AI and the Global North/South Divide

By Antonio Ballesteros-Figueroa

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AI can bring benefits globally, but it is energy intensive and, combined with existing inequalities in infrastructure, could reinforce power imbalances. Here, researcher in people environment studies and behavioural modelling, Antonio Ballesteros-Figueroa, reflects on this and on the need for increased participation of local communities in how AI is produced.

For most of us, checking the weather app on our phones is part of our daily routine. We want to reduce the uncertainty in our lives as much as possible. Similarly, farmers around the world depend on long-term meteorological forecasts to reduce the uncertainty in highly variable systems. AI systems enable this by allowing the integration of algorithmic models that utilise big data processed by supercomputers.

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Forecasting is not limited to the weather. For instance, in a healthcare setting, the COVID-19 pandemic saw UK and US researchers use machine learning algorithms in attempts to forecast if a person might develop severe illness, based on the first day's symptoms.[1,2] All this forecasting activity comes with a cost that is both economic and environmental. It requires an energy-intensive infrastructure of supercomputers and server farms to process the huge amounts of data involved. The need for this infrastructure not only has a physical impact on the planet – it can also have profound social and political consequences.

represent a new way in which rich countries can impose policies without developing nations having the capacity to challenge them.[3] Existing infrastructural inequalities, together with a lack of participation from communities in the Global South, make it almost impossible to replicate these tools outside of rich nations.

Existing infrastructural inequalities might also make it unrealistic to recreate AI projects from scratch. For instance, one interviewee said: *'The supercomputer capacity that we are using every month is more than most African countries possess. Most African countries don't possess any access to a supercomputer technique. I know of five European countries, at the country-level, that would not be able to replicate ViEWS because they don't have the infrastructure… That in itself is a problem. You need to run a project like this in a country like this [Sweden] because otherwise there is no money to do it.'*

The people whose lives might be affected by these forecasts should have some agency in the process of developing these systems.

Forecasting climate-related conflict

The Uppsala University Department of Peace and Conflict Research (PCR) in Sweden uses a Violence Early Warning System (ViEWS) with the aim of forecasting climate-related conflicts.[3] In particular, the goal is to predict how agricultural changes linked to droughts could affect human displacement within the next 100 years.[3] All of these AI forecasting tools expect to influence decision making, not only of the affected communities, but of every stakeholder.

Yet while AI tools could help to improve policy decision making, they can also reinforce existing unequal power relations between the Global North and the Global South. Interviews with ViEWS' members reveal that these tools

While the ViEWS system is produced in Sweden, the drought forecasts are focused on East Asia and Africa. What then, does this say about the technical capacity of the affected farmers? The issue isn't only one of technical restrictions. It is also about understanding that *'science as development, plan, experiment, pedagogy determines the life chances of a variety of people.'*[4]

Challenging and developing

The people whose lives might be affected by these forecasts should have some agency in the process of developing these systems. The reality, however, is that AI projects often ignore the fact that, as well as the scientists, communities need to have the possibility of challenging both the forecasting methods and the results.

Another issue that makes it difficult for local communities to participate is ignorance around meta processes. All programming languages operate in a balance of defined rules and individuality. A standard approach to coding would make for a much more transparent and explainable process, but the idea of coding 'hygiene' tends to be depicted as something that goes against the nature of programming. When asked about standardisation in this area, another ViEWS member dismissed it as *'It's like asking a poet or a writer to standardise their writing – it will never happen.'*

What is important, the argument goes, is that individuals are allowed to solve everyday programming problems. Yet if individualism is preferred over standardisation, this increases the need for contextualising the rationale behind every decision that is taken. However, mundane, everyday decisions are not usually recorded. Therefore, understanding how algorithms are produced and the thinking behind them is even more difficult.

It's clear that tools produced using machine learning or AI could increase the possibility of dealing with big data. Yet a combination of existing infrastructural inequalities and the nature of programming instead reinforces existing colonial and patronising attitudes between the Global North and South. While infrastructural issues might not be solvable in the short term, the increased participation of local communities in how AI is produced could help to diminish these attitudes.

Author bio

Antonio Ballesteros Figuera is a native of Mexico where he studied a BA in Political Science from Universidad de las Américas Puebla. He holds a Masters by Research and a PhD in Science and Technology Studies from the University of Edinburgh. His dissertation looked into the processes through which the environment is quantified and the ethical, justice, governance and inequality issues that arise from them. He currently works on projects around human–environment relations, in particular on issues around circular economy, natural capital, peatland restoration.

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