'automazione contrattuale. Note in tema di smart contracts*, in *Federalismi*, n. 20/2020, pp. 142-170; A. Stazi, *Automazione contrattuale e "contratti intelligenti". Gli smart contracts nel diritto comparato*, Giappichelli, Torino, 2019; C. Pernice, *Distributed ledger technology, blockchain e smart contracts: prime regolazioni*, in *Tecnologie e diritto*, n. 2/2020, p. 490 ss.

[40] M. D'Ambrosio, *Arbitraggio e determinazione algoritmica dell'oggetto*, Esi, Napoli, 2020.

[41] I. Martone, *Sulla trasmissione a causa di morte del "patrimonio digitale"*, in *Tecnologie e diritto*, n. 2/2020, p. 420 ss.

[42] A. Vesto, *Successione digitale e circolazione dei beni online: note in tema di eredità digitale*, Esi, Napoli, 2020.

810 of the italian civil code with the articles of the civil code relating to succession *mortis causa*).

Another profile is related to the protection of privacy that the circulation of these digital assets in the global world (just a like, a click to share them for them to continue to circulate) requires. Does the right to privacy expire with the death of the owner? If it were to be extinguished, the digital assets present in the network and still circulating when they can no longer be disposed of should also die out[43].

Could it be ordered by will, also through the establishment of a legacy (testamentary provision in particular), that some data / digital assets continue to be administered? Or, is it possible to appoint an executor who has the task of carrying out the last wishes, also relating to digital assets, of the *de cuis*? Furthermore, the person can, *ante mortem*, decide to agree with the manager of the digital platforms (perhaps by signing the DATD: advance digital processing provisions, somewhat on the same basis as the DAT: advance processing provisions on the subject of self-determination of the human person), to which he has given his consent to the circulation of his data, for the destruction of the same (right to delete data, right to de-indexing provided for by the new privacy regulation) for the time in which he has ceased to live (now by then)? And could such an agreement be revoked (*rectius* resolved) before death?

The current legislation, on the subject of legal assets, succession due to death and protection of personal data, could already allow, also through judicial work in the sense of a systematic-teleological interpretation, dynamic and satisfactory answers to the questions posed above.

12. Conclusions. The principles of interaction: for an anthropo-mechanical coexistence

Everything written up to now allows us to reconstruct a general principle on which to base the man-machine relationship: the ethical imprint *ab origine*, *in fieri* and *usque ad finem* of the machine.

In addition to a process of humanization of the machine, for which we are fighting, we must also think of a process that never allows the dehumanization of man through the machine[44].

The overseer, the controller, the forecaster, the final agent of the machine must and must always be the man, who will evaluate (in the juridical world it is primarily the *homo juridicus*) the ontological merit of any intelligent system, which for being able to "coexist" must be based on some principles that it is always good to repeat.

The first is represented by intuition, for which the car must know how to adapt to man (think of the case of driverless cars).

The second is given by intelligibility, by means of which man must intuit what the machine is doing. In this sense, in addition to the “defining algorithms”, those that do not need to be injected with legal values because they are assigned to tasks that do not have to do with the human person, but only with monotonous materiality (think of industrial machines) , there are the “optimization algorithms” which, *ex adverso*, need

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[43] R. Trezza, *Diritto e intelligenza artificiale*, cit., p. 29 ss.

[44] R. Trezza, *Diritto e intelligenza artificiale*, cit., p. 27; R. Trezza, *I diritti della persona tra “tecniche” e “intelligenze” artificiali*, cit.

to be ethically marked and to be evaluated as deserving before their use as having to do strictly meaning with the human person.

The third is provided by the concept of adaptability, according to which the machine must adapt to the environment in which man lives and to the human personality, so that even the AI, as a whole, can pursue the primary objective of protection of human life and improvement, if considered worthy in its ontological creation, in its itinerant adaptation and in its specific purpose, of the conditions of the human person, allowing a development as harmonious as possible of the same.

Finally, however, there is the principle of objective adequacy, for which it is necessary to establish the operational priorities (objectives) of the algorithm that are not in it, but in the person who is *sedes dignitatis* par excellence.

In a mixed environment it is the person and his unique value that establishes and hierarchizes the priorities: it is the robot that cooperates with man, in a serving and functional vision, and not the man who assists the machine.

It is important to state, at the end of this work, that man must always be a careful controller of the machine and never his slave.