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Sociotechnical imaginaries of artificial intelligence in EU law making: a focus on crime and security

Anita Lavorgna
anita.lavorgna@unibo.it
Department of Political and Social Science | University of Bologna

Abstract

Artificial intelligence (AI), in its various manifestations, has become a core topic in debates concerning crime and security, both because of its potentially criminogenic features, and because of its possibilities as a tool for crime prevention and mitigation. In recent years, critical criminological and criminal justice scholarship has started to pay attention to the sociotechnical imaginaries and the narratives depicting AI especially in the context of crime control, emphasising how prevalent narratives can obfuscate the harms of data-driven technologies and evince idealistic imaginaries of their capabilities. This contribution furthers this line of inquiry, focusing on the AI-adjacent sociotechnical imaginaries with a focus on crime and security in EU law making in the debates and negotiations around the Artificial Intelligence Act (the EU regulation on artificial intelligence).

Keywords

Crime | Security | Law-Making | Sociotechnical Imaginaries | Ai Act

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1. Introduction

Artificial Intelligence (AI) is a buzzword that is booming within many industries nowadays. In practice, it can refer to many things (Milivojevic, 2022). For the scope of this contribution, AI can be broadly defined as “a collection of technologies that combine data, algorithms and computing power” (European Commission, 2020: 2) at the basis of systems that display intelligent behaviour by analysing their environment and taking actions with a degree of autonomy to achieve specific goals (European Commission, 2018). These actions can be very complex but still specialized (“weak AI” or “narrow AI”, which is the most successful realization of AI to date), or they could have general applications, which would require an intelligence equal to humans to learn, solve problems, and plan for the future (“strong AI”, which exists today as a theoretical concept).

Even if the presence of a “human in the loop” is mostly needed, AI’s impact in our societies is becoming so significant that its effects are often described as “transformative” (Esposito, 2013; Gruetzemacher and Whittlestone, 2019). This feature is particularly remarkable when we consider that AI has the potential to become increasingly ubiquitous in our lives, offering a number of possibilities for the public good but also important challenges to be met. Nowadays, AI is often used to make certain services to the public or some production processes more apt (e.g., Cioffi et al., 2020; Meyer et al., 2020), but it is also deployed in more sensitive sectors such as – as we will see in detail in the following section – in the crime and security arena (Brownsword and Harel, 2019; Hayward and Maas, 2021). Under the aegis of neoliberalism, the use of AI would be a way to boost efficiency and “smarter” decision-making (Zavrsnik, 2019; Chan 2021).

Overall, it can be claimed that AI is still in a formative stage – both as regards its technological development and its public perception (Richter et al., 2023). Popular imaginaries surrounding AI and, more broadly, the idea of computers able to replicate the human mind, have been around for decades, with the myth of the thinking machine being a focal point of intellectual debate and popular culture since the 1950s. This mythology reignited in more recent times, with the increased availability of computer power and storage, digital data, and advances in areas such as data mining, machine learning, and natural language processing (Natale and Ballatore, 2020¸ Ballatore and Natale, 2023). AI, as a sociotechnical construct, emerges and grows through language in society (Kajava and Sawhney, 2023).

As such, we cannot ignore the role that media, science fiction and the movie industry play in contributing to the narratives surrounding AI (Bory and Bory, 2015; Sartori and Bocca, 2023), which has important implications on the public understanding and debates regarding this technology (Brause et al., 2023; Chuan, 2023). For instance, research has shown an increase of media coverage of AI in recent years (at least in the Western countries that have been considered by analyses so far), with news being mostly positive and focusing on economic framing (Brause et al., 2023. See also Suffia et al., 2022).

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Surprisingly, the development of AI has been happening in a regulatory void (Milivojevic, 2022), except for some forms of self-regulation. As such, the AI Act – i.e., the EU regulation on AI – has been generally welcomed as the first comprehensive effort to regulate AI via a legal framework while trying to establish potentially global standards; it offers common rules and a series of key principles that aspire to be proportionate and flexible, trying to balance the need to mitigate the risks inherent the inappropriate use of AI, with the need to support innovation (European Commission, 2021a,b; Smuha, 2021; Lavorgna and Ugwudike, 2022).

We should not forget that lawmakers and policymakers themselves have different beliefs and perceptions on AI, and these differences impact their choices (Natale, 2019). As such, it is worthwhile to take a closer look at the debates and negotiations around the AI Act, as they present different sociotechnical imaginaries and narratives depicting AI, hence offering both an idea of a desirable future and the way to achieve that future (Hoff, 2023). This contribution focuses on the articulation of sociotechnical imaginaries of AI in relation to the future of crime and security, which is a critical area to investigate because of the major implications AI technologies can have on personal rights and freedoms.

2. Artificial intelligence in the crime and security arena

The use of big data in the crime and security arena, and especially of big data analytics (such as sentiment analysis and natural language processing) to manage and "make sense" of large datasets, has received increasingly attention over the past 20 years – both in academia and in the political debate. This is part of the phenomenon of so-called datafication, which is a by-product of the accumulation and digitalization of both large-scale administrative data, and the availability of behavioural and social data including those originating online (Lavorgna and Ugwudike, 2021). The use of AI in this domain is nothing else than the latest step in this direction, with AI systems allowing to automate even more a range of tasks at several levels of the criminal justice process, influencing operational decisions.

AI-enabled system is already used in practice, for instance, to aid decision making in law enforcement, judiciary and penitentiary settings, as well as by intelligence agencies (Zavrsnik, 2019; Hayward and Maas, 2021; Castro-Toledo et al., 2023).

Common examples are the numerous applications in predictive policing, machine evidence and recidivism algorithms, both at pre-investigation stages and within criminal proceedings, with the aim to increase operational efficiency and facilitate decision-making (Sachoulidou, 2023a, b). Consider, for instance, the use of software for facial recognition, to assist emergency call handlers in high stress and time-sensitive environments, in sentencing, or even in military security (e.g., Suchman, 2020; Ryberg, 2024; Wakefield, 2024).

The use of AI and big data analytics in criminal justice has a deep social impact, as it transforms institutional practices and creates new forms of governance (Hannah-Moffat and Avila, 2023). It is changing knowledge production and crime control

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policies, at time leading to clashes with established criminal procedure rules (Zavrsnik, 2019). As an unintended consequence, AI applications are also blurring the boundaries in the crime control and security domains: examples are the increased use of preventive measures and state surveillance in anti-terrorism efforts, often in contrast with legal concepts that were developed over many decades as ways to limit the executive power and interferences in personal liberties (Zavrsnik, 2019); or the use of AI systems to control people and their movement, especially when they are deployed along physical borders to check on the mobility of illegalized non-citizens and in the Global North (as discussed in Milivojevic, 2022).

Even if AI techniques in the crime and security arena are often promoted as a promising field of study (Dakalbab et al., 2022), with imaginaries of "smart" criminal justice being generally supported by the proponents and developers of the technologies (such as tech companies, but also researchers with a computer science and engineering background – see Lavorgna and Ugwudike, 2021), critical algorithm studies have been emerging to counteract the "solutionist trend" whereby technical solutions are offered as a panacea to solve social problems (Zavrsnik, 2019).

According to this view, AI-based techniques in the crime and security arena are to be opposed (for an overview of the critiques, see Lavorgna and Ugwudike, 2021), or it is recognised that they can play a role as new forms of knowledge acquisition but only when used "with a pinch of salt", for instance to explore certain risks, and without forgetting that their results could be easily misinterpreted if we do not keep in mind the epistemic limits of statistical results (for a detailed discussion on this point, see Castro-Toledo et al., 2023).

More in detail, it is acknowledged that the use of AI poses a number of challenges, and scholars in criminal law and critical criminology have raised concerns on the implications of adopting what are *in nuce* statistical risks assessment tools to determine vulnerability, culpability, and resource allocation (e.g., Hannah-Moffat, 2009; Greenstein, 2021; Ugwudike, 2021; Bakiner, 2023a; Castro-Toledo et al., 2023; Suchman, 2023). As stressed by Hannah-Moffat and Avila (2023) among others, the current lack of consistent conceptualizations and of epistemologically informed interdisciplinary dialogues are allowing misunderstandings in both the design and use of AI-based tools in the criminal justice systems, where they create several "data harms".

For instance, AI-based tools would reproduce discriminatory effects, blur distinctions between causation and correlation, and decontextualize and obfuscate sensitive data and intricate legal concepts (Hannah-Moffat & Avila, 2023). Indeed, at the basis of any AI system are learning datasets and coders from which the system "learns" and is further developed; but if a dataset is biased, or otherwise limited, the whole learning and developing process will be problematic.

Moreover, similarly to what was discussed with reference to biometric technology used in criminal justice settings (Franko Aas, 2005, 2006), also with AI tools supposedly objective and unbiased knowledge or solutions would replace human-based decision-making. According to this view, the human (the suspect, or the deciding agent) therefore is not to be fully trusted – a view that can be and has been

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harshly criticized, and that can led to fundamental changes in how people approach their work, leading to new types of unintended errors and accountability issues, while directly hindering a number of constitutional rights (see Zavrsnik, 2019).

AI is also criticized for being a "black box", whose obscure, elusive and increasingly complex mechanisms would be impenetrable to outsiders (O'Neill, 2016; Katz 2020).

This aspect is particularly problematic if we consider that reportedly AI studies suffer from a major replication crisis, where many sensational claims cannot be properly tested[1], and from underperformance of the technology, whose outcomes are not close to what is initially promised (Milivojevic, 2022).

As such, recent literature advocates for the adoption of specific procedural safeguarding when using AI-based systems in criminal law and justice, which are deemed necessary to uphold rule of law requirements, and particularly transparency, fairness, and explainability (Castro-Toledo et al., 2023; Sachoulidou, 2023a). We should not forget that, despite its exponential growth in application, AI is still a relatively new technology in the crime and security arena. This leaves open an important window to take actions to minimize AI-related societal risks, and to independently evaluate the impact of introducing AI systems in the sensitive domains (Chan, 2021; Sanders and Chan, 2023).

3. A closer look into sociotechnical imaginaries

As discussed in Jasanoff's (2015: 3) seminal work, even if in common parlance "the word 'technology' tends to be equated with machine or invention, something solid, engineered, black-boxed" [...], technologies as we know them "would never have taken to the roads without the myriad social roles, institutions, and practices spawned by modernity: scientists, engineers, and designers; patents and trademarks; autoworkers and big corporations; regulators; dealers and distributors; advertising companies; and users [...]" – a perfect reminder that technologies are an integral part of our societies, and exists within the social experience. As such, how technological visions enter the social life matters. For instance, in the case of AI, these visions determine the narratives surrounding hopes and fears around AI, influencing how AI is developed, deployed, and regulated (Dave and Dihal, 2019).

The notion of sociotechnical imaginaries is very useful to further unpack this point. Again, borrowing Jasanoff's words, sociotechnical imaginaries are "collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order" (Jasanoff, 2015: 5-6). They are "durable", but also "temporally situated and culturally particular", and as the name suggests can be interpreted as both "products of and instruments of the co-production of science, technology, and society in modernity" (Jasanoff, 2015: 5-6). They can originate in the visions of single individuals or groups, and then

[1] Reportedly, only 15 percent of relevant studies share their algorithms with experts and the wider community (Horgan, 2020).

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can be articulated and propagated by others, becoming collectively held (ibidem). While sociotechnical imaginaries are "typically grounded in positive visions of social progress", they also correlate "with the obverse shared fears of harms that might be incurred through invention and innovation, or of course the failure to innovate" (ibidem – see also Sturken & Thomas, 2004). In other words, they are acts of *futuring*, as they allow the identification, creation and dissemination of images of the future and as such they shape the possible space for action (Oomen et al., 2021: 253; see also Schulz, 2015). The power of imagination can indeed influence how and which futures become performative (Cantó-Milà & Seebach, 2015; Hoff, 2023)[2].

Importantly, within the same society, multiple collective imaginaries can coexist (Kling & Iacono, 1990; Iacono & Kling, 1996; Pellegrino, 2015), even if it is worth noting that digital and mediatic capitals can accord some imaginaries a dominant position (Jasanoff, 2015; Lavorgna and Ugwudike, 2021). While it is indeed important to recognise that imaginaries can originate also bottom-up, it should not be surprising that collective imagination is often guided by visible actors with the authority to set policy agendas, as can be observed in policy discourses, which can be suitably mined for insights into specific sociotechnical imaginaries (Jasanoff, 2015: 37).

These seminal reflections were first developed with reference to other technologies than AI, but they can still help us to focus the issue of future making in a broader theoretical context. More specifically in the context of AI, corporate sociotechnical imaginaries – framed and reinforced by tech companies – have become increasingly dominant over the past few years, offering specific ideas of technological progress and, overall, a utopian vision of AI futures (Mager and Katzenbach, 2021; Hoff, 2023; Sartori and Bocca, 2023). Legitimation, promotion and reassurance are all tactics used to try and evoke affective meanings of attractive sociotechnical imaginaries (Hoff, 2023). At times, in these imaginaries we can find the transhumanist idea to enhance the human condition with the use of advanced technologies, including via interactions between individuals and machines that would increase collective intelligence to unprecedented levels, bringing humans to new levels of consciousness (for an overview, see Natale and Ballatore, 2020). In practice, however, there is often a gap in between sociotechnical imaginaries and the situated reality of technology-human interaction, and what it allows (Sanders and Chan, 2023).

Also, in criminal justice settings there are competing sociotechnical imaginaries (e.g., Chan, 2021), which directly affect practices. Lavorgna and Ugwudike (2021) systematically reviewed and compared multidisciplinary academic abstracts on the data-driven tools (including AI tools) shaping (or with the clear potential to shape) decision-making across several justice systems. In their work, three main frames – optimistic, neutral and oppositional – for understanding how relevant technologies are portrayed were identified, each evoking different imaginary. More in detail,

[2] To come about and become performative in practice, imagined futures need to be credible (if certain futures are seen as credible, people may act upon them in the present), and convey affective meanings (Hoff, 2023).

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optimistic frames (by far, the most prominent and frequent frames) evinced utopic sociotechnical imaginaries, presenting AI models as the future of criminal justice because of their scientific objectivity, technological superiority and vital utility. *Neutral frames*, on the other hand, evoked a technorealism vacillating between utopic and dystopic imaginaries. These frames were often nuanced in envisioning sociotechnical imaginaries, for instance recognising how AI systems could also generate negative externalities; or emphasising the need for more and better empirical research on technology adoption in real-world practice, and the improvement of datasets and codes to overcome current limitations. Finally, *oppositional frames* rejected the technochauvinism (Broussard, 2018) of the sociotechnical imaginaries emphasising technological potentialities, contesting the optimistic visions glossing over potential harmful effects (Chan, 2021), and rather drawing attention to the social impacts including problems stemming from data injustices and the need for robust governance[3]. Interestingly, while oppositional frames were proposed by authors with more subject knowledge of criminal justice systems and sociolegal theorisations (intellectual and critical capital), optimistic frames were generally supported by researchers with a more technical background (digital capital) (Lavorgna and Ugwudike, 2021)[4].

4. This contribution

As recognised by Jasanoff herself (2015: 14), there are important mechanisms of interconnections between technoscientific and political practices of collective imaginaries that have not been fully articulated yet. In AI-adjacent research, in particular, the relative lack of attention over these mechanisms is causing some critical research gaps[5]. For instance, considering how lawmakers and other stakeholders envision the potential benefits and challenges arising from AI is of great importance, as the imaginaries they depict have a unique potential not only to determine AI's possible trajectories, but also its integration into society. This article offers a contribution to this line of inquiry, focusing on crime and security in EU law making in the debates and negotiations around the AI Act.

Both at the EU and international levels there have been, and still are, numerous debates on the compatibility of AI-based systems with human rights and the rule of law, especially in sensitive context such as the crime and security arena. Consider, for instance, the 2018 European Ethical Charter on the use of AI in judicial systems and

[3] The key oppositional frames were as follows: privacy violations, racial bias, algorithmic opacity, fairness concerns, inadequate legislation, the commercialisation of datafied criminal justice and the presence of systemic bias (Lavorgna and Ugwudike, 2021).

[4] Conversely, for some disciplines and practitioners (policymakers, law enforcement officers and other practitioners that use or rely on data-driven technologies) alike it is difficult to entertain a serious debate on the use of AI in crime and security because of their lack of a deep epistemological understanding of how these systems work (Lavorgna and Ugwudike, 2021; Castro-Toledo et al., 2023).

[5] Critical because of the formative stage of AI as discussed earlier (Richter et al., 2023), meaning also that policies, practices and standards have not crystallized yet.

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their environments (JEPEC, 2018), the 2020 feasibility study on the possible introduction of a mechanism for certifying AI tools and services in the sphere of justice and the judiciary (CEPEJ, 2020) – both born under the aegis of the Council of Europe; or the European Commission Communication on Building Trust in Human-Centric AI and the European Commission White Paper on AI (European Commission, 2019, 2020; see also Sachoulidou, 2023b).

The AI Act represents the latest and more influential effort in this regard, with the EU pursuing a position on global leader on ethical AI regulation (Krarup & Horst, 2023) and recognizing that a lack of standardization in this arena would create a significant barrier for the development and deployment of AI systems (Goodman, 2023; Laux et al., 2024). Interestingly, the Act does not regulate AI as such; rather, it regulates the entry into the market and the use of technological systems that rely on AI, with the aim to maintain neutrality towards the technology itself, and not to risk to over rely on an obsolescent definition of AI (European Commission, 2021a; Lavorgna and Ugwudike, 2022).

Before moving to the core of this contribution, it is worthwhile to present a brief overview of the timeline of the AI Act, highlighting some key events. In October 2020, with EU leaders discussing the digital transition, the European Council (2020) invited the Commission to (among other things) propose ways to increase investments in Europe in AI research, innovation and deployment, and provide a clear, objective definition of high-risk AI systems. On the 21st of April 2021, the European Commission released a proposal for a regulation aiming to harmonise rules on AI systems (AI Act), ensuring legal certainty and facilitating the development of a single market for AI applications, while accelerating investments in AI in Europe (European Commission, 2021b). As part of its standardization effort, the proposal follows a risk-based approach, differentiating between uses of AI systems depending on the severity of risk to the health and safety or fundamental rights of natural persons they create or might create. Four different levels (unacceptable risk, high risk, limited risk, and minimal risk) are identified. As regards the crime and security arena, this risk-based approach is of much interest. Consider, for instance, that among the AI systems that can create an unacceptable risk and are therefore generally forbidden are those systems using "real time" remote biometric identification in publicly accessible spaces; but several exceptions are in place for law enforcement purposes, which could undermine the safeguards in place (see Lavorgna and Suffia, 2021).

On 6th December 2022, the Council agreed on its position on the AI act, aiming to ensure that AI systems placed on/used in the EU are safe and respect existing law on fundamental rights (European Council, 2022). After months of negotiation and following 3-day "marathon talks", the Council and the European Parliament finally reached a provisional agreement on the AI Act on 9 December 2023 (European Council, 2023). The final text was approved on March 13, 2024, by the European Parliament, and – awaiting the Council's position – it is expected to apply from 2026.

In a recent study using the EU AI Act (in its draft form proposed by the European Commission in April 2021) as a case study, Bakiner (2023b) already noted the existence of pluralistic sociotechnical imaginaries which differ regarding the

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characteristics of AI as it relates to society, politics and law; and whether and to what extent the law can/should influence legal regulation or intervene into expert debates in AI[6]. Differently yet relatedly, this contribution focuses only on sociotechnical imaginaries of AI in relation to crime and security as they are presented by the EU' s main law-making actors and bodies: the Parliament (with its diverse members) and the Council, which jointly exercise the legislative function, and the Commission in its role of proponent of EU legislation.

Through the procedure files section of the Legislative Observatory (European Parliament)'s website[7] and the Council's website, it was possible to access some key documents in this regard, and specifically:

- the initial legislative proposal by the Commission (21 April 2021);
- the "general approach" by the Council (25 November 2022);
- a joint report by the European Parliament's Committee on the Internal Market and Consumer Protection and the Committee on Civil Liberties, Justice and Home Affairs (22 May 2023);
- two decisions by Parliament (14 June 2023 and 13 March 2024, plus a corrigendum dated 19/4/2024);
- two plenary debates of the Parliament (13 June 2023 and 12 March 2024 – videos and verbatim reports).

Once retrieved, all these documents (in their English version; interventions in other languages have been translated into English with Google Translate) were manually coded and thematically analysed in chronological order, to unpack not only the key themes relating to sociotechnical imaginaries, but also whether they evolved during the legislative process. A balanced approach of inductive and deductive coding (Fereday & Muir-Cochrane, 2006) was used, focusing on: AI advantages; AI negatives and risks; neutrality; AI uses; cases and examples; priorities; futures; emotions; hypes; political parties; political opposition and cleavage. Overall, from the analysis, the documents offered two main diverse layers of interpretation, as a clear divide emerged between the themes and tones unfolding from the discussion *among* institutions, and those unfolding from the debates *within* the Parliament. The first layer is the formal position of the different legislative bodies and the corresponding dominant imaginaries; the second layer, emerging from the Parliamentary debates, reflects contrasting political visions of AI-adjacent risks and opportunities, and of desirable futures.

[6] Through an analysis of 302 response papers submitted by developers and deployers of AI, other businesses, civil society groups, academics, concerned citizens and public authorities based in the EU and beyond in 2021 during the third round of invited feedback. There were two initial rounds of invited feedback (multiple-choice surveys and open comments) in 2020, followed by a third round (response papers) that took place immediately after the European Commission published its proposed Act. Among other things, for instance, Bakiner noted how many businesses, and a few NGOs and academics seek clearer definitions and regulatory minimalism in this area; while some NGOs and academics focus AI's potential harms and argue for the need of bolder legal interventions as a desirable constrain to rein in the worst excess of otherwise useful technologies.

[7] See: https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2021/0106(COD)&l=en.

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5. The first layer: the Council vs Parliament chasm

Even if the AI Act proposal and its subsequent versions attempt to recognise both the advantages and the challenges offered by AI, and to introduce a technology-neutral definition of AI systems, when it comes to crime and security matters a chasm between the Council on the one side, and the Parliament on the other, emerges[8]. Surveillance in public spaces, and specifically the use of remote biometric identification systems for the purposes of law enforcement, is one area of clear difference.

The initial proposal by the Commission, for instance, generally forbids the use of such systems as they are considered particularly intrusive (Whereas 18), while envisaging some specific safeguards to "exhaustively listed and narrowly defined situations" such as the search for potential crime victims including missing children, terrorism, and certain forms of serious crimes (Whereas 19. See also art. 5), with "appropriate limits in time and space" (Whereas 20) and if "subject to an express and specific authorization by a judicial authority or by an independent administrative authority of a Member State" (Whereas 21).

The Council, inter alia, agrees to allow biometric identification systems in publicly accessible spaces for law enforcement purposes, further clarifying in its "general approach" when they can be used. Further, it adds an explicit clarification to the fact that the AI Act (and its safeguards) does not apply to security, defence and military purposes (art.2).

Conversely the Parliament, in line with the position advocated by many civil society organizations, tends to be more restrictive: it wants to ban the use of all biometric identification systems for both real time and *post facto* use, with very limited exceptions only to the *post facto* use when there is a need linked to a specific serious criminal case, and pending a specific judicial authorization (e.g., amendment 33 of 13 March 2024, and the Corrigendum). Also, all biometric categorization systems using sensitive characteristics such as gender, race, ethnicity, religion, political orientation or citizenship status are to be banned.

Overall, the Commission and the Council seem to rely on neutral or even optimistic frames when it comes to the potential of AI on crime and security matters, depicting the AI systems as important criminal justice tools to enhance law enforcement capabilities (vital utility, see Lavorgna and Ugwudike, 2021). The Parliament, on the other hand, uses oppositional frames alongside neutral ones, drawing attention to the social impacts of AI, including problems stemming from data injustices and the need for robust governance.

Similarly, the initial proposal by the Commission recognises some intrinsic limitations of AI systems when applied to the crime and security arena, where they could lead to biased results and entail discriminatory effects (see e.g. Whereas 33, 39 and 40 with reference respectively to remote biometric identification, AI systems

[8] The AI Act was assigned jointly to the European Parliament's civil liberties (LIBE) and internal market (IMCO) committees.

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used in migration, asylum and border control management, and AI systems intended for the administration of justice). These limitations, however, are generally linked to issues in the development and training of a given AI system (Whereas 38); hence, for instance, high risk AI systems can be employed in crime and security matters if they are "designed and developed" with "an appropriate level of accuracy, robustness and cybersecurity […] throughout their lifecycle", and potential biases are addressed with "appropriate mitigation measures" (art.15). This approach suggests the reliance on neutral – solutionist – frames (Lavorgna and Ugwudike, 2021): these frames recognise potential barriers to efficient algorithmic outputs, but embrace a vision of future benefits and crime control potential stemming from technological innovation, and fair and accurate algorithmic predictions, once technical problems are somehow fixed or optimized.

If the Council's position is in line with this vision, the Parliament pushes for banning inter alia untargeted scraping from CCTV footage or the internet to create facial recognition databases, and predictive policing when it is based solely on profiling, location or past criminal behaviour (see e.g. amendments 50 and 51, Decision 14 June 2023). Indeed, all these AI applications are considered a threat to citizens' rights, in line with the oppositional frames linked to fairness concerns (Lavorgna and Ugwudike, 2021), which recognize how the tendency to focus on technical solutions to fairness issues overlooks the socioeconomic and sociopolitical contexts that shape technological design, application and outcomes (see also Selbst et al., 2018).

6. The second layer: sociotechnical imaginaries of AI and socio-political polarization

As anticipated, a second layer of interpretation emerges from the Parliamentary debates, where contrasting political visions of AI-adjacent risks and opportunities arise. Here, again, a chasm separating sociotechnical oppositional/neutral imaginaries vs positive/neutral imaginaries can be identified. There is indeed a cultural line dividing differing social priorities and desirable futures; as this line becomes politicized, impacting directly the political debate, the observed chasm seems to reflect a new political cleavage (Dalton, 1996), reflecting socio-political polarization on this issue (in line with Jacobs, 2024; Parinandi et al., 2024).

The minutes of the 2023 Parliamentay debate on the AI Act offer several examples pertaining specifically to the crime and security arena. All the members of the European Parliament intervening in the plenary session somehow recognise the complexity of legislating on AI-adjacent matters and the need to embrace nuanced views (e.g., "It is about maximising the potential of AI, while at the same time addressing the existing and looming concerns[9]"; "We must put a clear stop to such

[9] Eva Maydell, rapporteur for the opinion of the Committee on Industry, Research and Energy, 13 June 2023.

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dangers and at the same time promote innovation in Europe[10]"), and some explicitly underline how this is a tasks that deeply exceeds the technical matter (e.g., "It is about asking ourselves the big question: what kind of society do we actually want to live in?[11]"; "The rapid rise of AI requires us to make fundamental choices about our future[12]").

However, those belonging to the centre-right (such as the European People's Party) political groups often refer to the need to use AI systems to support law enforcement to counter serious forms of crimes and terrorist activities (optimistic frame of vital utility, see Lavorgna and Ugwudike, 2021), as exemplified by the following snippets:

> When a child goes missing, every second counts. Seventy-six per cent of abducted children that tragically do not survive the abduction die within the first three hours of their disappearance. Every second counts. And we need to make use of all the instruments at our disposal to prevent such tragedies from happening[13];
>
> I would therefore like to urge my colleagues to vote yes for the police to be able to use AI technology in real time to stop acts of terrorism, to stop kidnappings of children. We must protect our citizens, not terrorists.[14]

To this end, the "fear-driven suggestions" by their political counterparts are explicitly rejected (e.g., "Several left-wing political groups refuse to use artificial intelligence, even though the point here is to protect children, arrest criminals and protect us from terrorism[15]"; "It is not wise legislation to prevent the possibility of using AI to increase security in Europe, where the left in the European Parliament actively wants to prevent the use of AI during, for example, terrorist crimes in progress or while a child is kidnapped [...] [or] to increase border patrols and ensure that we can better control migration to Europe[16]").

Aligned with the claims made about the vital utility of AI systems in the crime and security context, optimistic frames depict AI in line with the optimistic frame of technological superiority, hence configuring a specific idea of an advisable social future and setting expectations associated with it (Lavorgna and Ugwudike, 2021). From this perspective, AI is expected to "make our societies more prosperous and our economies more efficient"[17]. As one member of the Parliament put it,

[10] Thierry Breton, member of the Commission, 13 June 2023.
[11] Eva Maydell, rapporteur for the opinion of the Committee on Industry, Research and Energy, 13 June 2023.
[12] Kim Van Sparrentak (Verts/ALE-Fractie), 13 June 2023.
[13] Jeroen Lenaers (PPE) , 13 June 2023.
[14] Arba Kokalari (PPE) , 13 June 2023.
[15] Geoffroy Didier (PPE), 13 June 2023.
[16] Sara Skyttedal (PPE), 13 June 2023.
[17] Jeroen Lenaers (PPE), 13 June 2023.

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> I do not think AI is a risk, but a chance: a chance for a better future [...] Just because I can hit my finger with a hammer does not mean we should ban all of them and stop building houses. [...] Banning innovation goes far too far. No technology is without risk. [...] I believe AI, like other technologies, will make the future better, and I want it to develop in Europe.[18]

Overall, the possibilities offered by AI systems are connected to sociotechnical imaginaries that can be considered utopic for those with a certain attitude towards law and order, but that also express specific social anxieties and fears; technoscientific innovations, from this perspective, encode “visions of the good society” (Jasanoff et al., 2007: 6) in crime and security matters, but the definition itself of what is “the good society” we aim for has to do with judgments of (symbolic) social stability, consensus and control.

Conversely, the risks emphasised by those linked to the left and the centre-left of the political spectrum (such as those from the Progressive Alliance of Socialists and Democrats) and those affiliated with the Greens are of a completely different nature. Here, the risks identified are those linked to the development and use of AI itself, ranging from general and not better identified fears (“the risk of extinction of the human species because of sentient algorithms[19]”) to (more frequently) concerns intrinsically linked to the nature of AI systems themselves. As such, alongside risks linked to discrimination, disinformation, or to the creation of illegal content, members of the Parliament stress the potential for abuse, surveillance, predictive policing, and for “perfecting human rights violations at the EU's external borders[20]” – hence relying on several of the oppositional frames identified in Lavorgna and Ugwudike (2021), such as privacy violations, racial bias, fairness concerns, and systemic bias.

Additionally, and in complete antithesis of the optimistic frames, AI systems in the crime and security arena are attacked as an “inaccurate”, “flawed technology” leading to ineffective results, as exemplified below:

> Colleagues from EPP will try to make the case how these systems could be used to catch criminals. But one thing is very clear to me: those who want to hide from AI systems will always find a way to do so, and always the innocent will suffer;[21]
>
> Not a single terrorist has been found with biometric mass surveillance, not a single attack has been prevented, but instead countless arrests of innocent people have been made [...] They open Pandora's Box and lead us into a dystopian future of a suspicious high-tech Chinese-style surveillance state. They give authoritarian governments of the present and the future an unprecedented weapon of oppression.[22]

[18] Dita Charanzová (Renew), 13 June 2023.
[19] Brando Benifei, Rapporteur, 13 June 2023.
[20] Cornelia Ernst (The Left), 13 June 2023.
[21] Petar Vitanov S&D), 13 June 2023.
[22] Patrick Breyer (Verts/ALE), 13 June 2023.

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Unsurprisingly, these are the political groups pushing in the debate for the complete ban of AI systems such as those for the remote biometric identification systems in public spaces, or for emotion recognition, for the purposes of law enforcement, which are seen as "unethical[23]" and "intrusive pseudoscientific[24]" practices.

Lastly, the centrist political parties (such as Renew) seem to adopt neutral frames (ambivalent and solutionist) in commenting on the Act, recognising the benefits that AI can bring, but also its potential negative externalities ("We do not condemn AI itself, but rather risky practices[25]").

Similar visions were found also in the minutes of the 2024 Parliamentay debate, with the core difference that in this latter case the comments were not on a developing piece of legislation, but rather on its finalized version, taking pride or assigning blame on the result. Again, regardless of the agreement on the Act itself, a clear divide persists between the different political groups. On the one hand, for instance, a member of the right-wing/far-right political group Identity and Democracy comments:

> I am delighted that our group has been able [...] to contribute to this text with proposals such [...] the use of artificial intelligence by our law enforcement to search for victims of kidnappings, investigate risks of Islamist attacks or fight against child pornography. I also welcome the rejection of the scandalous proposals from the left. I am thinking, for example, of their desire to prohibit the anticipation of illegal immigrants crossing borders [...].[26]

If many seem to agree with the fact that the latest version of the AI Act can be overall considered a fine compromise, reached thanks to meliorative amendments by the Parliament (e.g., "I can say that we have improved the Commission's proposal. But I would have liked more innovation and even stronger protection of civil rights[27]"), some strongly reject the agreed text because of all the exceptions legitimizing the use of otherwise forbidden or high-risk AI systems for crime and security matters (e.g., "Biometric tracking is allowed by the current text, and the profits of the richest have won out over security[28]"; "All the exceptions introduced by the Council open the door to hardcore authoritarianism[29]"), to the point of considering AI itself as a major security threat ("Any innovation must respect the basic rights of our citizens [...] and must not become a tool for manipulating people's privacy and thus a security threat[30]").

[23] Włodzimierz Cimoszewicz (S&D), 13 June 2023.
[24] Karen Melchior (Renew), 13 June 2023.
[25] Dita Charanzová (Renew), 13 June 2023.
[26] Jean-Lin Lacapelle (ID), 12 March 2024.
[27] Svenja Hahn (Renew-Fraktion), 12 March 2024.
[28] Kateřina Konečná (The Left), 12 March 2024.
[29] Clara Ponsatí Obiols (NI), 12 March 2024.
[30] Robert Hajšel (S&D), 12 March 2024.

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7. Conclusion

AI is a phenomenon that nowadays is at the core of public debate, being not only "the flavour of the month" but also a potentially disruptive technology and an accelerator of social change. Its imaginaries can be contrasting, varying from transhumanist techno-visions to technophobic dystopias, and all the greys in between. Together, these imaginaries contribute to creating or changing attitudes around AI, influencing policies and practices. In any case, regardless of whether AI is (or is perceived) as effective or flawed, undeniably it is a technology with profound consequences.

We have seen how competing sociotechnical imaginaries of AI occur also in lawmaking, as the actors involved can foster different beliefs and perception of AI (possibly because of political ideology, lobbying influences, or personal experience). These pluralistic imaginaries are likely to contribute to shaping the spirit and the wording of the law, and the future of AI along with it (Bakiner, 2023b). While the finalized Act, in its current form, seems to prefer neutral, ambivalent frames of sociotechnical imaginaries of AI, by looking at the chronological evolution of the Act and at the diverse visions of some of the actors involved also positive and oppositional imaginaries emerge, positioned alongside clear-cut divides according to different social (security or technology related) anxieties.

Is there a way to bridge these divides, fostering the possibility to further improve the political debate, and to better navigate the possibility to steer AI development and the actualization of its potential in a way that can ultimately increase human wellbeing[31]?

We know that, beyond political identity, our education and specifically our diverse disciplinary backgrounds help explaining differences in our sociotechnical imaginaries (Lavorgna and Ugwudike, 2021), mostly because of the different access to critical and digital capital they allow. To overcome myth and beliefs on AI systems – both as regards their potentially criminogenic or otherwise harming nature, and the tremendous opportunities they might offer –, therefore, we need to improve AI literacy (Chuan, 2023; Rahm, 2023) as well as interdisciplinary efforts starting with the educational sector (see also Sachoulidou, 2023b). The development of critical approaches and solutions about AI education is needed not only to impact visions of AI possible futures on political elites, fostering a more nuanced, inclusive and context-specific approach to risk identification and mitigation (Cantero Gamito & Marsden, 2024), but most importantly on their constituencies, curbing current issues of epistemic injustice (Rahm, 2023).

These interdisciplinary efforts are needed also in research and development settings where traditionally a small number of scientific disciplines framed the discussion around AI in a certain direction thanks to their digital capital and, at times, thanks to corporate support, but probably lacked some of the critical expertise traditionally residing in the social and political sciences (Lavorgna and Ugwudike,

[31] On this, see also European Commission, 2019; Zavrsnik, 2019.

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2021)[32]. On the other hand, these latter disciplines – congenitally more cautious in making claims about the future and in shaping political debates and business practices (Halford and Southerton, 2023) – can bring to the table crucial resources and multidimensional approaches to ideate visions of desirable futures, or to alert future-making actors on current and emerging societal risks.

[32] For instance, as underlined by Sartori and Bocca (2023), within the AI community, focusing on the social side of AI is still a relatively novel requirement, and it is still largely limited to discussions on ethics, explainability and responsible AI. On the importance of relying on a sociotechnical approach, see also – among others – Sartori and Theodorou (2022) and Halford and Southerton (2023).

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