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Language, Law and Rights: Balancing AI-Driven Technology and Equity

Introduction

The rise of artificial intelligence (AI) presents a profound challenge to the equitable application of law and the protection of language rights. The technological landscape is undergoing game-changing shifts at an incredible pace. What seems new today will be either old or obsolete in one or two years. This dynamic landscape therefore demands constant monitoring and critical investigation.

This Special Issue, *Language, Law and Rights: Balancing AI-Driven Technology and Equity*, examines the intricate relationship between these areas, exploring how AI-driven language technologies can both empower and marginalize, particularly for speakers of minority and minoritised languages. This collection of articles stems from discussions initiated at the "Voices on Language Rights: Public Perceptions and Attitudes" workshop, which took place at the University of Geneva, February 12-13, 2024[1]. This event, organised within the Language in the Human-Machine Era (LITHME) project — funded by the European Cooperation in Science and Technology (COST) — brought together experts from different European countries to explore the impact of new technologies on language rights. The workshop aimed to raise awareness about the potential effects of emerging technologies on both major and minority languages, as well as their speakers, in diverse contexts. Understanding these impacts is essential as we continue to explore the complexities associated with the use of new and emerging technologies on a global scale.

This Special Issue expands upon some of the foundational work presented in the chapter on "Language Rights" (Soltan et al., in press) within the forthcoming LITHME edited volume, Language in the Human-Machine Era (MIT Press). While the book provides a broad overview of language in the human-machine era, this special issue scrutinizes specific legal and ethical ramifications of these technological advancements. Central to our inquiry is the question: does AI serve humanity, or does it inadvertently exacerbate existing inequalities? The Special Issue examines the multifaceted impact of AI on language, law, language rights, human rights, and linguistic/social justice, with particular focus on the experiences of those who speak minority or minoritised languages. It aims to provide a critical assessment of these developments from various perspectives, both in terms of their benefits and advantages, as well as their weaknesses, challenges, and points for development.

Numerous indicators suggest that the reflections presented in this volume may be relevant not only to academia but also to society at large, especially during a time when human interaction with technology poses significant challenges (Zanatto, Bifani,

[1] https://lithme.eu/2024/04/17/voices-on-language-rights-public-perceptions-and-attitudes/

& Noyes, 2023). We are currently navigating a period marked by substantial change and uncertainty, driven by new technologies whose implications remain largely ambiguous. The technological landscape is experiencing transformative shifts that extend beyond commonly used digital applications to encompass those propelled by artificial intelligence. AI is increasingly becoming integrated into all facets of human activity. We find ourselves in an "AI race", echoing the space race of the 20th century. As a result, we are witnessing profound changes in how we interact with, collaborate via, and co-create using this technology. At its core, AI functions as a tool for processing and generating human-like language, and its influence as well as significance are ultimately shaped by the design and deployment choices made by humans.

When considerations of equity and ethics are neglected in the development of AI, the technology can exacerbate existing social inequalities and further marginalise vulnerable communities. Notably, large language models (LLMs) may perpetuate those inequalities due to biases present in their training data and insufficient representation of diverse languages (see De Meulder, 2021; Krausneker & Schügerl, 2022; Quandt et al., 2022, for a discussion on the ethical and responsible development of such technologies, particularly regarding sign language avatars, and also refer to De Meulder 2025, Birnie 2025, and Skorupa-Wulczyńska & Zannina 2025 in this Special Issue). Moreover, recent technological advancements may deepen inequalities among vulnerable communities, potentially infringing on their rights. Over the past decade, humanitarian actors and affected communities have increasingly incorporated advancements in information and communication technologies (ICTs) and the resulting digital data into their crisis responses. However, these operational and technological advancements are developing without a universally accepted rights-based approach (RBA) for conducting humanitarian information activities in the contemporary context (Greenwood et al., 2017).

LLMs have become the focus of most discussions, as this technology enables the generation of content that previously demanded significant human effort. Additionally, LLMs operationalise language in a manner that empowers non-expert users to access, interact with, and control various other types of pervasive technologies, such as chatbots, avatars, robots, and Internet of Things (IoT) devices. However, there is a critical caveat: LLMs inherit biases from the data on which they are trained, perpetuating unequal representation across languages. These biases stem from both the quality of the data and representation within the training data, as well as the specific languages used in gathering the data.

Against this backdrop, not all languages are treated equally, despite the fact that different international organisations have developed instruments to promote the implementation of language rights principles. While international law provides a foundation for language rights, these protections are rarely at the forefront. Instead, they are typically included within broader standards for minority rights. A clear example is the case of Sign languages in the United Nations' Convention on the Rights of Persons with Disabilities (UNCRPD 2006), where linguistic rights are acknowledged but positioned within a wider disability-rights agenda rather than recognised as full linguistic rights. Foundational documents like the Declaration on the Rights of Persons Belonging to National or Ethnic, Religious and Linguistic Minorities (UNGA, 1992), and the Council of Europe's Framework Convention for the Protection of National Minorities (Council of Europe, 1995) establish the right of minorities to use their own language, but

treat it as one component of cultural identity rather than a central, standalone right. The result is a set of principles that are often difficult to enforce directly for linguistic justice alone. While more recent, follow-on tools, such as the UN Practical Guide of Implementation of Language Rights for Linguistic Minorities (2017), or the Council of Europe Guide on Facilitating the implementation of the European Charter for Regional or Minority Languages through artificial intelligence (Council of Europe, 1992; Gerken, 2022, see also Birnie 2025 in this Special Issue) aim to translate these principles into practice, the fundamental challenge remains. Nascent regulations like the European Union's AI Act (European Parliament and Council 2024, see also Skorupa-Wulczyńska 2025 in this Special Issue) are designed to govern technology, but it remains an open question whether they can effectively address the deep-seated linguistic inequalities that older human rights frameworks have struggled to resolve. This is further complicated by the digital divide. As of 2024 (International Telecommunication Union), a third of the global population remains offline, especially in low-income regions and rural areas. The fact is that a considerable number of minority and minoritised languages are at a disadvantage in the AI era. Consequently, many language communities, with their rich variations, do not have equal access to the technological advancements that define our era. This disparity raises significant concerns about equitable participation and opportunities. LLMs exemplify how information technology can influence the very essence of our being, shaping language, culture, identity, and our collective sense of belonging. An increased reliance on technology may also create social pressures to keep pace, which could marginalise individuals lacking access or the necessary skills. This situation highlights the need for equitable access to information and services, ensuring that all communities can contribute to and thrive in society. Special attention must be given to the rights and wellbeing of those in vulnerable situations. In a nutshell, we must consider how technological developments impact languages, cultures, identities, and a sense of belonging within communities.

Through investigating the complex interconnections between language, law, and rights in the age of AI-driven technologies, we hope to contribute to four ongoing discussions. First, we hope to facilitate an exploration of the intricacies of human-machine collaboration by examining how humans and AI co-create meaning, the impacts of AI on human agency, and the ethical considerations surrounding human-machine interaction. Second, the Special Issue seeks to enhance our understanding of AI's implications for equity and justice, particularly regarding access to information and services, the digital divide, and the rights of marginalised language communities, along with the specific challenges faced by vulnerable populations. Third, it contributes to contemporary debates on language policy and planning. Lastly, the Special Issue represents investigations of the broader societal impacts of language technology, including AI's role in shaping cultural identity, its use in public services, and the ethical implications of AI-driven communication.

The six articles carefully selected for this Special Issue of *Language Law / Linguagem e Direito* bring together a diversity of reflections on the central theme, "Balancing AI-Driven Technology and Equity", in dialogue with the fields of law and language. The articles address the theme in various contexts and social practices, ranging from institutional legal frameworks to protect smaller state, regional, minority, and indigenous languages to the issue of mistranslation, the impact of technology on deaf communities'

rights, learning minority languages, perpetuation of gender stereotypes, and intellectual property. The Special Issue leaves plenty of room for discussion around AI technology and its impact on language, law, and rights, demonstrating, for example, the challenges that societies face nowadays to make the most of AI technologies, while preserving the rights of their speakers.

The issue opens with an article by Inge Birnie entitled "No language left behind? Towards an integrated framework for linguistic rights, human rights and technology regulation". The article highlights the fact that access to technology is not universal, examining the various institutional legal frameworks that regulate AI at multiple levels. It particularly emphasises the shortcomings of these frameworks in addressing the needs of minority and minoritised languages, which are often at a disadvantage compared to dominant languages like English regarding access to online spaces. This situation contributes to digital imperialism and colonialism, adversely affecting smaller state, regional, minority, and indigenous languages that typically have fewer speakers. Birnie additionally highlights the challenges faced by languages not traditionally classified as 'at risk' (yet, non-English), while discussing the implications of excluding most languages from digital and online spaces, as well as from the regulatory frameworks designed to support and protect them. The article also offers potential avenues for reflection on those issues.

The article "Handling multilingualism by the EU institutions at the time of AI-based language technologies", by Aneta Skorupa-Wulczynska and Anna Zannina, explores multilingualism as a fundamental principle of language policy within the EU and examines the various challenges brought about by translation as well as technological advances. With the advent of AI and innovative tools such as translation memory systems, neural machine translation, and speech-to-text technologies, new opportunities have emerged alongside significant challenges and risks. The authors investigate whether these technologies improve citizens' access to EU institutions and subsequently enhance their engagement in democratic processes by reviewing a variety of tools used by EU institutions. They highlight the risks posed by AI language technologies, while recognising their potential to promote equality in the context of the EU's growing multilingualism. The article suggests mitigation measures, emphasising that such technologies should be operated by humans who adhere to ethical, moral, and legal standards.

Continuing the theme of minority languages, Sergi Alvarez-Vidal and Maarit Koponen, in "Can machine translation really help minority languages in Europe? An analysis with value scenarios" reflect on the advances of machine translation (MT) across various sectors of society, thanks to the advent of neural MT (NMT) and more recently, LLMs. However, the authors argue that many MT models remain English-centric, delivering high-quality results predominantly for languages with abundant data, while for minority languages, the issue is often perceived as one of data scarcity. The authors invite us to look beyond the technical narrative of "data scarcity" to the deeper systemic realities that shape language technologies. Drawing on value scenarios for Catalan and Karelian – two languages with contrasting sociolinguistic trajectories – they explore how the deployment of MT reinforce or disrupt existing power relations between languages. The article delineates the primary challenges and possible drawbacks associated with MT for minority languages, and proposes general guidelines to inform future research and applications. This work foregrounds the need for design approaches that integrate

sociolinguistic diversity, ethical reflection, and participatory input from affected communities. It exemplifies the broader aim of this volume: to reframe AI not as a tool for efficiency, but as a field of responsibility.

In the article "When machine-generated mistranslation on social media becomes misinformation: Risks to users, corporate responsibility, and legal implications", Khetam Al Sharou focuses on the impact of machine translation (MT) on misinformation, by drawing on real-life examples of how MT can distort content and disproportionately affect marginalised language communities that rely on it for information. The unchecked proliferation of MT on social media platforms presents a critical threat, where algorithmic errors can rapidly evolve into harmful misinformation. Al Sharou demonstrates that as users increasingly rely on MT to access information, they often lack the source-language knowledge to detect subtle but significant inaccuracies, leading to distorted meanings. The article emphasises the ethical responsibility of tech companies to address these risks and explores how regulatory frameworks like the EU's Digital Services Act and the UK Online Safety Act can protect language rights online. Furthermore, the article advocates for increased accountability among service providers and the responsible use of MT services to ensure that accurate information is accessible. This argument reframes the issue as a matter of language rights, the right to access accurate information without being misled by flawed AI.

A discussion of the complex relationship between AI language technologies, sign language interpreting, and linguistic access is the objective of "Deaf in AI: AI language technologies and the erosion of linguistic rights", by Maartje De Meulder. She emphasises how these advancements pose a risk to the hard-won linguistic rights of deaf communities. While AI tools promise innovation and resilience, they also perpetuate biases, reinforce technoableism, and exacerbate inequalities due to systemic and design flaws. By drawing on insights from Deaf Studies, Sign Language Interpreting Studies, and crip technoscience, the author critiques the perception of AI as a replacement for interpreters, underscoring its broader ramifications for access frameworks. The article advocates for deaf-led approaches to ensure that AI promotes equitable, ethical, and trustworthy accessibility practices that protect the linguistic and social rights of deaf communities. The author concludes with the powerful message that it is crucial to engage critically with technological changes as they emerge, in order to cultivate AI systems that are not only innovative but also equitable, inclusive, and trustworthy. Such systems should enhance linguistic practices rather than subordinate them to technological demands.

Stereotypes and terminology go hand-in-hand with language, and how the techno-cultural world is socially shaped. LLMs risk amplifying societal biases, particularly those rooted in gender stereotypes, posing a significant threat to equity in our automated world. Dimitra Anastasiou, Christian Moll, Marie Gallais, Laurence Johannsen, and Carole Blond-Hanten's article entitled "The complexity of gender and language: Digitization of a physical board game deconstructing gender stereotypes", a blended digital-physical tool, as a human-centered intervention to counteract this trend. Rooted in the social sciences, the GG is designed to deconstruct these stereotypes by engaging the public with scientific research on gender equality. A core component of the game directly confronts gendered language, serving as a practical tool for promoting linguistic rights. To test the prevalence of these biases within AI itself, the authors conducted an exploratory study using generative AI. The paper discusses these findings, revealing how current

LLMs navigate complex issues of gender and language. By contrasting AI-generated content with the human-led discussions that the game facilitates, the study underscores the importance of proactive educational tools. This positions the GG as a necessary intervention designed to address the root cause of the biases that AI systems inherit. Ultimately, the paper argues for the critical role of such human-centered tools in fostering a more equitable foundation for our digital future.

The rise of generative AI has created a fundamental conflict at the heart of intellectual property law, challenging our very definitions of authorship and creation. This legal dilemma operates on two fronts: the contentious use of copyrighted human expression for model training, and the unresolved question of who owns the rights to AI-generated content. In her article, "Professor: Who holds the copyright for AI-assisted and AI-generated contents?", Katerina Zdravkova confronts these issues, providing a critical legal analysis of this new technological landscape. Through a detailed examination of nine case studies, she investigates the crucial distinction between AI-assisted and fully AI-generated works. Her findings reveal an emerging legal consensus where human creativity remains the cornerstone of copyright. The author argues that works created with AI as a tool can be granted protection, as the human author's intellectual input is central. In contrast, she demonstrates that fully autonomous works generated without direct human creativity cannot currently be granted the same intellectual property rights. Zdravkova's analysis provides an essential framework for navigating the rights of human creators in a world increasingly populated by automated content.

The comprehensive examination of the articles prompted us to further reflect on the white paper that emerged as a tangible outcome of the previously mentioned workshop. At the conclusion of the workshop, participants considered various principles relevant to different stakeholders, as a collective reflection on the ethical and practical principles needed to guide AI and language governance. Participants agreed that real progress depends on shared responsibility among technology developers, researchers, policy makers, and affected communities.

For technology developers, this means going beyond regulatory compliance to design systems that actively protect human and linguistic rights. Profitability and public value can coexist when innovation begins with an understanding of who is affected, how access is distributed, and what new inequalities might emerge. Development should be grounded in genuine human needs, with continuous input from the communities that the technology seeks to serve. This involves identifying affected communities from the outset, understanding their linguistic realities, assessing inequalities of access, and anticipating new disparities that emerging technologies might introduce. To that end, inclusive design requires attention to embedded biases, related to gender, age, ethnicity, political viewpoint, and other identity markers, and the proactive engagement of communities throughout the design and evaluation process. This participatory approach must be supported by education and mutual learning: developers should not only teach users how to engage with new technologies but also learn continuously from their evolving experiences and expectations.

For their part, researchers have several potential avenues to explore, regarding equity and equality. Key considerations include issues of positionality and reflexivity, as well as the importance of self-knowledge in understanding the actual needs of individuals. Emphasising these aspects fosters epistemic humility (Medina, 2013, p. 43, see also

Peled, 2018) – recognising what we do not know and beginning the process of discovery – and encourages the adoption of a critical lens that strengthens our commitment to diversity, not only in languages but also in language varieties. Additionally, cultivating meta-linguistic awareness is vital, allowing for higher-order reflection and helping to prevent modality chauvinism. This means avoiding the treatment of languages merely as systems of rules and protocols without a true understanding of their functioning. Research topics could also encompass interactivity and intercultural communication. Meaningful progress also depends on interdisciplinary collaboration that brings together researchers, developers, and communities. Such dialogue not only strengthens our collective capacity to face emerging challenges but also raises a deeper question of legitimacy – who authorises and benefits from research on language and technology. Upholding the principle of *"nothing about us, without us"* ensures that ethical reflection and moral responsibility take precedence over procedural compliance.

Policy makers, in turn, play a central role in creating conditions for responsible innovation: fostering transparency, supporting linguistic diversity, embedding fairness audits in regulation, and ensuring the financial sustainability of tools developed for under-resourced languages. Additionally, establishing enforcement mechanisms is vital to hold developers and technological businesses, and even owners, accountable for upholding standards of equity and linguistic justice. It is crucial for policymakers to sustain an ongoing dialogue with technology developers, communities, and researchers. Embedding this co-creation approach within the legal framework that encompasses human and language rights is the foundation for the commitment to these principles. Finally, it is essential to remember that technology is not always the best, or only, solution. Every product must be measured against its human alternative: does it genuinely enhance linguistic rights, equity, and agency, or does it simply automate what should remain a human act of connection? Communities have a defining role in shaping how language technologies evolve. Their participation is key not only in expressing needs and aspirations but also in ensuring these perspectives are reflected – both technically and legally – throughout the development cycle, from data collection to deployment. By engaging in the assessment of existing tools and the analysis of policy frameworks, communities can help reveal where access remains uneven and how language technologies might better serve equity and inclusion.

We hope this volume encourages further inquiry into the themes explored here and into other domains where AI increasingly shapes linguistic rights and practices. Continued reflection and collaborative research can help surface new challenges, deepen understanding, and contribute fresh perspectives to the broader conversation on how emerging technologies reshape language, equity, and society.

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