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EU AI sovereignty: for whom, to what end, and to whose benefit?

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ABSTRACT

EU policy emphasises the need for digital sovereignty, also in artificial intelligence (AI). But because such ‘AI sovereignty’ could be used for diverse and even conflicting goals, it obscures the tensions that actual EU AI strategy entails. Conceptually, this article proposes three central trade-offs: first, does AI sovereignty pit the EU against other major AI powers, or rather citizens against large tech companies? Second, is AI sovereignty meant to boost the EU’s position in a putative AI race, or is it a means to defy this competitiveness-logic, instead? And third, is EU AI sovereignty primarily meant to benefit European citizens, or does it embrace a global responsibility? The empirical analysis then maps the EU Commission’s AI strategy since 2018 and the EU AI Act negotiations onto these three dimensions. It reveals that EU AI policy prioritises jurisdictional independence over citizens sovereignty, that it embraces a global AI race logic, and that it largely neglects its impact on people beyond the EU. This orientation of EU AI sovereignty resonates with and feeds into rising geo-economic tensions. But it would underestimate the importance of public policy to assume that it flowed naturally from technological transformations, rather than from political choices.

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Introduction

Digital sovereignty has become a central aspiration of European Union (EU) policy. It encapsulates ‘the need for *control of the digital* on the physical layer (infrastructure, devices), the code layer (standards, rules, design), and the information layer (content, data)’ (Falkner *et al.*, [forthcoming](#), emphasis in original). This perceived need for control also extends to artificial intelligence (AI).¹ That ambition, which I call ‘AI sovereignty’, captures the AI-

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specific aspects of digital sovereignty: the need for control, as necessary to develop and deploy AI technologies, of computing capacity and data storage, of access to human resources and potentially proprietary knowledge to build AI applications, and of training data. EU institutions do not use the term 'AI sovereignty' themselves. Yet as a facet of digital sovereignty, it pervades the Commission's AI strategy documents.

Digital sovereignty is a highly amorphous concept (Roberts *et al.*, 2021), lending it intuitive appeal comparable to 'strategic autonomy' (Csernatori, 2022; Schmitz & Seidl, 2023). The Commission articulates it most clearly in the *Digital Compass* as an essential precondition for a wide range of policy goals. In an exemplary statement, it claims that.

[the] European way to a digitalised economy and society is about solidarity, prosperity, and sustainability, anchored in empowerment of its citizens and businesses, ensuring the security and resilience of its digital ecosystem and supply chains. (European Commission, 2021a, p. 2)

By promoting all these objectives simultaneously, digital sovereignty is presented as an uncontroversially desirable policy goal.

At the same time, AI technology (AIT) development and deployment, and thus the policies to steer those, create both winners and losers and thus entail trade-offs, both within and across societies (Acemoğlu & Johnson, 2023; Pinto, 2018; cf. Smuha, 2021). The AI sovereignty discourse obscures the substantive political choices that become necessary once it is translated into concrete policy (af Malmborg, 2023; Bareis & Katzenbach, 2022; Paul forthcoming). Mirroring this special issue's focus on the gap between the rhetoric and reality of digital sovereignty, this article asks: which substantive political choices hide behind the EU's AI sovereignty ambition?

The relative novelty of EU AI policy hampers its study over time. This article therefore uses a different inferential strategy. In a first step and contribution, it derives three central dimensions of AI sovereignty that entail political choices in practice from an extensive literature review. They capture trade-offs between prominent policy goals, which AI sovereignty discourse misleadingly suggests could be achieved simultaneously.

The first dimension asks for whom (and thus from whom) sovereignty is to be won (*its subject*). Like the other two, it entails two competing ideal-typical alternatives: is AI sovereignty traditionally conceived, pitting countries or jurisdictions against each other? Or is it about citizen empowerment vis-à-vis a powerful tech sector? Second, what is *objective* of AI sovereignty with respect to a putatively global AI competition: is it to boost Europe's position in it? Or is it marshalled to emancipate policymaking from competitive rationales, emphasising alternative policy goals instead? Third, what is the scope of its envisaged *beneficiaries* (Glasze *et al.*, 2023): is AI sovereignty conceived in 'Europe first'-terms? Or does it also heed the interests of people beyond EU

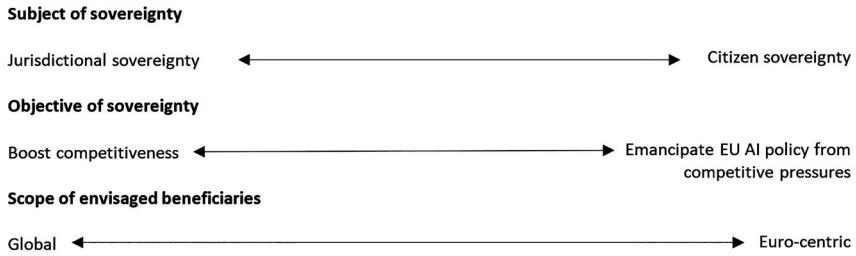


Figure 1. Three contentious dimensions of AI sovereignty.

boundaries, even when these interests might clash with those of EU citizens? *Figure 1* summarises these three axes.

The second analytical step is an in-depth analysis (Bowen, 2009) of seven central documents summarising the Commission's AI strategy along these three dimensions. The complete documents analysed, as well as the passages embodying the competing conceptions of AI sovereignty, are available online as supplementary materials to this article.

Since the Commission has published its AI Act proposal in April 2021, most EU AI debates have concentrated on the regulation-specific negotiations between the Council and the European Parliament (EP). Other aspects of the overarching AI strategy, such as supporting AI research in Europe or public investment schemes (European Commission, 2024), have moved out of the limelight. This selective and partial focus makes the AI Act debates less useful to the analysis proposed here – after all, they cover only one facet of EU AI policy. Nevertheless, to establish to what degree dominant conceptions of AI sovereignty have remained intact, the final empirical section will survey those negotiations until the agreement on the final text in early 2024.

The analysis reveals the strongly jurisdictional, pro-competitive, and Euro-centric core of AI sovereignty. It pits Europe against other major AIT powers, such as the USA and China, and champions joint efforts by European companies and public authorities to develop 'AI made in Europe' (European Commission, 2018a). The Commission strategy recognises potential AI infringements of individual citizen rights. But there is no readiness to redirect, slow, or halt AIT diffusion to dampen its societal impacts. AI sovereignty is a means to boost EU economic competitiveness and to secure a better European position in a global AI race, not to emancipate EU AI from competitive rationales. Finally, the AI sovereignty discourse is normatively Euro-centric in that it effectively ignores the global ramifications of an accelerated EU push into AITs.

In what follows, I first locate AITs in the EU's digital sovereignty discourse and explain the inferential approach and the data used. Subsequently, the article's three substantive sections establish the three AI sovereignty

dimensions I propose, map them onto the Commission's AI strategy, and then discuss how those findings have also been mirrored in the EU AI Act negotiations.

Analysing EU digital sovereignty in AITs

EU Commission president Ursula von der Leyen announced 'digital sovereignty' as a lodestar for digital policy in 2020 (European Commission, 2021a, p. 1). Together with open strategic autonomy (Schmitz & Seidl, 2023), it has served as a key plank of Europe's global ambitions (cf. Burwell & Propp, 2022), portrayed not as an absolute goal (full control or none), but as a gradual aspiration (more control is better than less). It has inspired policies for example about cloud computing (Obendiek & Seidl, 2023, p. 1318ff), semiconductor production (the 2023 European Chips Act), or 5G networks (Monsees & Lambach, 2022), even if the Commission's strategy has been less coherent and consequential than the rhetoric suggests (Carver, 2024; Roberts *et al.*, 2021).

The Commission's *Digital Compass* highlights AI as a key dimension of digital sovereignty (European Commission, 2021a). The lack of cutting-edge European AI capability and investment compared to the USA and China makes EU AI sovereignty a challenging prospect (Calderaro & Blumfelde, 2022). Nevertheless, the digital sovereignty discourse weighs particularly heavily on AI policy because the field is evolving quickly (Taeihagh *et al.*, 2021) while it remains unclear which aspects of AITs require public intervention (Nordström, 2022; Schuett, 2023). Confronting highly uncertain future developments, policymakers must rely on speculative projections to a disproportionate degree. At the same time, the EU's ability to navigate alternative future scenarios presupposes a modicum of AI sovereignty, so control over the data, computing resources, storage capacity, (potentially proprietary) knowledge, and human resources necessary to develop and deploy AITs in the first place.

EU actors have consistently emphasised their commitment to 'responsible AI', 'human-centric AI' and 'trustworthy AI' (cf. Dignum, 2019), not least to differentiate the European approach from the stronger commercial orientation in the American AI policy and government dominance in the Chinese one (Bradford, 2023; Zeng, 2020). The *European Declaration on Digital Rights and Principles*, for example, postulates that.

technology should be used to unite, and not divide, people. The digital transformation should contribute to a fair and inclusive society and economy in the EU. (European Parliament *et al.*, 2022, Chapter II)

The Commission has argued in a similar direction: 'the European vision for 2030 is a digital society where no one is left behind' (European Commission,

2021a, p. 2), suggesting particular care for those potentially harmed or least likely to benefit from the digital transformation.

AI sovereignty is discursively appealing because at this level of generality, it remains silent about the trade-offs that beset real-world policy. Just as generic support for 'ethical AI' dodges questions about which ethics those should be (Aradau & Blanke, 2022, p. 139ff), it allows competing interpretations of what that would mean in practice, suggesting a harmony of interests where in fact they may clash (Barrinha & Christou, 2022). The mission of this article is to reveal both this scope for conflicting instantiations and the actual choices made in EU AI strategy.

Data and methods

Covering policy domains such as internet (Perarnaud & Rossi, 2023) or digital content (Flonk *et al.*, 2024) governance, contributions to this special issue investigate how the EU's digital sovereignty rhetoric shapes actual policy. Also in AI policy, the digital sovereignty discourse is clearly present (Calderaro & Blumfelde, 2022). Compared to other policy fields such as financial regulation (Donnelly *et al.*, 2023), however, AI policy's novelty limits the study of policy *change* over longer periods of time.

This contribution therefore employs an alternative inferential strategy. The introduction to this special issue highlights three questions that a general commitment to digital sovereignty leaves unanswered: against whom that control needs to be secured or defended; whether the control implied by 'digital sovereignty' should bolster or contain an economic efficiency logic; and whether it contravenes or buttresses more general human and civil rights as a central orientation for policy (Falkner *et al.*, *forthcoming*). I adapt these questions to develop competing ideal types of what AI sovereignty *could* mean in the following section, and then establish to what degree those ideal types inform actual EU AI strategy.

This approach complements more inductive analyses of EU AI discourse (e.g., Ulnicane *et al.*, 2021) and critical interpretivist work (cf. Paul, 2022). From close-by, institutionalised policy discourses and their boundaries frequently seem natural (cf. Schmidt, 2011). Acceptance of inter-subjectively shared discussion parameters can obscure what could also have been argued but hardly was (Karppinen & Moe, 2019). This article's approach thus helps reveal the political choices underlying 'common sense' debates (Bacchi, 2000).

The empirical section takes two steps. Its bulk focuses on the Commission's AI strategy until 2021, when it published its AI Act proposal and passed the legislative baton to the EP and the Council. A subsequent section then establishes to what degree patterns from that strategy have remained intact or shifted since then.

The primary focus lies on documents by the Commission because the latter is the only institution that has laid out consistent and comprehensive visions for AI policy since 2018. The Commission has been the driving force behind policy and the EU digital sovereignty discourse (Seidl & Schmitz, 2023). Its risk-based approach to AITs has largely remained unchallenged in the co-decision process finalising the AI Act, and the substantial continuities between the first Commission strategy (European Commission, 2018a) and its second iteration, after responses from the other EU institutions (European Commission, 2021c), reflect this enduring basis.

This first section's document corpus does not include the AI Act itself. The legal guardrails the AI Act seeks to establish constitute only one dimension of EU AI strategy, which includes sundry measures to spur AI development and deployment in Europe. The AI Act's cautionary tone suggests a much more negative take on AI than its overall strategy does. The AI Act does offer contextual framing in the preambles and recitals, but those mostly link proposed policy to extant regulations and directives, rather than outlining overall policy ambitions.

Against that background, this section concentrates on the following documents:

- (1) *Coordinated Plan on Artificial Intelligence* (European Commission, 2018a)
- (2) *Artificial Intelligence for Europe* (European Commission, 2018b)
- (3) *White Paper on Artificial Intelligence – A European approach to excellence and trust* (European Commission, 2020b)
- (4) *Strategic Foresight Report: Charting the Course towards a More Resilient Europe* (European Commission, 2020a)
- (5) *Fostering a European Approach to Artificial Intelligence* (European Commission, 2021c)
- (6) *Annexes to Fostering a European Approach to Artificial Intelligence* (European Commission, 2021b)
- (7) *Digital Compass. The European way for the digital decade* (European Commission, 2021a)

Most of these documents focus squarely on AITs. In them, the Commission sketches the challenges and opportunities it sees in AIT development and deployment, and it outlines its envisaged policy response. The two central documents are the *Coordinated Plan* (2018, document 1) and its update *Fostering a European Approach* (2021, document 5, plus its Annexes, document 6). The 2018 version had answered a request from the EP and member states for the Commission to develop an EU AI strategy, to be updated three years later. *Artificial Intelligence for Europe* (2018, document 2) functioned as an explanatory memo published concomitantly with the *Coordinated Plan*. The *White Paper on Artificial Intelligence* (2020, document 3)

offered a first outline of the Commission's regulatory approach, inviting responses from stakeholders across the board. Together, these documents constitute the core of the Commission's AI strategy.

They are complemented by two additional, more encompassing ones that bear directly on AI policy: the 2020 *Strategy Foresight Report* (document 4) integrates digital policies into an analysis of the EU's future global position and highlights what role the Commission accords AI for future 'resilience'; the *Digital Compass* (document 7) places AI in the wider gamut of digital policies and articulates the Commission's overall digital sovereignty agenda.

Understanding the varying emphases in policy documents requires an appreciation of textual context. Word counts across many texts can reveal concepts' prominence (Roberts *et al.*, 2021); how they are filled with substance, in contrast, remains for readers to establish. For example, central policy documents developed after von der Leyen's 2020 speech meticulously avoid the concept 'digital sovereignty'. The *Digital Compass* mentions it just once, referencing that speech as inspiration. While the broader discourse resonates throughout the document, a simple word count would support the opposite conclusion. This analysis therefore establishes the weight of competing AI sovereignty ideal types according to their prominence, concreteness, and urgency: how much space is accorded to the associated arguments; whether concrete policy proposals are tied to them; and how strong the statements are ('It is of utmost importance that ...' carries more weight than 'we should heed ...').

This strategy and the limited number of documents leaves scope for their subjective reading. For that reason, the analysis concentrates on clear commonalities, not minor variations in emphasis. Annotated and coded versions of all documents are available as supplementary materials to this article, allowing other researchers to assess my interpretation's plausibility (Schwartz-Shea & Yanow, 2012).

The second, more succinct part of the empirical analysis then compares these findings to the EP and Council positions in the trilogue negotiations (see European Commission, 2023, also included in the supplementary materials) and to the eventual compromise approved by member states and the relevant EP committees in February 2024.

Conceptualising tensions in AI sovereignty

Sovereignty for and from whom?

The first sovereignty dimension captures the subject of sovereignty: who or what is meant to gain sovereignty, and from whom? It pits what I call jurisdictional sovereignty against citizen sovereignty. Jurisdictional sovereignty builds on inter-state conceptions of sovereignty (Krasner, 2016), capturing

the relative independence of a geographically circumscribed unit from other major powers.

Arguments for jurisdictional AI sovereignty fall into two categories. The first highlights the security and military relevance of AI as a source of both vulnerabilities and offensive capabilities (Bode & Huelss, 2022; Mügge, 2023), inviting realist pleas for domestic control. Second, jurisdictional sovereignty matters because of AITs' presumed future centrality in the global economy. If they are traded freely, economies of scale, network effects, and first-mover advantages promote corporate concentration and winner-takes-all dynamics (Open Markets Institute, 2023). The consequence is a putative 'AI race', in which a few leading jurisdictions vie for economic supremacy and their relative independence, because prosperity that hinges on foreign companies constitutes a vulnerability (critically Bryson & Malikova, 2021).

Jurisdictional sovereignty in AI thus has a mercantilist bent, in which governments champion domestic companies and marshal various tools to promote them (cf. Heidebrecht, 2024). Large multinational corporations whose AI activities or products carry security implications are drawn into geopolitical dynamics, for example by imposing selective export restrictions on them or using their data and knowledge for government ends (Chen & Evers, 2023). As state rationales increasingly figure in leading countries' digital sectors (Rolf & Schindler, 2023), quests for geopolitical and commercial supremacy fuse into geoeconomic strategies that unite public and private actors.

Citizen sovereignty entails a very different view on the relationship between public and private actors in AI, namely public control over the development and application of AITs, contra its dominance by large companies (Lopez Solano *et al.*, 2022). A broader, state-agnostic definition sees sovereignty as 'a form of legitimate, controlling authority' (Roberts *et al.*, 2021, p. 6). Legitimacy in turn implies that citizens should have a voice in crafting policy, even if indirectly, and that policy outputs should help achieve goals they care about (Schmidt, 2012).

This citizen voice matters because innovation does not automatically produce broadly shared benefits (Acemođlu & Johnson, 2023). Historically, labour-saving technologies have disproportionately benefitted the owners of capital, and distributing the spoils of progress broadly required forceful political intervention. AI technologies, too, can be used to extract value from citizens (Atanasoski & Vora, 2019; Couldry & Mejias, 2019) and to repress them (Eubanks, 2019). Safeguarding sovereignty, in that perspective, is as much about defending citizens' individual and collective authority against private encroachment as against foreign governments. AITs' scope for commercial exploitation (Zuboff, 2019) and political manipulation (Suskind, 2018) shifts the focus from *individual* harms, such as being

discriminated against, to *collective* ones, in which algorithms damage the social fabric as such (Mantelero, 2016; Smuha, 2021).

A modicum of citizen control over AITs requires a different form of AI development and deployment than one that pits countries against each other. Jurisdictional sovereignty requires public authorities to champion and promote domestic AIT companies; citizen sovereignty imply that they tightly regulate and subordinate them, instead. These two visions of sovereignty pull in opposite directions.

To make these alternative conceptions of sovereignty tractable, document analysis will focus on the prominence, concreteness and urgency of statements that support either one. To gauge jurisdictional sovereignty I establish how central calls for 'AI made in Europe' stand in strategy documents, and whether the latter outline concrete measures to support it. Citizen sovereignty, in contrast, will be reflected in statements that depict private dominance of AI development as a problem, potentially accompanied by specific illustrations as well as interventions meant to curb corporate dominance.

Sovereignty and economic competitiveness

Two strands of thought can be distinguished regarding AI sovereignty and its relationship to economic competitiveness. The first suggests leveraging AI sovereignty to gain a competitive advantage in a putative AI race; the second suggests using it to defy structural competitive imperatives and to prioritise other socio-economic values, instead. This dimension is related to the first, but distinctive: jurisdictional sovereignty for example is compatible with *both* the embrace and the rejection of global AI competition.

Many observers have predicted AI-driven affluence, comparing AITs' rise to the disruptive but ultimately beneficial effects of general purpose technologies such as electricity (Brynjolfsson & McAfee, 2014). Given AIT's easy scalability and the high required up-front investment, however, their immediate rewards are likely to be concentrated (Atal, 2021; Staab, 2019). The USA and China currently lead global AIT development (Lee, 2018). Without its own AIT sector, so the implication, much prosperity that AIT diffusion could bring to Europe might end up in non-European hands. EU AI sovereignty could be a means to secure a European part of that pie.

A very different perspective highlights AITs' potential for capitalist surplus extraction (Couldry & Mejias, 2019; Dyer-Witheford *et al.*, 2019). Here, free reign for AITs intensifies inequalities; unlocking data as a new site of profit generation is seen as the main driving force of AIT development and diffusion (Zuboff, 2019). Asking about the aggregate effect on economic growth masks fundamental distributional conflicts. That concerns not only the earning power of AI developers themselves (Open Markets Institute,

2023), but also the exploitative potential that such technologies afford to other companies. The so-called gig economy, in which algorithmic assignment of tasks facilitates completely new business models, exemplifies this development (Srnicek, 2017).

AITs also spur automation and the substitution of algorithms for workers (Ford, 2018). The speed and scale of labour displacement remain unclear, as well as which new forms of employment may arise. Even moderate estimates, however, foresee ten percent or more of jobs lost within a decade (Spencer *et al.*, 2021, p. 16f), enough to disrupt European societies and their politics (cf. Iversen & Soskice, 2020). At the same time, digital innovation, companies and labour market impacts are unevenly distributed cross EU member states (cf. Brekelmans & Petropoulos, 2020), and the resulting creation of European winners and losers could themselves exert pressure on EU cohesion. Seen in this light, EU AI sovereignty could be used to attenuate the socio-economic disruption wrought by AITs, shielding European producers, slow to implement labour-replacing AI to save jobs, from overseas AI-enhanced competition. In short, AI sovereignty could be used to get ahead in a global AI race, or to emancipate the EU from its imperatives.

Statements that would support the former vision emphasise competition in AI itself, as well as the arguments and dynamics that underpin it: network effects, AITs' scalability, high entry costs, and the resulting winner-takes-all dynamics. This competition-oriented version of AI sovereignty might be given additional urgency by arguing that the EU confronts a 'now or never'-moment, in which (further) falling behind in AI matters would carry dire consequences. The contrasting perspective would be evidenced by statements that highlight the EU's need to chart its own course in the way that AI takes root in European societies – for which AI sovereignty might be a precondition. This alternative European course would be evidenced in statements that explicate how the EU might follow a path distinct from the USA as the main supplier of AITs to Europe. It would gain special weight if EU institutions would support sacrificing some competitiveness in AITs to stick to Europe's own vision.

Sovereignty and global commitments

The third sovereignty dimension captures to whose benefit AI sovereignty is to be used. The default version limits the scope of beneficiaries to European citizens, as the constituency to which EU policymakers are politically accountable.

A Europe-first approach is less obvious than it may seem, however. Many EU policies are meant explicitly to consider the welfare of people outside of Europe. Article 21 of the Treaty on European Union, for example, highlights

the EU's ambition to 'foster the sustainable economic, social and environmental development of developing countries'. Moreover, the EU has long presented itself as a distinctive global power in its emphasis on norms and values (Fahey & Mancini, 2022) and its preference for civic power over force (Telo, 2005), for example concerning environmental matters, fair labour standards, human rights, democracy, or gender equality.

In this light, the EU could leverage AI sovereignty to manage AI policies' global impact along several axes (Lopez Solano *et al.*, 2022, p. 45ff). To begin with, AIT proliferation has a multi-faceted environmental impact. Notwithstanding AITs' ability to make resource use more efficient (Zhao, 2019), their climate impact and the resource extraction associated with computing and with AITs remains immense (de Vries, 2023; Ensmenger, 2018). Much of the impact is concentrated outside the Global North (Crawford, 2021).

For most countries, together home to most of humanity (cf. Amrute *et al.*, 2022), challenging American and Chinese AIT dominance is implausible. The digital futures of most people are shaped by decisions made by faraway governments and corporate behemoths, creating dependencies that have been likened to digital colonialism (Pinto, 2018). The development and application of AI in the Global North can sharpen the global division of labour between those parts of the production chains rooted there, and those in the Global South.

Educational and job market dynamics amplify this dynamic. Tech companies wooing workers from around the world feed a brain drain from poor countries, stifling local technology development. A strong push into AITs, backed up by the resources rich countries command, may deepen the global digital divide unless counteracted by conscious policies. At the same time, most of the poorly remunerated and highly repetitive tasks necessary for training algorithms are selectively outsourced to poorer countries (cf. Atanasoski & Vora, 2019, p. 24), including emotionally draining ones such as content moderation on social media platforms (Roberts, 2021).

Finally, much AI-optimistic discourse enumerates the good that *could* be done with AI, also in the Global South. In practice, what matters more is what is *likely* to be done with AITs, as applications are typically developed for those who can pay for them – be they corporations, end users, or governments. It is not obvious that AI applications supporting disadvantaged people and countries will emerge without forceful interventions from powerful governments (Ahmed *et al.*, 2023).

Taken together, there is no automatism ensuring that an AI policy beneficial to European citizens also benefits people elsewhere. Contrary to an ideal-typical Euro-centric use of AI sovereignty, one embracing global responsibility would entail trading off EU citizen interests against those of citizens abroad.

In contrast to the two other AI sovereignty dimensions, the question for this one is not whether one or the other conception dominates – a strong focus on policy benefits for European citizens is to be expected in any case. Instead, I will assess whether, in addition to that, EU policy seriously heeds policies' extra-European impact. Those could include environmental degradation, job market disruptions, outsourcing of dangerous or harmful labour to non-European countries, fears for oppressive use of European technology abroad, and so on. Such indications of global concern would weigh particularly heavily if EU actors were willing to heed them at the expense European interests narrowly conceived.

Analysing EU AI policy

To what degree do we find the alternative conceptions of AI sovereignty along the three dimensions reflected in Commission strategy documents? The analysis in this section incorporates how prominent these conceptions have been in the corpus analysed, how concrete the measures are that are attached to them, and as how urgent they are presented.

Sovereignty for and from whom?

In its AI strategies, the Commission repeatedly underlines that AITs are characterised by 'fierce global competition' (European Commission, 2018b, p. 2; literally reiterated in European Commission, 2020b, p. 1), necessitating a push for 'AI made in Europe' (European Commission, 2018a). In one of the consistent themes throughout the document corpus, the Commission emphasises that to benefit fully from AITs, it is crucial that Europe has its own globally competitive AI sector (cf. Ulnicane, 2022). Because 'the race for global leadership is ongoing' (European Commission, 2020b, p. 6),

[it] is also essential to make sure that the private sector is fully involved in setting the research and innovation agenda and provides the necessary level of co-investment. (European Commission, 2020b, p. 7)

To that end, the Commission proposes sundry concrete policy initiatives (European Commission, 2021b, p. 5ff): it takes a supporting role in efforts to digitise European industries, facilitates data sharing between businesses and public authorities to build AI systems, bolsters the establishment of high performance computing in Europe (European Council, 2021), launches testing and experimentation facilities for edge AI components, and so on. The annexes to the 2021 update to the Commission's AI strategy feature dozens of pages listing tangible plans in the service of 'EU global leadership in trustworthy AI' (European Commission, 2021b, p. 2). Many have been implemented.

In contrast, the sceptical take on large technology companies, otherwise frequent in Brussels discourse, is effectively absent from Commission AI strategy documents. Equally absent is the notion that citizens should be empowered to decide what place AITs get in society. Instead, 'it is up to governments [...] that a broader reflection on potentially deeper societal changes [wrought by AIT diffusion] is taking place' (European Commission, 2018b, p. 13f). There is little appetite to leverage AI as a tool of human emancipation, including for example to mend broader ills of contemporary societies such as dismantling institutionalised forms of disadvantage (cf. D'Ignazio & Klein, 2020).

Making sure that 'AI [works] for the people and [is] a force for good in society' (European Commission, 2020b, p. 25) means letting (preferably European) companies build innovative AI applications while outlawing individual rights infringements, such as discrimination or privacy violations. Protection of individual rights, defined top-down, looms large. But societal harms receive scant attention. Only the 2020 Strategic Foresight Report, co-produced by the EU's independent Joint Research Centre, worried for example about 'the artificial soliciting of human attention' with the help of AITs (European Commission, 2020a, p. 33) or the danger of a 'digital divide between regions and individuals' (European Commission, 2020a, p. 33). Concrete countermeasures are not proposed.

The Annexes to the 2021 update of the Commission's AI strategy, *Fostering a Common Approach*, offer the most specific overview of planned and proposed actions. Only three of its 17 chapters focus on 'ensuring that AI works for the people and is a force for good in society', and these highlight skills development, a 'policy framework to ensure trust in AI systems', and globally promoting the EU's vision of sustainable and trustworthy AI, respectively (see the overview on European Commission, 2021b, p. 4). Mechanisms to create a form of citizen sovereignty over AITs in Europe are not envisaged. The other 14 chapters discuss EU leadership in AI and public measures to support it. AI sovereignty, in short, is clearly a means to boost the EU's position vis-à-vis other jurisdictions, not to accord citizens more agency over how AITs become part of their lives.

Sovereignty and economic competitiveness

Official Commission communications and strategy documents embrace an AI-positive yet competitive rationale – boosting AITs with few discernible worries about deleterious distributive or socio-economic impacts (cf. Ulinicane, 2022). This emphasis is mirrored in national AI strategies (Radu, 2021), and it differs markedly from for example GMOs or CRISPR gene-editing policies, which feature a more precautionary approach (Nordström, 2022).

'It is time to [...] ensure that European is competitive in the AI landscape', the Commission (2018b, p. 3) has argued. To that end, a 'European AI public-private partnership' (European Commission, 2018a) is necessary, helping '[to define] priorities in line with the needs of the market' (European Commission, 2023). Regulation should not get too much in the way:

To be future-proof and innovation-friendly, the proposed legal framework is designed to intervene only where this is strictly needed and in a way that minimises the burden for economic operators. (European Commission, 2021c, p. 6)

Beyond that, the Commission argues for 'the broadest possible uptake of AI in the economy' (European Commission, 2018a). This strategy links to the embrace of a competitive logic, presented as urgent:

One of the main challenges for the EU to be competitive is to ensure the take-up of AI technology across its economy. *European industry cannot miss the train.* (European Commission, 2018b, p. 3, emphasis added)

That also requires 'unlocking' data (European Commission, 2023, p.6) to 'greatly ease the cross-border operation of businesses in the Union' (European Commission, 2023). Elsewhere, the Commission argues that

Europe's current and future sustainable economic growth and societal well-being increasingly draws on value created by data. (European Commission, 2020b, p. 1)

Many of the (at that stage proposed) EU policies support that goal: the Data Act and Data Governance Act, for example, are to facilitate data sharing across companies and public sector entities (European Commission, 2021a).

Ehret (2022) found that many citizens in Europe and elsewhere would countenance banning AI systems if that would save jobs. But irrespective of whether that would be effective, that choice is never put to them. Instead, AI regulation is meant to limit risks to individuals and must be proportionate to them. Without such risks derived from a recognised framework (for example infringements of human rights), there is no rationale or justification for regulation.

EU AI strategy features general statements such as 'no one is left behind in the digital transformation' and the EU's ambition to 'be a champion of an approach to AI that benefits people and society as a whole' (European Commission, 2018b, p. 3). These goals are never made concrete or translated into specific proposals, however.

The first main Commission communication on the topic, *Artificial Intelligence for Europe* (European Commission, 2018b), emphasises how human-AI cooperation can boost worker productivity, rather than worry about potential worker replacement. Other communications do emphasise that AI

diffusion can disrupt specific labour market segments. It advises (re-)training schemes to ensure that the EU labour force commands the skills that businesses need now and in the future. What is not considered is for example slowing the pace of AI diffusion or schemes to compensate losers in the labour market. Indeed, the main economic worry is that AI uptake is too slow:

Without major efforts, the EU risks losing out on the opportunities offered by AI, facing a brain-drain and being a consumer of solutions developed elsewhere. (European Commission, 2018a)

The logic is that the EU needs AITs to grow economically, and that a broad AIT uptake boosts AIT development itself – a virtuous circle. AI sovereignty serves that end, rather than allowing the EU to chart a more autonomous course in light of the undesirable socio-economic effects the embrace of an AI race may have.

Sovereignty and global commitments

EU AI strategy documents continuously emphasise the centrality of citizens and the benefits AITs can bring them. To what degree do they also betray a responsibility to people outside of Europe, in particular in poorer countries – if only through a conscious management of the effects that EU AI policies may have there?

Overall, the AI strategy shows little explicit regard for its impact outside the Global North. References to countries other than the main competitors in the AI field are rare and generally suggest that if the EU is successful in AI, everyone will benefit from the ethical superiority of 'AI made in Europe'. The 2018 *Coordinated Plan*, for example, features only one mention of the rest of the world, beyond other AI powers:

Europe can become a global leader in developing and using AI for good and promoting a human-centric approach and ethics-by-design principles. (European Commission, 2018a)

Agriculture offers a concrete example:

[The] Union will contribute its expertise and dedicated financial means to anchor AI more firmly in development policy. Artificial intelligence is destined to make impactful contributions to global challenges as well as development policy. AI-powered precision farming, for example, promises to reduce pesticides, fertiliser and water consumption, making it an ideal technology to help a growing population in the developing world. AI can also be used to model weather, climate and other natural phenomena [...]. AI and digital technologies can underpin affordable high-tech solutions including for people in precarious circumstances, while respecting ethical and privacy issues. (European Commission, 2021b, p. 21f)

Poorer countries could be natural beneficiaries and customers of EU-developed AITs – a win-win situation. Given this automatism, there is no need that EU policy should put these countries' perspectives or stakes in EU AIT development central in their own right.

The policy goal is thus not doing good in the world per se, but about using a competitive advantage in global AIT markets by being 'an assertive player in fair and rule-based international trade' (European Commission, 2021a, p. 1). 'Fairness' here refers to the main trade competitors and, for example, how government support or digital protectionism may be used to cement advantageous positions, not to sharing the fruits of global development more fairly across the globe.

In its Digital Compass, the Commission argues that.

[by] 2030 international digital partnerships should result in greater opportunities for European companies, increased digital trade via secure networks, respect of European standards and values, and a more supportive environment internationally for the kind of human-centric digital transformation we and other partners want to see. (European Commission, 2021a, p. 20)

Just what that 'supportive environment' is remains unclear. It ties into the EU's ambition to internationalise its own AI standards in development (European Commission, 2021b, p. 34), also to avoid regulatory competition, which might otherwise put it at a competitive disadvantage. Beyond that, Commission strategy remains unspecified.

Also where building a qualified AI workforce is concerned, a competitive spirit prevails:

Going towards 2030, the global competition for talent will be fierce, as expertise will remain scarce and be a critical factor of innovation, productivity growth and prosperity for all countries. The fostering of the EU's attractiveness as well as support schemes for digital talent will play a key role in [the] EU's digital transformation. (European Commission, 2021a, p. 5)

To do so, member states should 'exploit the possibilities offered by the current legal migration acquis' (European Commission, 2018a) and 'attract talent from all over the world' (European Commission, 2020b, p. 6) – both referring to recruits from the Global South. If Europe competing for tech workers drains other countries of the expertise they too might need, so be it.

Commission documents do recognise AIT's climate impact, an inherently global challenge, mainly through electricity use of data centres and algorithm training and inference – the most common theme in the strategy that has a global dimension (e.g., European Commission, 2018b, p. 10; European Commission, 2020a, p. 34). That is not seen as a reason to temper AIT development, however, but to gain a competitive

advantage by investing in low-energy computing research (European Commission, 2021b, p. 14).

Taken together, references to the global impact of an EU AI strategy mostly emphasise how the ethical superiority of what the EU develops, or plans to develop, is an automatic boon to people and countries elsewhere. There is no sense that EU AI policy might need to heed legitimate concerns of people beyond the EU, let alone that EU AI sovereignty might be a stepping stone to realise that vision. The basic principle is to forge ahead with AI development between the guardrails that the EU establishes, based largely on EU-internal considerations.

AI act deliberations

The analysis so far has concentrated on EU Commission documents until 2021, which covered the whole breadth of envisioned EU AI governance. Since the Commission tabled its draft AI Act in April 2021, AI debates in the EU have simultaneously narrowed and broadened. They narrowed in that AI *regulation* – so limitations on acceptable AI development and use – have stood central, sidelining the more AI-supportive EU initiatives such as promoting and coordinating investment (most recently the Strategic Initiative on AI Startups and Innovation, see European Commission, 2024). At the same time, they broadened as other member states and the EP entered the fray, which embraced more diverse positions with an eye to later negotiations in the trilogue. For both reasons, the complex and strategically divergent opinions that surfaced since the draft AI Act publication resist analysis as expression of a single, coherent EU perspective on AI sovereignty.

Nevertheless, it is possible to assess whether the general take on AI sovereignty has remained intact since 2021, or whether at least some actors have deviated significantly from the approach outlined above. This section takes a double-pronged approach: it first examines the EP's and Council's amendment proposals to the Commission's AI Act to establish whether either of the co-legislators has introduced suggestions that would signal a different take on AI sovereignty. And it surveys the general debate about EU AI governance since 2021 for dynamics that would suggest a departure from the trends outlined above.

The Council had finalised its suggestions for AI Act amendments at the end of 2022; the EP tabled its version in the summer of 2023 (European Commission, 2023). Few of the suggested changes, however, bore on AI sovereignty, either directly or indirectly. In the preambles to the Act, which do not contain legally binding rules, the EP highlighted the environmental and societal impacts of AITs (European Commission, 2023, e.g., p. 6 and pp. 102ff). Even if vague, this emphasis does feature more prominently in the final version of the AI Act than in the original Commission proposal. The EP amendments

also stressed that AITs should not undermine human autonomy (p. 13), and it did worry that benefits from AITs and investments in them will be unevenly spread throughout the union (p. 17). At the same time, it proposed adding language to the Commission draft that stresses the importance of ‘AI made in Europe’ (p. 14). The Council amendments rarely add such broader considerations; if anything, they underline that regulation should not become disproportionately burdensome for companies. The only one of these points that returned in the actual legal provisions concerned tighter reporting requirements about AITs’ environmental impact (e.g., p. 232, p. 253). In the final version, parts of those amendments had been shifted to the non-binding preambles in the final version. Taken together, then, the trilogue had not fundamentally changed the AI sovereignty orientation as embodied in the AI Act. With the exception of the generative AI provisions, which were added along the way, the final text resembles to original proposal to a remarkable degree.

Jurisdictional versus citizen sovereignty

Considering the broader debate since 2021, the relative optimism characteristic for the early EU AI debate has made room for a heightened sense of urgency since 2021. The publication of ChatGPT and other large language models (LLMs) since 2022 has demonstrated AITs’ capabilities to a wide audience and fuelled debates about potentially catastrophic long-term risks, put centre stage at the UK AI Safety Summit in November 2023. At the same time, these low probability scenarios sidelined more immediate concerns about how AITs become part of society now already (Nature, 2023). In effect, the emphasis on doom scenarios did not strengthen citizen sovereignty as a priority.

Corporate dominance in AITs – also central to the citizen sovereignty perspective – has moved in and out of focus. As AI sector concentration has increased further (Open Markets Institute, 2023), these oligopolistic structures have become more conspicuous, especially for LLMs, even as the number of firms involved in AI value chains more generally has proliferated (Brown, 2023). The effect on AI sovereignty debates has been ambiguous, however, as US corporate domination has itself strengthened the perceived urgency to buttress European corporate champions in the field.

Competitiveness versus emancipation from competitive pressures

As a form of product regulation (Krarup & Horst, 2023), the AI Act does not feature measures to support a European AI sector and hence competitiveness. The issue did feature prominently in debates about regulation of general purpose AI (so-called foundation models, such as OpenAI’s GPT4), however. While the EP had favoured a cautionary approach especially for

the most advanced forms of AI, Commission vice-president Vera Jourová warned in October 2023 against being ‘paranoid’ in the regulation of generative AI (Espinoza & Hancock, 2023).

The fear that excessive regulation of foundation models could dent EU competitiveness was starkly emphasised by the French, German and Italian joint position in the final stage of the trilogue negotiations in late 2023. French AI start-up Mistral and its German counterpart Aleph Alpha raised several hundred million euros each since the summer of that year, bolstering hopes in Paris and Berlin that they might become viable challengers of US incumbents. In consequence, the French and German governments joined forces with Italy to question the relatively cautious approach to foundation models that had emerged in the trilogue over the fall in light of the ‘global race of AI’. In a memo circulated around 19 November 2023 (a so-called non-paper), the three countries emphasised the need to.

[reduce] unnecessary administrative burdens on Companies that would hinder Europe’s ability to innovate, that will foster contestability, openness and competition on digital markets. (Anonymous, 2023)

Also Carme Artigas, Secretary of State for Digitalisation and Artificial Intelligence in Spain, which held the EU Council presidency in late 2023, warned that excessive rules could hinder European start-ups in particular in the competition with established firms (Bertuzzi, 2023). German and French misgivings about putatively innovation-stifling regulation threatened to derail the whole AI Act until the German minister for digitisation ultimately threw his weight behind the compromise, just days before the final vote in the European Council (Klößner *et al.*, 2024). Competitiveness concerns, in short, were as acute as ever.

Euro-centric versus global responsibility

The environmental – and hence inherently global – dimension of AITs has become more prominent in AIT debates, also in Europe. Whether that would entail a willingness to curtail European AI development, rather than simply encouraging a resource-efficient version of it, is unclear as of yet.

Beyond that, rising geopolitical tensions surrounding digital technologies, and AI in particular, have further dented the idealism that featured, at least in rhetoric, in earlier Commission strategies. The conflicting perspectives of the actors involved in AI Act negotiations have further sidelined the interests of those not directly at the table. Previously, the EU sought to differentiate itself from the American and Chinese approaches to AITs, emphasising its high moral standards, which would automatically give ‘AI made in Europe’ an edge in global markets. While that argument was dubious all along, it has suffered further since the US White House published an executive order on

AI policy in October 2023, which listed many ethical problems to be circumnavigated that had also featured in EU debates (The White House, 2023). The suggestion that the EU would be a global force for good in AI policy simply through its ethically superior products has thus waned.

Conclusion

EU AI strategy continuously emphasises the importance of being able to compete with other major AI powers, such as the USA and China. This ambition to AI sovereignty, as I have called it, is one facet of the more encompassing EU digital sovereignty agenda that this special issue has put central.

Like digital sovereignty in general, AI sovereignty is underspecified and open to competing interpretations. It obscures the choices that AI policy will eventually entail: for example, should public and private actors cooperate to boost the EU's global AI competitiveness? Or should the EU leverage sovereignty in AI matters to grant citizens more control over the role of AITs in their lives, potentially against the commercial imperatives of large companies?

To establish what reality the rhetoric of AI sovereignty hides, this article has proposed three dimensions of AI sovereignty that, as I have argued, involve trade-offs: for whom it is to be won (and against whom it has to be defended), how it relates to the structural imperatives of a putative global economic AI race, and whether it should be used to benefit a wider circle of people than EU citizens – especially as a conscious policy goal, not just a serendipitous side effect. The articulation of these dimensions throws into sharper relief the political character of EU AI sovereignty, which the Commission commonly presents as knowing only winners.

Indeed, the trade-offs these dimensions highlight apply to digital sovereignty more generally. When digital technologies are developed with a profit-motive in mind (Srnicsek, 2017; Staab, 2019), it remains an open question how much their diffusion benefits citizens at large, rather than the small minority controlling or owning them.

To be sure, this is not a binary question, but one of degrees, shaped by political institutions and interventions (Acemoğlu & Johnson, 2023). In the same vein, the relative emphasis policy puts on citizen sovereignty and the interests of people beyond the EU knows many gradations. To the degree that the three dimensions proposed here travel to digital sovereignty at large, they underline that translating it into concrete policy creates winners and losers. As the digital sovereignty ambition is filled with life, it is important that especially stakeholders further removed from the centres of decisionmaking become conscious of this political dimension.

With respect to AI sovereignty, the analysis shows that the EU AI strategy *de facto* embraces a jurisdictional conception of sovereignty, meant to boost Europe's position in a global AI competition, with benefits mostly tailored to

stakeholders in the EU. This characterisation will sound familiar to observers of EU AI policy of the past years, in a way that underscores how particular interpretations can assume a natural ring. As I have shown, however, EU AI sovereignty could have been a very different project, prioritising different values and different relationships between citizens, public authorities, companies, and the rest of the world. It may not be surprising that the approach outlined in this article has so far carried the day. But it would underestimate the importance of public policy to assume that it flowed naturally from technological transformations, rather than from political choices.

Note

1. AI is not clearly circumscribed (Schuett, 2023). To accommodate this definitional blurriness, this article will distinguish between the actual cluster of ‘AI technologies’ (AITs, following Paul, 2022) on the one hand and ‘AI’ as a socially constructed policy object on the other. The EU’s own definition in the 2024 agreed version of the AI Act indicates the scope of what is discussed in this article: a machine-based system designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments.

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