ABOUT THE LIMITS OF THE AI ACT:
LEGAL, LINGUISTIC, ETHICAL BOUNDARIES

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Abstract: Unlike the outcomes of other schools of thinking (USA, Japan), the first-ever legally-binding piece of legislation on artificial intelligence (AI) produced by the European Union took the principle stance of defending the fundamental rights. The current paper aims at drafting the profile of the AI Act by highlighting its limits from legal, linguistic and ethical point of view. It also dwells on the policy relevance of these limits and decrypting them into hints about how the European Union assumes its role in the world in respect to the development and use of this new technology.

1. Introduction

In 2024 the European Union (EU) adopted the first legally-binding piece of legislation worldwide on artificial intelligence which became mandatory to a virtual pool of 450 million users. The AI Act (officially known under the name Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down 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)) was adopted in a form of regulation which implies that all its provisions are mandatory towards all 27 Member States of the European Union. In addition, it holds European Economic Area (EEA) relevance, roughly adding some virtual 15 million addresses of the AI Act.

The legal initiative is grounded on Art. 16 and 114 of the Treaty on the Functioning of the European Union (TFEU), thus indicating the applicable procedural rule of the co-legislation (involving both the European Parliament and the EU Council) and the main purpose of enacting on the matter.

In April 2025 the approach was complemented by the European Commission with a package with no legislative power (yet with political message and financial backing) on *AI Continent Action Plan*, aiming on fostering the research on and development of AI in the European Union.

2. Legal boundaries

By grounding the legal initiative on the AI Act on Art. 16 and 114 of the Treaty on the Functioning of the European Union (TFEU), the focus of the enactment is drawn towards protection of the personal data and ensuring the functionality of the Internal Market of the European Union.

Art. 16 TFEU reads:

> "*1. Everyone has the right to the protection of personal data concerning them. 2. The European Parliament and the Council, acting in accordance with the ordinary legislative procedure, shall lay down the rules relating to the protection of individuals with regard to the processing of personal data by Union institutions, bodies, offices and agencies, and by the Member States when carrying out activities which fall within the scope of Union law, and the rules relating to the free movement of such data. Compliance with these rules shall be subject to the control of independent authorities. […]*",

while Art. 114 TFEU reads:

> "*1. Save where otherwise provided in the Treaties, the following provisions shall apply for the achievement of the objectives set out in Article 26. The European Parliament and the Council shall, acting in accordance with the ordinary legislative procedure and after consulting the Economic and Social Committee, adopt the measures for the approximation of the provisions laid down by law, regulation or administrative action in Member States which have as their object the establishment and functioning of the internal market. [2….10.]*`"

The Article 26 TFEU which is invoked by Article 114 TFEU explicitly points towards the establishing or ensuring the functioning of the Internal Market of the European Union, which comprises `an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured in accordance with the provisions of the Treaties`.

In other words, the main focus of the EU legislators was to ensure protection of the personal data used or processed by AI means while fostering the economic growth of the EU and EEA area by the use of AI.

The initial EU legislative intention therefore leaves aside, at least for the moment, other important aspects of this new technology, such as production or research. Production or research on AI are still possible in the European Union, however they are not bound by an EU-level legal framework. These aspects can benefit of legal framework in the individual Member States of the EU. This peculiarity of the EU enactment process is, without any doubt, tributary to the political choice of the European Union which decided to take a leading role worldwide about AI in a regulating-as-we-go-approach.

In the meantime, even before a first evaluation of the impact of the AI Act, the European Commission decided to take a step forward, and in April 2025 it tabled the *AI Continent Action Plan* with the clear ambition for the EU to become a global leader in artificial intelligence. The move does not aim to regulate, but rather to close the competitive gap for EU with a political approach combined with important financial support.

3. Linguistic boundaries

When regulating a brand-new technology, the negotiators are language creators. One of the linguistic challenges is to find the appropriate language to express the new referral concepts and to ensure the logical and linguistic bridging with already established normative framework which might become incident.

When defining its object-matter, the AI Act indicates in recital 12 that `[a] key characteristic of AI systems is their capability to infer. This capability to infer refers to the process of obtaining the outputs, such as predictions, content, recommendations, or

decisions, which can influence physical and virtual environments, and to a capability of AI systems to derive models or algorithms, or both, from inputs or data. `

The main conceptual and linguistic categories operated by the AI Act revolve around three key-concepts: 1) *human*; 2) (natural) *person*; 3) *machine*. This conceptual triad is used to establish the world's first legal framework for the AI technology and speaks volumes about the turning point it marks in the history of the human kind. By the use of the three key-concepts it basically marks the starting point for the legal use of this new technology, but also sets the scene for the transitional phase from incipient AI-use towards dominant AI-use in the social life.

The linguistic indicators for the purpose of the AI Act occupy the prevailing place in terms of occurrence. The most occurrences are given by the term *persons*: 473 occurrences throughout the text of the AI Act, including 134 occurrences under the legal meaning *natural persons* as opposed to *legal persons*.

The semantic field is complemented by a minimum of 4 occurrences of the notion *human beings*, yet they are used as such by virtue of their use in the standard (agreed) EU-language to express the phenomenon of trafficking in human beings (for a more detailed linguistic analysis in relation to this concept see Stănescu. 2023: 78).

The largest range of semantic expression is to be found in relation to the lexeme `human'. It is used 72 times to form compound structures expressing human-relates features, as a referral for the features of the new technology involving AI. Thus, `human' is put in relation to specific activities (human *oversight/involvement/intervention/perception/behaviour/assessment/decisions/review/ decision-making*), to particular approach (human-*centric*), but also to philosophical categories (human *well-being/features/dignity/intent*).

More specifically, when referring to *biometric categorisation systems*, they are put in connection with *natural persons' biometric data* (recital 30), while the use of AI systems for real-time remote biometric identification of *natural persons* in publicly accessible spaces (recital 38) relates to the legal notion (in contrast with the *legal person*). However, the aspect of *identification* does not benefit of language consistency, as recital 35 speaks about `the use of the AI system with a view to identifying a *person*', while recital 34 speaks about *individual*'s identity.

According to the provisions of recital 42, `*natural persons* should never be judged on AI-predicted behaviour based solely on their profiling, personality traits or characteristics, such as nationality, place of birth, place of residence, number of children, level of debt or type of car, without a reasonable suspicion of that person being involved in a criminal activity based on objective verifiable facts and without human assessment thereof.'

The aspects in relation to the control and oversight of the AI technology are semantically associated to the notion of `human'. For example, in line with the human-centric approach of the AI (Art. 1 para 1), the legislative text refers to the `human-machine interface tools, that […] can be effectively overseen by natural persons (Art. 14 para 1 – *Human oversight*); the humans [who] are entrusted with the control and oversight of the AI technology (para 27), or the high-risk AI system [that must] be

provided to the deployer in such a way that natural persons to whom human oversight is assigned are enabled (Art. 14 para 4).

4. Ethical boundaries

The AI Act sets out a principle stand of respecting some ethical boundaries, which are reflected by specific language indicators. Although a fundamental guiding principle in the legislative technique, the very mentioning of the ethical boundaries is extremely rare in nowadays legislation, therefore it deserves special attention.

In the EU approach, the AI is expected to be `trustworthy and ethically sound' (para 27), following the non-binding ethical principles developed for that purpose. These principles refer to: human agency and oversight; technical robustness and safety; privacy and data governance; transparency; diversity, non-discrimination and fairness; societal and environmental well-being and accountability.

An ethical review is requested in the case of testing of the high-risk AI systems in real conditions (Art. 60) as a safe net for the approval of AI systems deemed very dangerous for the social and environmental well-being. This sensitive approach is to be placed in the context where a catastrophic risk stemming from the use of the general artificial intelligence relate to a very pessimistic scenario including the risk of extinction of the human kind, similar to a nuclear war. This scenario was identified in a study run by the GladStone AI as part of an assessment of AI risk commissioned by the U.S. State Department. Its underlying evidence suggests that the Artificial General Intelligence (AGI) tends to become uncontrollable beyond a specific stage of development. As a timeline, this risk horizon was established by OpenAI and Google DeepMind by 2028, while others estimate it might take decades before turning real.

More specifically in this remit, para 29 of the AI Act refers to `AI-enabled manipulative techniques [that] can be used to persuade persons to engage in unwanted behaviours, or to deceive them by nudging them into decisions in a way that subverts and impairs their autonomy, decision-making and free choices' and states that `AI systems may also otherwise exploit the vulnerabilities of a person or a specific group of persons due to their age, disability within the meaning of Directive (EU) 2019/882 of the European Parliament and of the Council, or a specific social or economic situation that is likely to make those persons more vulnerable to exploitation such as persons living in extreme poverty, ethnic or religious minorities. Such AI systems can be placed on the market, put into service or used with the objective to or the effect of materially distorting the behaviour of a person and in a manner that causes or is reasonably likely to cause significant harm to that or another person or groups of persons, including harms that may be accumulated over time and should therefore be prohibited.'

It therefore sets a legal limit to the use of the AI technology in order to protect the most vulnerable members of the society and insists on the human oversight, especially in the case of the high-risk AI systems before their placing on the market or them becoming operational. The main purpose of the human oversight is specifically to `prevent or minimise the risks to health, safety or fundamental rights that may emerge when a high-risk AI system is used in accordance with its intended purpose or under conditions of reasonably foreseeable misuse, in particular where such risks persist despite the application of other requirements […]' (Art. 14 para 2).

These limits are provided by the AI Act also for the particular danger posed by the machine-brain interfaces as they can be used to facilitate a `higher degree of control of

what stimuli are presented to persons, insofar as they may materially distort their behaviour in a significantly harmful manner'. (para 29)

5. Overall assessment and conclusions

According to recent research (Gladstone 2025) the global market is expected to depict a compound annual growth rate (CAGR) of 36.6% from 2024 to 2030. North America, Europe, Asia-Pacific and the rest of the world had in 2023 a rough even share of the global market in AI, with the Northern American industry in the leading role with 30.9%, estimated at almost 200 billion USD. In other words, in the early days of development of this revolutionary technology, the major players started with relatively even chances for conquering the market. After only two years, the balance tends to favour the Nord-American continent (USA and Canada together) or India in terms of production and development. Europe is randomly represented by start-up sized developers based in Latvia or Poland.

When deciding to only regulate the data protection and internal market-related aspects in the use of AI, the European Union assumed a distinct profile in the world in respect to this developing technology. While choosing to bring under the EU legal framework only these aspects, the EU basically shaped its international profile in the world of the AI business. This approach appears to have been corrected by the recent initiatives of the European Commission, such as the *AI Continent Action Plan* which brings a corrigendum to the initial vision for the EU to focus only on the use of AI. With the *AI Continent Action Plan* the EU also assumes the ambition of becoming producer of AI technology, not playing the role of mere user.

The upgrade in the level of ambition of the EU takes up the highlights of a recent Deloitte report (Soral 2024) indicating the shift "from the traditional notion of developers as solely manual coders […] towards a future where they act as 'orchestrators of AI-driven development ecosystems." Although dedicated to the specific realm of coding, the study emphasizes a number of strong points of the use of AI which can be extended for the general use: increased efficiency, improved accuracy, enhanced productivity and a more personalized user experience.

In this context, the paradox identified in the AI Act is that it invokes in para 133 `[a] variety of AI systems [that] can generate large quantities of synthetic content that becomes increasingly hard for humans to distinguish from human-generated and authentic content.' while inducing that such a sensitive task may be performed by AI-driven machine.

In a nutshell, while the European Union assumed a pioneering role world-wide about enactment of AI technology, its initial stance was focused rather on the impact of the use of AI on the EU's internal market and on the data protection; production was left aside, while research was only marginally tackled. In less than one year, in April 2025, the EU has already acknowledged that such an approach entails a major competitive risk and was further developed by bringing support for the innovation, production and research.

In linguistic terms, the key lexicon used for regulating the AI technology in the European Union mainly refers to the pair `human-machine' and its semantic family. It reflects the typical enactment solution whereby the known reality is related to 'human' and the transition towards the new technology uses it as referral since its features and impact and still `work in progress'. For the moment, the technological fusion between humans and machines are treated by the EU legislation as a threat (machine-brain

interfaces), but this is only a legal assumption and does not create interdiction in respect to their production.

In linguistic terms, the AI Act is a creator of language, as it sets the main terminology with legal weight which plays a referral role when talking AI technology in the European Union. It thus performs one of the main roles of the language, namely `to serve the perceived needs of the societies that build [it].' (Friedrich. 2016: 5)

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