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Opinion

Global AI Cultures

How a cultural focus can empower generative artificial intelligence.

ALTHOUGH GENERATIVE ARTIFICIAL intelligence (AI) is a global endeavor, it is still most often discussed in the singular rather than in the plural form, with little consideration of the diversity of the cultural, linguistic, and national environments in which it is embedded and framed. To better understand the deep implications of this emerging technology, generative AI needs to be situated more deliberately and rigorously in wider and more diverse cultural geographies. While communities of AI researchers and practitioners have taken important steps in this direction,² we argue that a truly global approach to AI can only emerge if we emphasize the centrality of culture, understood not just as intellectual activities but as all the ideas, customs, and social behaviors that make up a particular way of life, whether of a people, a period, a group or humanity in general.⁹

In his classic discussion of the term, Raymond Williams points out that any definition of culture should be “in the plural: the specific and variable cultures of different nations and periods, but also the specific and variable cultures of social and economic groups within a nation.”⁹ A focus on AI cultures, therefore, can help us identify and counteract the limits of universalism, for which generative AI is perceived and represented as having no cultural or geographical coordinates, as well as the limits of cultural essentialism, for which specific cultural approaches are framed within stereotypical representations. Drawing from the growing body of recent literature



that addresses questions of cultural representation in generative AI models,^{1,3} a perspective that is more sensitive to the cultural contexts within which AI technologies are developed, regulated, circulated, and used will enhance not only fairness but also efficiency for the AI enterprise. As we will

show, in fact, more efforts to consider the cultural dimension can empower innovative contributions and support the creation of technology with the potential to reach more diverse and wider communities while also preserving the true breadth of human experience and understanding.

Every interaction with AI is situated within a specific cultural and social context.

Situating AI in Global and Local Cultures

Every interaction with AI is situated within a specific cultural and social context, and the perceptions and imaginaries through which practitioners and people approach generative AI vary sharply across cultures and geographical areas. Notions such as creativity, trust, and labor, which generative AI calls us to reconsider, differ in diverse national and cultural con-



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texts, with deep implications for how users accept and engage with these technologies.¹⁰ Acknowledging the situatedness of AI implies considering a variety of positions and relationships, and how their fluidity at global, transnational, and local levels inform impact, implications, uses, and misuses of generative AI.

Public perceptions of generative AI are also plural, yet such perceptions are still often embedded in a Western-centric technical culture where specific perspectives on computing and AI are universalized. For instance, visual representations of AI often rely on cultural tropes originated in the Northern hemisphere, such as AI as a blue and white entity, personified by androgynous figures and allegorized according to culturally specific patterns of creation.⁶ This approach excludes more diverse visions and approaches to AI, curbing the opportunity to foster alternative interpretations of the technology, and therefore hindering potential innovative appropriations and practices at both a global and a local level. Conversely, cultural imaginaries from the Global South are often the subject of "othering." For instance, Japanese culture is often represented through stereotypes that stress the affective relationships between humans and social robots or virtual avatars.⁸ These emerging forms of interaction, however, are not specific to Japan, but are intrinsic of social engagements with AI across borders.

With regard to language, there is a sharp Anglocentric bias in most large language models (LLMs). This bias exists because these models are trained on vast amounts of data from the Internet, which predominantly includes content in English and from Anglo-American sources. As a result, they tend to perform better on English-language tasks and may have limitations when it comes to understanding and generating content in other languages or reflecting the cultural diversity of non-English-speaking regions.⁴

The Cultural Dimension in Regulation and Policymaking

The rapid rise of generative AI has spanned a global race aimed not just at developing the technology and finding applications but also at shaping

the new regulatory framework that will orient AI's developments and uses. Although the cultural dimension may appear detached from legislative agency, more sensitivity to its role will help address some key challenges in this context, too, particularly those related to ethical deployment.

AI policy responses are still predominantly country-based or area-based, even if the challenges, opportunities, and risks are global. This contributes to creating sharp disparities in terms of access to AI technologies, due to the uneven distribution of economic and political power across the globe and the higher impact of decisions taken in more affluent parts of the world.³ One important aspect in this regard is that policy regulations not only impact uses and applications of AI but also the very functioning of the technology. For instance, regulations in areas such as copyright can restrict access to the data available to train generative AI, informing the performance of generative AI, as the latter also depends on the quantity and quality of data used. Because of sharp cultural differences in the ways issues such as privacy and copyright are publicly discussed and thematized in different parts of the world,¹⁰ restrictions to access specific typologies of data will be applied in certain countries but not in others; consequently, the performance of these systems will differ across the different regulatory areas, and copyright regimes that are less tightly regulated (or where more open access material is available) will effectively present an opportunity for training data.

Furthermore, vast areas in the

Visual representations of AI often rely on cultural tropes originated in the Northern hemisphere.

Global South find themselves on the “receiving end” of innovation and policy, with little capacity to shape, influence, or contest policies that have global reach.⁵ These policies are far more likely to be made in tech-advanced regions such as the U.S., Europe, and China—meaning that many Global South regions might be effectively forced to operate within rules that are set elsewhere. Conversely, novel approaches that emerge in the Global South may be disregarded, with the risk of hindering innovation. Many countries now have the potential to develop specific approaches and strategies to regulate AI and contain potential risks. Researchers, for instance, have highlighted the benefits of developing policies for regulating AI applications in areas such as agriculture and health in Africa that move from a contextualization of fairness criteria in the specific local cultural contexts.¹ Countries such as Mauritius and Rwanda have developed AI strategies, and other countries are continuing to develop theirs.¹ However, challenges remain: for instance, big tech companies in the past have refused to comply with regulatory requests from African countries.^{5,7}

The cultural situatedness of AI can be leveraged to orient and improve regulatory efforts. One of the key problems that regulators are facing is that the applications and implications of generative AI are manifold. We have only started to understand how AI can be used by different professional groups, communities, and individuals. Even within regional and national communities, the same technology is employed in distinctive ways by different individuals, with social, cultural, economic, and political reverberations that are extremely difficult to foresee. Enhancing the plurality of global actors that contribute to discussions and practical approaches to AI regulations, therefore, can add a much-needed breadth to regulatory efforts. If more countries and regions can contribute to shaping local and global policies, policy approaches and tools will emerge that tackle a wider spectrum of present and future challenges related to AI.

There is a need for recalibrating the relations between the Global North

The cultural situatedness of AI can be leveraged to orient and improve regulatory efforts.

and the Global South that fosters joint and fair approaches to contemporary challenges around AI that are intrinsically global in nature, for developing productive South-South relationships, with the aim of contributing to the mosaic of regulatory policies across the world. On the other hand, global multistakeholder protocols can be developed—one where all parties contribute jointly to AI policymaking, in light of the need to include multiple voices in policy development. Existing efforts in other areas, such as the Internet Governance Forum, and ongoing initiatives such as the Global Partnership on Artificial Intelligence (GPAI), can help identify fruitful pathways as well as potential obstacles that this agenda may entail.

Data As Culture

The performance of a generative AI system is a function of the technology used and the quantity and quality of the data available. Although the training of generative AI may appear removed from its geography, and even if the rise of synthetic data has become increasingly attractive to companies, the data that feed into generative AI is mainly produced by humans and, as such, is embedded in specific cultural and social contexts. The quantity and quality of data depend on several factors including which language is spoken, how the data is generated, collected, processed, classified, and stored, who owns the data, which types of data are publicly available and which are not, as well as the sheer volume of data.

A key problem in this regard is that the human data available to train generative AI are overwhelmingly produced by a very homogeneous set of people, which do not represent the

global population. There is an urgent need to work towards diversifying datasets of all kinds and in fact broaden the notion of what counts as training data to ensure wider representation at a global level. Access to data can be controlled, and this creates space and opportunities for intervening. But control of available data—and often ownership of data repositories—is largely concentrated in companies that are based in specific parts of the world, mostly located in the Global North. The need for diversifying data, moreover, has to account for the rights of individuals and groups, such as many indigenous communities in Latin America or the Pacific who might not want their data to be used to train the models of the generative AI industry. AI regimes also must ensure fair work conditions to people in different areas of the globe who provide the workforce needed to fuel generative AI.

Likewise, the model of the human that is activated to shape the design of social interfaces and interactive AI systems remains restrictive in terms of race, gender, and class, privileging a small portion of the global population. Technologies such as LLMs are trained and provide outputs through language, and therefore their implementation in different languages shapes their performance and functioning. LLMs are mainly powered by data produced in languages that reflect market activities and global power structures, such as English or, more recently, Chinese, while robust datasets in other languages are often lacking.

Concerted efforts are required to diversify datasets in ways that both reflect and enhance global representation. To achieve this, the relationship between data and culture needs to be examined, with the goal to develop approaches to data ethics that are more sensitive to the global and cross-cultural dimensions of generative AI. Existing initiatives to collect data from low-resource languages and regions, such as Karya (<https://karya.in>), provide a powerful reference point to continue and extend these endeavors. Choices and approaches to the selection of data that will train AI models not only need to consider the problem of bias but should also be sensitive to

Table. Summary

Situating AI in global and local cultures	AI needs to be contextualized in specific cultural contexts
	Western-centric technical culture tends to be universalized, while other perspectives are the subject of "othering" and stereotyping
	There is a sharp Anglocentric bias in generative AI
The cultural dimensions in regulations and policymaking	AI is a global phenomenon, yet AI policy responses are limited to the level of single countries or areas
	Many countries or communities have little capacity to shape, influence, or contest policies that have global reach
	Inequality of power affects the weight of Global South and Global North efforts
Data as culture	Data used to train AI models is mainly produced by humans, and, as such, is embedded in specific cultural and social contexts
	Data used to train AI models is produced by an overwhelmingly homogeneous population
	Data used to train large language models is restrictive in terms of language, which affects linguistic and therefore cultural representation

the fact that enhancing the diversity of data and the protection of data rights will bring about stronger and more resilient technologies.

Toward a Cross-Cultural Approach

How can we leverage the notion of culture to envision and collectively build approaches that are more sensitive to the global dimensions of generative AI? Generative AI should not be thought of as universal, but instead imagined and implemented as diverse and culturally inclusive. Such an approach situates AI within a diverse and complex world, welcoming developments that are accessible to all but reflect the specificities that are brought about by the varied contexts where AI is implemented and used.

Much can be done by researchers and practitioners to contribute to this agenda. For the academic community, one of the responses to the problems outlined in this Opinion column is to work toward improving the global reach of scientific fora and institutions, including journals, international associations, and research projects, which are involved in studies and debates about generative AI. Enhancing scientific relationships and collaborations at a truly global level is in fact a key requisite for bringing the challenges discussed here to the forefront of public discourse. Practitioners such as designers and computer scientists can also contribute to pushing this agenda by giving greater priority to the problem of global representativity. Contributions that help explore the cultural

and social geography of data and systems and their implications will help attune practice with approaches that are sensitive to the global dimensions of AI. Those who engage in the back-end construction of AI tools should be exposed to the implications of narrowly conceived datasets and design approaches.

Crucially, these efforts are needed not only to enhance inclusion and fairness, but also because they will help develop sustainable and resilient technologies that can adapt and respond to a wider range of use cases and use contexts. Issues of inclusion, equity, and fairness are in fact not distinct from but intertwined with questions of efficiency and functionality. Existing disparities and inequalities risk marginalizing approaches from vast areas

Those who engage in the back-end construction of AI tools should be exposed to the implications of narrowly conceived datasets and design approaches.

of the world, curbing the potential to innovate while also jeopardizing these technologies' capacity to reach and be meaningfully used by a diverse world population. **C**

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