

Standardising Equality in the Algorithmic Society? A Research Agenda

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In 2024, the EU adopted the AI Act, a new set of rules for trustworthy artificial intelligence. This legal instrument carves a large place for standardisation, a regulatory technique that consists in crafting so-called harmonised technical standards, to facilitate legal compliance by industry stakeholders. While EU technical standards have been used in the past for ensuring product safety, for the first time the AI Act relies on standardisation to facilitate compliance with fundamental rights, including the right to non-discrimination and equality. The attempt to translate inherently open-textured rights and ethical principles into operationalizable standards raises critical questions. In particular, how will standardisation practices under the new EU AI Act affect, transform, contest and stabilise notions of equality and non-discrimination in an increasingly algorithmic society? This paper proposes a research agenda to address this question and unpack the black box of AI standardisation.

Keywords: Artificial intelligence, Standardisation, Non-discrimination, Law, Critical Algorithms Studies, STS

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1 Introduction

In May 2024, the European Union (EU) adopted a new legislation to regulate the sale and use of artificial intelligence (AI) systems in the form of Regulation 2024/1689 (hereinafter the EU AI Act) [1]. The EU AI Act aims to ensure a “high level of protection of health, safety and fundamental rights” in the context of AI applications. Its adoption also responds to the EU’s efforts to become “a global standard-setter” in the global digital market [2, 3]. Further, the EU AI Act establishes a set of legal obligations to ensure that AI is “human-centred” and “that AI systems used in the EU are safe, transparent, traceable, non-discriminatory and environmentally friendly” [4]. In addition to prohibiting certain practices such as social scoring, the EU AI Act also regulates AI applications classified as “high-risk systems” under Article 6 and 7 and Annex III. Such high-risk systems must comply with “essential requirements” and conformity assessment before they can be placed on the EU market. To facilitate compliance, the EU legislator has tasked two historical private standardisation bodies, the European Committee for Standardization (CEN) and the European Electrotechnical Committee for Standardization (CENELEC), with co-producing so-called harmonised technical standards for AI with the industry. Compliance with those standards is voluntary but will trigger a presumption of legal conformity. Hence, the industry is strongly incentivised to apply those standards, which are currently being developed by the so-called CEN-CENELEC Joint Technical Committee 21 (JTC21), an international and interdisciplinary group of experts and stakeholders.

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Standardisation is a well-known regulatory practice that has been used historically by the EU legislator to facilitate legal compliance with product safety requirements (e.g. medical devices or toys) and enhance free movement within the internal market. Technical standards regulate aspects such as the safety, quality, performance, interoperability, or environmental impact of given products. The creation of harmonised technical standards to ensure that fundamental rights are effectively guaranteed is, however, not intuitive. Focusing on the right to non-discrimination and equality, we therefore consider it crucial to examine how AI standardisation practices under the new EU AI Act affect, transform, contest and stabilise notions of equality and non-discrimination in the algorithmic society. To do so, we propose a research agenda to explore how the norms negotiated through CEN and CENELEC contribute to (re-)defining social justice and rights, in particular equality and non-discrimination, delineating acceptable social usages of AI technologies and ultimately shaping the governance of the algorithmic society.

2 Standardisation: a historical regulatory practice

EU law demands that goods be traded freely on the internal market. However, those ambitions had stalled at the end of the 1970s, notably because free movement was impeded by national divergences in technical product specifications. The Court of Justice of the EU played an important role in striking down these requirements and in 1979, it rendered a landmark decision requesting “mutual recognition” from member states (*Cassis de Dijon*) [5]. In this context, standardisation progressively became a crucial regulatory practice. Where EU law used to harmonise products by integrating detailed lists of technical specifications, in the 1980s the so-called “New Approach”, and later the “New legislative Framework”, delegated to private standardisation bodies the creation of technical requirements for legal compliance [6]. This public-private form of regulation allowed EU law to remain general, only laying out essential requirements that manufacturers must comply with before placing products on the market. In turn, standardisation bodies are requested to create harmonised technical standards which, once embedded in manufacturing processes, can ensure conformity and legal compliance [7, 8].

Standardisation has thus become a major element of so-called ‘positive’ market integration. In order to avoid barriers to the freedom of movement of goods, the EU legislator has used standardisation to ensure that norms are harmonised across all EU member states, making checks on product safety redundant and therefore diminishing bureaucratic costs and obstacles. This practice is now embedded into Article 40 of the EU AI Act entitled “Harmonised Standards and Standardisation Deliverables”. It requires the creation of harmonised technical standards not only for product safety purposes alone but also, indirectly, to ensure that AI systems comply with fundamental rights.

For example, the European Commission has issued a standardisation request in relation to the essential requirements for high-risk AI systems listed in Section 2 of the AI Act’s third chapter (Risk Management System ; Data and Data Governance ; Technical Documentation ; Record-Keeping ; Transparency and Provision of Information to Deployers ; Human Oversight ; Accuracy, Robustness and Cybersecurity) as well as quality management systems for providers (including post-market monitoring processes) and conformity assessment for AI systems [14].

3 Standards for fundamental rights compliance: problems and research questions

The strange pairing between standardisation and fundamental rights has triggered scholars' scepticism [9, 10, 11]. While it appears straightforward to standardise technical aspects such as the duration of a given material's resistance to fire or the size of small components in toys, it is far less clear how considerations linked to fundamental rights such as equality, non-discrimination, privacy or dignity can be integrated into such technical standards. Hence, opening the black box of AI standardisation is necessary to examine how several dimensions of social justice as ensured by fundamental rights are encoded, translated, framed, negotiated and articulated by technical norms and their makers.

Standardisation raises many deeply normative yet contingent questions, such as what level of risk to fundamental rights shall be deemed acceptable within the European Union? And to what extent can this risk level be determined by standardisation stakeholders? For example, if an AI system presents discriminatory biases against a minority group but at the same time a high level of accuracy for majority groups, what must be the acceptable residual level of risks of discrimination under Article 9 of the AI Act on risk management? While technical standards aim at increasing legal certainty and facilitating compliance for the industry, such questions must be examined through a contextual assessment that cannot be settled in advance and in the abstract. Indeed, the answer might vary depending on whether we speak of an AI system used in medical diagnosis or a CV-screening algorithm. (How) can standards effectively guide industry providers to answer that question across different fields and applications? Despite these seemingly intractable issues, the JTC21 of the CEN-CENELEC is currently working on creating standards in relation to "concepts, measures and requirements for managing bias in AI systems" (JT021036), the "treatment of unwanted bias in classification and regression machine learning tasks" and "AI risk management" (JT021024).

Scholars from different disciplines have also criticised the use of AI standardisation for entrusting private manufacturers and standardisation bodies with significant decision-making power, for a dearth of democratic participation linked to the under-representation of civil society concerns, a lack of public oversight, transparency and accountability, and for falling short of the rule of law [7, 8, 9, 10, 11]. For instance, Yeung and Shaw describe in a recent report "how corporate and commercial self-interest informs positions taken by experts during these discussions" and deplore "the practical realities that exclude under-funded civil society organisations from sustained and effective participation" [15, p. 7].

4 A threefold research agenda

Our research agenda identifies three core avenues for exploring the effects of standardisation practices on the fundamental rights to equality and non-discrimination in an increasingly algorithmic society. We aim to address this question from an interdisciplinary standpoint, defining equality and social justice from perspectives such as law, social theory, ethics, moral philosophy, STS and critical algorithms studies.

4.1 Quantifying justice? Onto-epistemic tensions in standardisation processes

A first research avenue aims to assess how standardisation processes attempt to reduce inherently dialectic concepts such as fundamental rights and related justice principles to quantifiable and measurable notions. Article 52(1) of the

EU Charter of Fundamental Rights makes it clear that arbitrating rights and their limitations should respect the “essence of those rights”. Fundamental rights and the principles they contain are not arithmomorphic [12]. Instead, their meaning arises from interpretive engagement and contestation. Questions arise such as how does standardisation transform law and policy by introducing demands for quantification, formalisation, measurability and actionability? At a conceptual level, it is therefore necessary to explore how standardisation might lead to an onto-epistemic reduction of fundamental rights.

4.2 Encoding justice in an algorithmic society

A second research avenue consists in assessing how different stakeholders and disciplinary communities involved in standardisation processes foster semantic convergence to create the conditions for an interdisciplinary conversation. Bringing different disciplines together is a necessary but complex requirement for bridging discourses on technical standardisation and fundamental rights. Hence, crucial questions are: which stakeholders are involved in the standardisation arena? How do they articulate social justice and related topics such as algorithmic bias, fairness, discrimination and fundamental rights to equality and non-discrimination in relation to AI? What understanding of equality and discrimination do such processes enforce among industry stakeholders? How do they translate into development and commercialisation practices? This exploration should allow tracking heterogeneity, negotiation, confrontation and convergence in those interdisciplinary spaces and understanding their implications for AI justice and in particular equality and non-discrimination. Ultimately, this research axis interrogates the consequences of standardisation addressing AI, not as a set of social relations, but through the lens of product safety.

4.3 The effect of standardisation processes on normalising algorithmic governance

Standards also order and re-order the world in discrete, technical and bureaucratic ways [13]. In a third research avenue, we thus aim to understand how current standardisation work normalises, stabilises and institutionalises algorithmic governance practices through technical norm-setting. We aim to interrogate “stories of the inevitability of technological development and the neutrality of quantification” and to “examin[e] claims about standardized representations and authority” to “revea[l] the political and ethical problems at the heart of these struggles” [13, p. 13].

We suggest exploring how the silent, bureaucratic and technical work of standard-setting shapes and orders the digital society through category and classification work [13]. This entails questions such as: How do notions of technical feasibility and foreseeable use bolstered by the industry feed into regulatory classifications of algorithmic governance practices as normal or abnormal (invoking for instance the EU AI Act’s provisions on “foreseeable risks of misuse”)? What power arrangements, and asymmetries do these standardisation practices stabilise and reproduce? How are EU standardisation processes translated into national and more local practices in the context of rapidly emerging national AI strategies? And ultimately, how does AI standardisation dislodge or crystallise existing social inequalities through normalising, stabilising and institutionalising given algorithmic governance practices?

5 Conclusion

The recent entry into force of the EU AI Act invites us to explore how fundamental rights are mediated through technical standard-setting processes. To unravel the black box of AI standardisation, this paper has delineated a threefold research agenda exploring the effects of standardisation practices on equality and non-discrimination in the algorithmic society. We suggested three research avenues. First, mapping onto-epistemic tensions that arise in standardisation processes is key to understanding the morphing of concepts such as the fundamental right to equality. This means exploring how standardisation transforms rights by introducing demands for quantification, actionability and formalisation. A second research avenue investigates how actors involved in standardisation processes – and the epistemological tensions inherent in such encounters – are central to understanding how frames are negotiated and representations converge. Third, our research agenda proposed to articulate links between standardisation and the entrenchment of algorithmic governance practices and to critically examine their implications for equality and justice.

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