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Constructing Security for the Twin Transitions

The Tragedy of EU Law at the Intersection of Climate and AI Governance

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Abstract

As the European Union (EU) advances a strategy of twinning the green and digital transitions, heightened expectations have been invested in the potential of artificial intelligence (AI) technologies to combat climate change. In practice, however, relying on AI to tackle the climate crisis generates a variety of security concerns, which have only rarely been the focus of critical attention. Adopting a narrative theoretical lens, this article critically examines how security is constructed and contested across three EU regulatory frameworks that sit at the intersection of climate and AI governance – the Critical Raw Materials Act, the AI Act, and the Digital Services Act. The article argues that these regulations fall within a genre of tragic governance. Each regulation romantically portrays the EU as a heroic values-driven actor, inspired by green, rights-based and democratic ambitions. In practice, however, these aspirations are compromised by the fatal flaw of restricted vision – security threats are identified, framed and addressed in ways that end up legitimating harmful patterns of exploitation affecting local communities impacted by resource mining, people on the move, and digital activists, whilst overlooking the logics of overconsumption, border externalisation, and data extractive informational capitalism that expose such actors to control and domination. At the same time, the article also identifies several footholds within each regulation that could serve as pathways for dominant understandings of security to be resisted – potentially paving the way for future reimaginings of EU law beyond its tragic present.

1. introduction

As the planet enters an 'era of global boiling',[1] heightened expectations have been invested in the potential of artificial intelligence (AI) technologies to understand and combat climate change. Under the banner of 'Sustainable AI',[2] technologies that rely on various forms of machine learning have been promoted for their potential to enable or accelerate climate mitigation and adaptation by, for example, integrating AI solutions into sectors as diverse as agriculture, transportation, and forestry, whilst seeking to address the detrimental environmental impacts associated with the AI lifecycle.[3] Yet, not only has the capacity of AI technologies to contribute to sustainability tended to be more an article of faith than empirical reality,[4] there has also been a tendency to neglect or at the very least understate AI's direct environmental footprint as well as the enabled emissions that arise from AI's entanglement in, for example, the acceleration of fossil fuel production.[5]

Underpinning the drive towards climate AI solutionism are a number of narratives that have been advanced by both corporate and public actors.[6] The European Commission, in particular, has sought to maximise the synergies whilst addressing some of the tensions that arise between the European Union's (EU) climate and AI ambitions, by promoting a narrative of 'twinning the green and digital transitions'.[7] According to this narrative, provided they are properly governed, digital technologies, including those that integrate various forms of AI, 'can help create a climate neutral, resource-efficient economy and society, cutting the use of energy and resources in key economic sectors and becoming more resource-efficient themselves'.[8] The emphasis of the twin transitions narrative is on digital technologies as a 'critical enabler' for attaining sustainability.[9] This emphasis is confirmed by the European Commission's recent *AI Continent Action Plan,* which is framed by the Commission as outlining 'a set of bold actions to make the EU a global leader in Artificial Intelligence' through the creation of AI Factories aimed at serving as 'one-stop shops driving advancements in AI applications' across various fields including the climate sector.[10] To the extent that sustainability concerns associated with the AI lifecycle are mentioned, they are confined to a brief paragraph on the energy and water footprint of data centres,[11] which appear as externalities to be managed.[12] The risk

1. Ajit Niranjan, ''Era of Global Boiling Has Arrived' says UN Chief as July set to be Hottest Month on Record' *The Guardian* (27 July 2023) https://www.theguardian.com/science/2023/jul/27/scientists-july-world-hottest-month-record-climate-temperatures accessed 6 June 2025.
2. Aimee van Wynsberghe, 'Sustainable AI: AI *for* sustainability and the sustainability *of* AI' (2021) 1 *AI and Ethics* 213.
3. See critically Paul Schütze, 'The Problem of Sustainable AI: A Critical Assessment of an Emerging Phenomenon' (2024) 4 *Weizenbaum Journal of the Digital Society* 1, 3; Sophia Falk and Aimee van Wynsberghe, 'Challenging AI for Sustainability: What Ought it Mean?' (2024) 4 *AI and Ethics* 1345; Barrie Sander, 'Confronting Risks at the Intersection of Climate Change and Artificial Intelligence: The Promise and Perils of Rights-Based Approaches' (2025) 43 *Netherlands Quarterly of Human Rights* 104; Barrie Sander, 'Addressing Climate Change in the Age of Artificial Intelligence: Three Registers of Human Rights Struggles' *Transnational Legal Theory* (2025) 16 Transnational Legal Theory 636.
4. See for example Kilian Vieth-Ditlmann, 'Fighting the Power Deficiency: The AI Energy Crisis' *Algorithm Watch* (6 February 2025) https://algorithmwatch.org/en/explainer-ai-energy-consumption/ accessed 6 January 2026 (referring to sustainability expert Vlad Coroamăhas, who coined the term 'Chronic Potentialitis' to refer to the fact that 'the AI industry is generally more interested in what *might* be than what *actually* is the case').
5. See for example Maddie Stone, 'Microsoft Employees Spent Years Fighting the Tech Giant's Oil Ties. Now, They're Speaking Out' *Grist* (8 May 2024) https://grist.org/accountability/microsoft-employees-spent-years-fighting-the-tech-giants-oil-ties-now-theyre-speaking-out/ accessed 22 October 2025. See also Enabled Emissions Campaign https://www.enabledemissions.com/ accessed 22 October 2025.
6. See generally Schütze (n 3).
7. European Commission, '2022 Strategic Foresight Report: Twinning the Green and Digital Transitions in the New Geopolitical Context' COM (2022) 289 final, (29 June 2022). See also European Commission, Joint Research Centre, 'Towards a Green & Digital Future: Key Requirements for Successful Twin Transitions in the European Union' (European Union 2022). On the institutional origins of the term 'twin transitions' in the EU, see Juan Sebastian Carbonell, 'In Search of the Twin Transition: The Limited Performativity of the "Green and Digital" Transitions in the European Automotive Industry' Joint Research Centre Working Paper Series on Labour, Education and Technology 2024/05 (European Commission 2024), 5-6.
8. European Commission (n 7) 3.
9. European Commission, 'The European Green Deal' COM (2019) 640 final (11 December 2019), 9.
10. European Commission, 'AI Continent Action Plan – Q&A' https://digital-strategy.ec.europa.eu/en/faqs/ai-continent-action-plan-qa accessed 12 June 2025.
11. European Commission, 'AI Continent Action Plan' COM (2025) 165 final, (9 April 2025), 10.
12. On the inadequacy of this 'externality' framing within the twin transition concept more generally, see Sara Garsia, 'The Environmental Costs of AI: A Shake-Up of the EU's Twin Transition' (*The Law, Ethics & Policy of AI Blog,* 18 February 2025) https://www.law.kuleuven.be/ai-summer-school/blogpost/Blogposts/the-environmental-costs-of-ai-a-shake-up-of-the-eus-twin-transition accessed 6 January 2026.

of this framing is that the twin transition becomes 'lopsided',[13] with sustainability considerations defined in overly-narrow terms and subordinated to the overriding objective of ensuring the EU becomes 'a leading AI continent'.[14]

An important concept that cuts across the EU's twin transitions narrative is 'security'. In recent decades, climate change has been increasingly framed as a security issue,[15] with a diversity of actors referring to the climate crisis as a security 'threat' or 'threat multiplier'.[16] AI technologies, for their part, have also become increasingly entangled with security concerns, whether in terms of the risks such technologies pose to different dimensions of security, or the ways in which such technologies are harnessed as part of efforts to address security threats in different societal settings.[17] Given this context, it is perhaps unsurprising that the European Commission frames its narrative of twinning the green and digital transitions around a sense of urgency arising from 'tectonic geopolitical shifts', most prominently Russia's military aggression against Ukraine, which 'confirm the need to accelerate the twin transitions' as part of a strategy aimed at fostering and reinforcing the EU's 'resilience' and 'open strategic autonomy'.[18] Indeed, for the European Commission, a comprehensive, future-oriented and strategic approach to the twin transitions requires recognising and navigating 'their inherently geopolitical nature' including their intersection with a diversity of security risks and concerns.[19]

Despite the significance of 'security' to the European Commission's twin transitions narrative, only rarely have questions of security at the intersection of climate change and AI technologies been the focus of critical reflection.[20] Against this background, this paper seeks to make two contributions to existing scholarship.

First, the paper maps different intersections of climate change and AI where contestations over security arise from an EU regulatory perspective. Three intersections are examined in particular.[21] The first concerns questions of security related to the *critical raw materials* required for the production of AI components such as semiconductors and computer hardware, the mining of which has been associated with a range of environmental concerns including soil contamination, deforestation, toxic waste disposal, water scarcity, and air pollution. The second concerns contestations over security related to the construction of *AI borders* which have been associated with a deterrence paradigm for governing migration, including but not limited to the prospect of people on the move in the context of climate change. The third concerns questions of security related to the entanglement of AI technologies with the shaping of *online discourse*, including concerns over the digital repression of climate activism and the spread of climate disinformation.

13. Jessica Commins and Kristina Irion, 'Towards Planet-Proof Computing: Ten Key Elements EU Data Centre Sustainability Policy Should Take Onboard' (*European Law Blog*, 18 March 2025) https://www.europeanlawblog.eu/pub/1jb3tzus/release/2 accessed 6 January 2026. See also Aude-Solveig Epstein, 'EU Environmental Law in the Digital Age: A Critical Outlook on the Twin Transition's Legal Structure' (2025) *European Journal of Risk Regulation*; and Charlotte Ducuing and Sara Garsia, 'A Critical Re-framing of the AI(s) and Sustainability Regulation Debate through the Lens of Law and Technology' (2025) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5569738 accessed 6 January 2026.
14. European Commission, 'AI Continent Action Plan' COM (2025) 165 final, (9 April 2025), 1.
15. See generally Matt McDonald, *Ecological Security: Climate Change and the Construction of Security* (CUP 2021), 44-93; and Eliana Cusato, 'Of Violence and (In)visibility: The Securitisation of Climate Change in International Law' (2022) 10 *London Review of International Law* 2023.
16. See for example UN Secretary-General, 'Climate Change and its Possible Security Implications: Report of the Secretary-General' UN Doc. A/64/350 (11 September 2009); and UN Security Council, 'Record of 8451st Meeting' S/PV.8451 (26 January 2019).
17. See for example Kyungmee Kim and Vincent Boulanin, *Artificial Intelligence for Climate Security: Possibilities and Challenges* (SIPRI 2023); and Marie Francisco, 'Artificial Intelligence for Environmental Security: National, International, Human and Ecological Perspectives' (2023) 61 *Current Opinion in Environmental Sustainability* 101250.
18. European Commission (n 7) 8.
19. European Commission (n 7) 1 and 8.
20. Notable exceptions include Kim and Boulanin (n 17); Francisco (n 17); and Andreea Belu, 'Twin Transition: From Green and Digital Towards Defense and Security' (*Green Web Foundation*, 19 August 2024) https://www.thegreenwebfoundation.org/news/twin-transition-from-green-and-digital-towards-defense-and-security/ accessed 6 January 2026.
21. The three intersections of climate change and AI examined in this paper are not intended to be exhaustive of the AI value chain but illustrative. An additional notable intersection, for example, concerns data centers, on which see generally Jessica Commins and Kristina Irion, 'Towards Planet Proof Computing: Law and Policy of Data Centre Sustainability in the European Union' (2025) *Technology and Regulation*.

Importantly, these intersections span the entire AI value chain, ranging from the *material* dimensions of AI's production to the *design and deployment* dimensions of AI's application.[22]

Second, for each intersection of climate change and AI, the paper examines applicable EU regulatory frameworks – the Critical Raw Materials Act (CRMA), the AI Act (AIA), and the Digital Services Act (DSA) – which serve as focal points for exploring how different conceptions of security are constructed and contested in practice. Applying a narrative theoretical lens,[23] the paper critically examines the discursive constructions of security embedded in these regulations, which each address different dimensions of the AI value chain. The paper reveals how certain security narratives have been included and prioritised within these regulatory frameworks, whilst others have been marginalised or excluded from view.

The central claim of the paper is that the EU regulations under examination fall within a genre of tragic governance. Each regulation romantically positions the EU as a heroic values-based actor, driven by green, rights-based and democratic ambitions. In practice, however, these ideals are undermined by the fatal flaw of restricted vision – security threats at the intersection of climate and AI governance are framed and addressed in terms that end up legitimating harmful dynamics of exploitation against local communities affected by resource mining, people on the move, and digital activists, whilst neglecting the logics of overconsumption, border externalisation, and data extractive informational capitalism that render such actors more susceptible to control and domination than protection and empowerment. At the same time, the paper also identifies a number of footholds within each regulation that provide a basis for dominant understandings of security to be contested. While such footholds are unlikely to completely overturn the dominant security narratives that underpin these regulations, they offer possibilities to construct counter-narratives that resist their inevitability – potentially creating space for future reimaginings of EU law beyond its tragic present.

This paper is written at a time of significant pressure for the EU's twin transition strategy. The rise of right- and far-right-wing parties in the last elections of the European Parliament in May 2024, as well as the increasing permeation of their policies across the wider political landscape, is raising questions about how particular security narratives rooted in green and digital regulations may enable abuses of power not only by right-wing authoritarian regimes, but also supposedly liberal centrist governments.[24] At the same time, external pressures stemming from Russia's ongoing military aggression in Ukraine and the Trump administration's threatened tariffs and withdrawal of security guarantees, have contributed to a shift in public discourse around the twin transitions. Under the banner of ensuring the EU's 'open strategic autonomy', funds initially earmarked for the green and digital transitions have been diverted towards the military industrial complex – a process that civil society groups have referred to as 'contributing to the securitisation of the "twin transition" phenomena and climate governance more generally'.[25] At the same time, a 2024 report written by former Italian Prime Minister Mario Draghi, which cautions that the complexity of the EU's regulatory

22. On the AI value chain, see generally Blair Attard-Frost and David G. Widder, 'The Ethics of AI Value Chains' (2025) *Big Data & Society* 1, 3 (preferring the term 'value chain' to 'supply chain' since the 'value chain ontology is [...] more capable of accounting for the production and consumption of material resources, such as the energy and water required to train the model and operate its data infrastructure, or the minerals and fuel required to build and transform the system's hardware components').

23. For elaboration of the narrative theoretical lens on which this paper relies, see Part 2 of the paper below.

24. For an excellent overview of these trends, see Rachel Griffin, 'EU Platform Regulation in the Age of Neo-Illiberalism' (2024) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4777875 accessed 6 January 2026. See also David Kaye, 'The Risks of Internet Regulation' (*Foreign Affairs*, 21 March 2024) https://www.foreignaffairs.com/united-states/risks-internet-regulation accessed 6 January 2026 (proposing to subject EU legislation to an 'Orban test', according to which 'lawmakers should ask themselves whether they would be comfortable if legislation were enforced by Hungary's authoritarian and censorial Prime Minister Viktor Orban'); and Anupam Chander, 'When the Digital Services Act Goes Global' (2023) 38 *Berkeley Technology Law Journal* 1067 (proposing to subject EU legislation to a 'Putin test', which would entail asked whether human rights concerns would arise were Russia to cut and paste EU legislation into Russian law).

25. EDRi, 'EU's Twin Transition in Crisis: Green Extractivism, Militarisation and Civil Society's Role' (*EDRi*, 4 December 2024) https://edri.org/our-work/eus-twin-transition-in-crisis-green-extractivism-militarisation-and-civil-societys-role/ accessed 6 January 2026; Andreea Belu, 'Twin Transition: From Green and Digital Towards Defense and Security' (*Green Web Foundation*, 19 August 2024); Sarah Chander and Seda Gürses, 'From Infrastructural Power to Redistribution: How the EU's Digital Agenda Cements Securitization and Computational Infrastructures (and How We Build Otherwise)', in AI Now, *Redirecting Europe's AI Industrial Policy: From Competitiveness to Public Interest* (AI Now, 2024) 42.

landscape is hampering innovation and competition,[26] has been embraced by European Commission President von der Leyen who responded with what the European Trade Union Confederation has referred to as an incoming 'bonfire of regulations' – a deregulatory drive that targets simplifying and/or scaling back key green and digital regulations.[27]

As the EU navigates this period of uncertainty and existential crisis, this paper seeks to contribute towards understanding whose security interests are prioritised within existing regulations at the intersection of climate change and AI, as well as whether possible footholds for contestation may be identified that could provide important avenues for resisting dominant understandings of security during this period of upheaval.[28]

The paper unfolds as follows. The paper begins by explaining the narrative theoretical lens through which EU law will be examined (**II**). The paper then turns to examine the construction of narratives of security within the CRMA (**III**), AIA (**IV**), and DSA (**V**) – critically exploring the dominant understandings of security articulated in each regulation, as well as possible footholds for resistance. The paper concludes with some critical reflections on the tragedy of EU law at the intersection of climate change and AI (**VI**).

2. Constructing Narratives of Security within EU Law

At the centre of this paper is the concept of 'security'. In his study of different discourses of security related to climate change, Matt McDonald begins with the observation that to the extent that it is possible to identify any general agreement over the meaning of the concept of 'security', it is only in the most general terms of 'freedom from danger of harm' or the 'preservation of a group's core values'.[29] In practice, the meaning of 'security' is highly contested, with rival understandings arising over whose security is at stake, what threats to security require addressing, which actors are capable or responsible for responding to them, and through what means.[30] Security, in other words, is *socially constructed* in the sense that 'different actors in a given setting compete to define what security is, how it is threatened and how it should be realized'.[31] McDonald, for example, identifies multiple competing climate security discourses, including:[32] *national* security, which positions the state as the primary object of security to be promoted primarily by attempting to adapt to manifestations of climate change through military and law enforcement establishments; *human* security, which positions vulnerable communities as the principal referent of security to be achieved primarily through strategies of mitigation and the redistribution of material resources; *international* security, which positions international society as the central object of security to be promoted primarily by means of international cooperation within international organisations through strategies of mitigation and adaptation; and *ecological* security, which positions the biosphere as the principal reference of security to be achieved primarily through a fundamental reorientation of political, economic and social structures that serve to separate people from the environment. This paper follows McDonald's social constructivist approach to security and puts it in conversation with a related perspective focused on the construction of *narratives* within legal settings.

26. Mario Draghi, *The Future of European Competitiveness* (European Commission, September 2024).
27. Anu Bradford and others, 'Europe Could Lose What Makes It Great: U.S. Pressure and Domestic Rancor Threaten the EU's Regulatory Superpower' (*Foreign Affairs*, 21 April 2025) https://www.foreignaffairs.com/europe/europe-could-lose-what-makes-it-great accessed 6 January 2026; and Ramsha Jahangir, 'What's Behind Europe's Push to "Simplify" Tech Regulation?' (*Tech Policy Press*, 24 April 2025) https://www.techpolicy.press/whats-behind-europes-push-to-simplify-tech-regulation/ accessed 6 January 2026. On the European Commission's simplification agenda, see generally: https://commission.europa.eu/law/law-making-process/better-regulation/simplification-and-implementaton/simplification_en accessed 12 October 2025.
28. See also Riccardo Fornasari and Rachel Griffin, 'Risky Business? Corporate Risk Management Obligations in Sustainability Due Diligence and Digital Platform Regulation' (2025) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5140807 accessed 6 January 2026.
29. McDonald (n 15) 19.
30. McDonald (n 15) 21.
31. McDonald (n 15) 23.
32. Matt McDonald, 'Discourses of Climate Security' (2013) 33 *Political Geography* 42; McDonald (n 15) 44-93.

It is often said that law is 'awash in storytelling'.[33] As Robert Cover famously observed, law is not merely 'a system of rules to be observed', but a 'resource in signification' through which individuals and communities seek to make sense of the world.[34] Importantly, storytelling involves more than the mere sequencing of events, but encompasses a process of narrative construction through which events are given shape and meaning. In this regard, as Skouteris explains, any intellectual process of narration is always 'positioned', entailing 'assumptions and choices (e.g. which facts to mention, how to tell the story, whose common knowledge to use, etc.) that are far from natural, mechanical, or neutral'.[35] From this perspective, narratives are multivalent, with the potential to 'demonstrate alignment with specific ideologies, serve as justification, interpret issues in society, and shape our ways of understanding and perceiving the world'.[36]

The study of law and narrative has given rise to a rich body of scholarship including perspectives focused on law and literature,[37] law and communication,[38] and law and cognitive studies.[39] Within these streams of scholarship, law has been characterised not only as the construction of narrative,[40] but also as rooted in prior narratives that locate and give it meaning.[41] In recent decades, narrative perspectives have gained traction within the field of international law in general,[42] as well as in fields related to the intersection of law and digital technology,[43] and the intersection of law and climate change, including environmental law,[44] human rights law,[45] and intellectual property law.[46]

Situated within this wider body of scholarship, this paper aims to critically explore the narratives of security that are constructed within EU legislation related to different intersections of climate change and

33. Anthony G. Amsterdam and Jerome Bruner, *Minding the Law* (Harvard University Press 2000), 115.
34. Robert Cover, 'Nomos and Narrative' in Martha Minow and others (eds), *Narrative, Violence, and the Law: The Essays of Robert Cover* (University of Michigan Press 1993) 95, 96 and 100. See also James Boyd White, *Heracles' Bow: Essays on the Rhetoric and Poetics of the Law* (University of Wisconsin Press 1985), 168 (characterising law 'as an art of language, as a way of creating versions of experience in cooperation or competition with others').
35. Thomas Skouteris, 'Engaging History in International Law', in J.M. Beneyto and D. Kennedy (eds), *New Approaches to International Law* (TMC Asser Press 2012) 99, 104. See also Hayden White, 'Postmodernism and Textual Anxieties', in Bo Strath and Nina Witoszek (eds), *The Postmodern Challenge: Perspectives East and West* (Rodopi BV 1999) 27, 38 ('The important distinction from a postmodern point of view is not between ideology and objectivity but between ideological constructions of history that are more or less open about the 'constructed' nature of their versions of history and more or less willing to make of their own modes of production elements of their contents').
36. Anne Saab, *Narratives of Hunger in International Law: Feeding the World in Times of Climate Change* (CUP 2019), 32. See also Peter Goldie, *The Mess Insight: Narrative, Emotion, and the Mind* (OUP 2012), 2 cited and quoted by Matthew Windsor, 'Narrative Kill or Capture: Unreliable Narration in International Law' (2015) 28 *Leiden Journal of International Law* 743, 744 ('It is more than just a bare annal or chronicle or list of a sequence of events, but a representation of those events which is shaped, organized, and coloured, presenting those events, and the people involved in them, from a certain perspective or perspectives, and thereby giving narrative structure – coherence, meaningfulness, and evaluative and emotional impact – to what is related').
37. Antoine De Spiegeleir, 'Climate Change Storytelling and Masterplots at the European Court of Human Rights' (2025) 19 *Law and Humanities* 93, 100 (distinguishing 'law *in* literature and law *as* literature') (emphasis in original); and Chris Hilson, 'The Role of Narrative in Environmental Law: The Nature of Tales and Tales of Nature' (2022) 34 *Journal of Environmental Law* 1, 4 (distinguishing 'looking for literature in law, looking at law in literature, and looking at literature to better understand law and to empathise with those marginalised by law').
38. De Spiegeleir (n 37) 102 (referring to 'law as a means to communicate, a tool to convey information (and many other things) from speaker to listener, from writer to reader (and *vice versa*)'); and Hilson (n 37) 5 (referring to narrative 'as a strategy used by movement actors – either alongside other language devices such as framing or in place of other strategies').
39. De Spiegeleir (n 37) 102 (discussing how 'cognitive studies underpin much of the scholarship on narrative in law').
40. Cover (n 34) 102 ('The very imposition of a normative force upon a state of affairs, real or imagined, is the act of creating narrative.').
41. Cover (n 34) 95-96 ('No set of legal institutions or prescriptions exists apart from the narratives that locate it and give it meaning. [...] nor can prescription, even when embodied in a legal text, escape its origin and its end in experience, in the narratives that are the trajectories plotted upon material reality by our imaginations.').
42. See for example Windsor (n 36); Lucas Lixinski, 'Narratives of the International Legal Order and Why They Matter' (2013) 6 *Erasmus Law Review* 2; and Andrea Bianchi, 'Terrorism and Armed Conflict: Insights from a Law & Literature Perspective' (2011) 24 *Leiden Journal of International Law* 1.
43. See for example Tomas Morochović, ''The Revolution will be Live-streamed': Dispute Settlement Mechanisms and the Construction of Narratives of the Internet as a Space for Political Expression' (2023) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4335221 accessed 6 January 2026.
44. See for example Hilson (n 37).
45. See for example De Spiegeleir (n 37).
46. See for example Saab (n 36) ch 3.

AI technologies. It is not uncommon for legislation to be read as narrative or in terms of the narratives constructed within it. As Chris Hilson explains, '[t]he stories may not leap out in a memorable way and may lack direct emotional content, but the hidden narratives they contain may be all the more powerful for that. These are stories in which law sets out how things are to be ordered'.[47]

To guide the analysis, this paper relies on the work of Anthea Roberts and Nicolas Lamp who define narratives as consisting of four main building blocks.[48] First, narratives *set the scene* for analyzing issues in a particular way. In other words, narratives are exercises in framing – with frames offering 'windows through which we see the world: they organize the central ideas on a complex issue, shaping what we see and do not see'.[49] From this perspective, framing may be understood in terms of 'principles of selection, emphasis and presentation', entailing 'little tacit theories about what exists, what happens, and what matters'.[50] By examining framing within EU law, it becomes possible to move beyond treating laws as mere responses to societal problems, and to instead perceive the ways in which laws actively construct and shape the very problems they seek to solve.[51]

Second, narratives *identify specific protagonists*, who are given more or less prominence within the stories elaborated through the law.[52] The actors identified tend to be afforded differing degrees of agency, with some taking on a more active role and others more passive. The protagonists may also be depicted in diverse ways, for example as winners or losers, or villains or victims.[53]

Third, narratives *elaborate a plot*, encompassing an account of the sequence of events, how different actors are implicated, as well as what connections arise between different actors and events over time.[54] In certain pieces of legislation, it may be possible to discern a 'masterplot', which refers to 'stories that we tell over and over in myriad forms and that connect vitally with our deepest values, wishes, and fears',[55] or as Sadler puts it, 'skeletal narrative structures which do not relate specific events occurring in specific places, but encode abstract configurations of causal relationships between events that can be used to structure accounts of specific happenings'.[56] The concept of masterplot is closely bound up with the concepts of 'the type', which refers to 'a recurring kind of character', as well as 'genre', which refers to 'a recurrent literary form' such as romance or tragedy.[57]

Hayden White famously identified four archetypal modes of emplotment – romance, tragedy, comedy, and satire – understood as 'the way by which a sequence of events fashioned into a story is gradually revealed to be a story of a particular kind'.[58] In this paper, the most relevant modes of emplotment are twofold: first, *romance*, which tends to involve 'a drama of the triumph of good over evil, of virtue over vice, of light over darkness, and of the ultimate transcendence of man over the world in which he was imprisoned';[59] and

47. Hilson (n 37) 10.
48. Anthea Roberts and Nicolas Lamp, *Six Faces of Globalization: Who Wins, Who Loses, and Why It Matters* (Harvard University Press 2021), 23.
49. Roberts and Lamp (n 48) 25. On framing in the field of international law, see for example Jens T. Theilen, 'Framing Migration in Human Rights: How the Reasoning of the European Court of Human Rights Legitimises Border Regimes' (2025) 27 *European Journal of Migration and Law* 66; Corina Heri, 'Mattering in the Anthropocene: the ECtHR's Domesticating Framing of Climate Change' (2025) *The International Journal of Human Rights* 1; and Anna Grear, ''Framing the Project' of International Human Rights Law: Reflections on the Dysfunctional "Family" of the Universal Declaration', in Conor Gearty and Costas Douzinas (eds), *The Cambridge Companion to Human Rights Law* (CUP 2012) 17.
50. Todd Gitlin, *The Whole World is Watching – Mass Media in the Making & Unmaking of the New Left* (University of California Press 1980), 6 cited and quoted in Theilen (n 49) 70.
51. Saab (n 36) 34.
52. Roberts and Lamp (n 48) 23.
53. Roberts and Lamp (n 48) 23.
54. Roberts and Lamp (n 48) 23 and 27.
55. H. Porter Abbott, *The Cambridge Introduction to Narrative* (3rd edn, CUP 2021), 52. On masterplots within the climate change caselaw of the European Court of Human Rights, see De Spiegeleir (n 37).
56. Neil Sadler, 'Myths, Masterplots and Sexual Harassment in Egypt' (2019) 24 *Journal of North African Studies* 247, 254 cited and quoted in Chris Hilson, 'Masterplots of Demand and Supply and the Energy Trilemma: Delaying the Transition' in Chris Bevan and David Gurnham (eds), *Law, Narrative and Masterplot: New Research Perspectives* (Routledge 2025).
57. Porter Abbott (n 55) 55.
58. Hayden White, *Metahistory: The Historical Imagination in Nineteenth-Century Europe* (John Hopkins University Press 1973), 7.
59. White (n 58) 9.

second, *tragedy*, in which the protagonist has a fatal flaw that leads to their downfall often due to their restricted vision, with their attention being 'fixed so obsessively on one point, one object of desire, that they do not pay heed to other factors in the overall context in which they are operating which may therefore produce consequences which their restricted vision fails to foresee'.[60]

Finally, the plot goes hand in hand with *a moral of the story*, which may be understood to refer to 'a normative assessment of what has happened, and prescriptions for what should be done about it'.[61] This building block very much connects back to the concept of framing with the chosen frame often setting the stage for the moral of the story and narrowing the range of prescriptions that are likely to follow.[62]

Importantly, the enactment of any piece of legislation, just like the deliverance of a legal judgment, does not mark the completion of a narrative, but rather the beginning of an interpretive exercise through which the legislation and the narratives within it acquire meaning in the world. As James Boyd White famously observed, 'The text does not conclude the difficulties of the real world, but begins a process, a process of its own interpretation. This is the process by which the law is connected to the rest of life'.[63] This is significant for two reasons that are relevant to this paper.

First, it is not uncommon for multiple narratives to be constructed within any given legislative framework – some of which may complement each other, whilst others may be in tension. In this regard, it is useful to note that each individual narrative that may be identified within a particular piece of legislation is inevitably 'value-laden' – telling 'one story to the detriment of others by silencing voices, setting characters aside, and – most importantly – by providing the authority of what is natural, what goes without saying'.[64] As Andrea Bianchi explains, 'Narrative determines the emphasis put on certain elements rather than others, and the silences of unspoken statements or untold truths, which are buried under disciplinary traditions or set aside on the basis of vested interests'.[65] With this in mind, when examining the narratives constructed within particular EU legal frameworks, this paper explores not only the narratives that appear to be dominant within such frameworks, but also certain 'traces… of discontent in the law' that may provide 'footholds' or 'immanent possibilities' through which to construct counternarratives,[66] as well as the silences and voices that have been marginalised or completely excluded from view.[67]

Second, while it may be possible to discern a dominant narrative within the text of a particular piece of legislation, such a narrative may evolve over time as the law is interpreted and applied to particular contexts in practice.[68] The legislative frameworks examined in this paper were each enacted relatively recently so the

60. Christopher Booker, *The Seven Basic Plots: Why We Tell Stories* (Bloomsbury Continuum 2004), 176. On tragedy in the context of AI governance, see Simon Chesterman, 'The Tragedy of AI Governance' (*Just Security,* 18 October 2023) https://www.justsecurity.org/89432/the-tragedy-of-ai-governance/ accessed 6 January 2026.

61. Robert and Lamp (n 48) 23 and 27. See also Hayden White, *The Content of the Form: Narrative Discourse and Historical Representation* (John Hopkins University Press 1987), 14 ('every historical narrative has as its latent or manifest purpose the desire to moralize the events of which it treats').

62. Robert and Lamp (n 48) 27.

63. Boyd White (n 34) 185.

64. Andrea Bianchi, *International Law Theories: An Inquiry into Different Ways of Thinking* (OUP 2016), 295.

65. Bianchi (n 64) 292.

66. Dianne Otto, 'Decoding Crisis in International Law: A Queer Feminist Perspective', in Barbara Stark (ed), *International Law and Its Discontents* (CUP 2015) 115, 134 (referring to 'footholds'); and McDonald (n 13) 168 (referring to 'immanent possibilities'). See similarly Carmen G. Gonzalez, 'Environmental Justice, Human Rights, and the Global South' (2015) 13 *Santa Clara Journal of International Law* 151, 187 (suggesting that, by carefully parsing legislative frameworks, it may be possible to identify 'cracks in the edifice' that open up alternative emancipatory avenues for particular actors and interests); and Matthew Windsor, 'Counterstorytelling in International Economic Law', in Andrea Bianchi and Moshe Hirsch (eds), *International Law's Invisible Frames* (OUP 2021) 237, 242 (referring to 'counterstorytelling' as 'a specific strand of narrative jurisprudence, explicitly motivated by a desire to make the point of view of outsiders audible').

67. The method of 'searching for silences' has roots in feminist approaches to international law. See for example Hilary Charlesworth, 'Feminist Methods in International Law' (1999) 93 *American Journal of International Law* 379, 381-383.

68. The notion that it is possible to identify a dominant narrative within any given legislative framework, which may evolve over time through interpretation, reflects a practice-oriented view of the interpretative exercise, whereby interpretation is understood as an inevitably creative practice that constitutes the meanings that it purports to find through the usage of rules in practice. See generally Ingo Venzke, 'The Role of International Courts as Interpreters and Developers of the law: Working Out the Jurisgenerative Practice of Interpretation' (2011) 34 *Loyola of Los Angeles International and Comparative Law Review* 99, 115-122.

direction of their narrative arcs are yet to be fully realised. Nonetheless, through a critical examination of the framings and regulatory approaches adopted within each of the legal frameworks that form the focus of the analysis, this paper suggests how the modes of emplotment articulated within them are likely to evolve over time – shifting, in particular, towards a tragic narrative arc.[69]

3. Constructing Security Narratives concerning Critical Raw Materials

AI technologies are dependent on the physical extraction and consumption of natural resources for the construction of a range of hardware and infrastructure components, including semiconductors, computer chips, graphics processing units and central processing units.[70] The minerals extracted within the AI value chain span the periodic table, including rare earth elements used in semiconductors,[71] silicon and gallium used in the construction of data centres,[72] as well as cobalt, lithium, aluminium, nickel, and copper (the CLANCs) used for energy storage, battery materials, and electrical wiring.[73] The average smartphone, for example, contains around 62 different types of metals.[74]

Many of the minerals within the AI value chain have been designated by States as 'critical' – a characterisation that is less a fixed condition than the product of a set of interacting variables.[75] Leonelli, for example, identifies a diversity of factors that have been relied upon to reflect the 'criticality' of these minerals including:[76] their strategic importance in environmental and economic terms; their association with considerable supply risks, which are often exacerbated by high levels of import dependence and vulnerable supply chains; the high degree of concentration in their extraction, with most lithium extracted in Chile and Australia, rare earth elements in China, and cobalt in the Democratic Republic of Congo, as well as in their processing, with China controlling 99% of the global refining capacity of rare earth elements, 56% of lithium, and 60% of cobalt;[77] and concerns that concentrations in the supply chain align with geopolitically unstable relationships between States considered 'unlike-minded' or 'systemic rivals'.

Importantly, the mining of many of these minerals has been associated with wide-ranging human rights and environmental concerns as well as socio-environmental conflicts.[78] The Business & Human Rights Resource Centre's *Transition Minerals Tracker*, for example, has documented 835 allegations of human rights

69. For discussion of the shift from romance to tragedy in literature, see Booker (n 60) 181-182.
70. OECD, *Measuring the Environmental Impacts of Artificial Intelligence Compute and Applications: The AI Footprint* (OECD Digital Economy Papers, No. 341, November 2022), 23.
71. Richard Pallardy, 'Is AI Driving Demand for Rare Earth Elements and Other Materials?' (*Information Week*, 11 February 2025) https://www.informationweek.com/machine-learning-ai/is-ai-driving-demand-for-rare-earth-elements-and-other-materials- accessed 6 January 2026.
72. International Energy Association, *Energy and AI* (IEA 2025), 213.
73. Zornitsa Todorova and others, 'Talent and Trade: The New Battlegrounds in AI' (*Barclays Investment Bank*, 1 May 2025) https://www.ib.barclays/our-insights/talent-and-trade-battlegrounds-in-ai.html accessed 6 January 2026.
74. Meadhbh Bolger and others, ''Green Mining' is a Myth: The Case for Cutting EU Resource Consumption' (European Environmental Bureau and Friends of the Earth Europe, 2021), 15.
75. Thea Riofrancos, 'The Security-Sustainability Nexus: Lithium Onshoring in the Global North' (2023) 23 *Global Environmental Politics* 20, 24.
76. Giulia C. Leonelli, 'Critical Raw Materials, the Net-Zero Transition and the 'Securitization' of the Trade and Climate Change Nexus: Pinpointing Environmental Risks and Charting a New Path for Transnational Decarbonization' (2025) *World Trade Review* 1, 4-5. See also Lorenzo Cotula, ''Critical Minerals': International Economic Law in a Global Resource Rush' (2023) 15 *Trade Law and Development* 19, 24-25 (referring to two structural factors that reflect the criticality of minerals: first, 'limited capacity in extraction and processing and the time required to bring new mines into production are expected to create supply bottlenecks in the short to medium term'; and second, available mining and processing capabilities for several critical minerals are highly concentrated in a few countries'); and Joris Teer and Mattia Bertolini, *Reaching Breaking Point: The Semiconductor and Critical Raw Material Ecosystem at a Time of Great Power Rivalry* (The Hague Centre for Strategic Studies 2022) (identifying ten pending threats to the critical raw material for semiconductor supply chain).
77. On the concentrated supply chain of critical minerals within the AI value chain, see also, Todorova and others (n 73); and Alejandro González and Bart-Jaap Verbeek, 'The EU's Critical Minerals Crusade: How the EU Trade Policy on Raw Materials Deepens the Environmental and Inequality Crises' (*SOMO*, 15 May 2024) https://www.somo.nl/the-eus-critical-minerals-crusade/ accessed 6 January 2026.
78. Bolger and others (n 74) ch 3.

and environmental abuse for the period 2010-2024 associated with the mining of eight key minerals for the energy transition (bauxite, cobalt, copper, lithium, manganese, nickel, zinc, and iron ore).[79] Moreover, a recent study of the global footprint of energy transition minerals (ETM) found that, across a sample of 5,097 ETM projects, 69% are located on or nearby land that qualifies as Indigenous peoples' or peasant land, with 62% of such projects located in high water risk locations.[80] At the same time, the global rush for critical minerals has been associated with considerable normative activity on the part of States, illustrating 'the role of law and legal change in sustaining complex processes of socioeconomic adjustment', including the twin transitions and the search for the raw materials they are deemed to require.[81]

Within the EU, a significant regulation in this context is the CRMA, which came into force on 23 May 2024. Article 1(1) CRMA makes clear that the objective of the regulation is 'to improve the functioning of the internal market by establishing a framework to ensure the Union's access to a secure, resilient and sustainable supply of critical raw materials, including by fostering efficiency and circularity throughout the value chain'.[82]

Adopting a narrative lens, it is possible to identify a dominant security narrative constructed within the CRMA. The CRMA's recitals *set the scene* by identifying 'the risk of supply disruptions' of critical raw materials as a threat to the functioning of the EU's internal market and twin transitions 'against the background of rising geopolitical tensions and resource competition'.[83] The regulation lists 34 critical raw materials (CRMs), selected based on their economic importance and supply risk.[84] Among them, 17 are characterised as 'strategic' (SRMs), based on, *inter alia*, their relevance for the green and digital transition, forecasted growth in demand, and difficulty of increasing production.[85] The primary object of security addressed by the CRMA is identified as the EU's 'economic resilience' and 'open strategic autonomy'.[86]

The key *protagonists* in the regulation are the European Commission and Member States who are cast in a somewhat heroic mould with proactively strengthening security of supply.[87] To ensure secure, resilient and sustainable access to SRMs, the Commission and Member States are required to strengthen different stages of the value chain to meet a set of benchmarks, aimed at increasing the EU's domestic capacity (extracting 10%, processing 40%, and recycling 25% of the EU's annual consumption of SRMs by 2030) and diversifying the EU's imports (such that no single third country should account for more than 65% of the EU's annual consumption of each SRM by 2030).[88] To meet these benchmarks, the CRMA adopts a process of 'derisking', a strategy that seeks to mobilise private capital to achieve its supply chain priorities by 'tinkering with risk and returns on private investments' both domestically and abroad.[89]

In the text, *the plot* is romantic – the European Commission and Member States heroically confronting vulnerabilities in the supply chain that represent an existential threat to their green and digital transitions, whilst striving to address any human rights and environmental concerns that may be encountered along the way. In particular, the CRMA's derisking strategy seeks to address growing demand in SRMs by prioritising supply-side solutions through 'Strategic Projects', which can be designated on the basis that they will

79. Business & Human Rights Resource Centre, *Transition Minerals Tracker: 2025 Global Analysis* (BHRRC, May 2025).
80. John R. Owen and others, 'Energy Transition Minerals and Their Intersection with Land-Connected People' (2023) 6 *Nature Sustainability* 203, 204-206.
81. Cotula (n 76) 32.
82. Regulation EU 2024/1252 of the European Parliament and of the Council of 11 April 2024 establishing a framework for ensuring a secure and sustainable supply of critical raw materials and amending Regulations (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1724 and (EU) 2019/1020 (Critical Raw Materials Act) [2024] OJ L2024/1252, art 1(1).
83. Recital (1) CRMA.
84. Article 4 and Annex II, Section 2 CRMA.
85. Article 3 and Annex I, Section 2 CRMA.
86. Recital (4) CRMA.
87. Recitals (11)-(12) CRMA.
88. Article 5(1) CRMA.
89. Ioannis Kampourakis, 'Market Instrumentalism and Extractivism in the Pursuit of Domestic Green Growth: Unpacking the Critical Raw Materials Act' (*Verfassungsblog*, 18 January 2024) https://verfassungsblog.de/unpacking-the-critical-raw-materials-act/ accessed 6 January 2026.

make a meaningful contribution to the EU's security of supply of SRMs, be technically feasible, and be implemented sustainably.[90] Strategic Projects within the EU must have cross-border benefits, whilst those in third countries must add value locally.[91] By framing the threat primarily in terms of insecurity in the supply of raw materials, *the moral* of the dominant narrative constructed within the CRMA becomes one in which supply-side solutions should be prioritised as part of an effort to enable the EU to maintain a strategy of privatised green growth.

As the CRMA begins to be implemented, however, I contend that this supply-side derisking strategy will reveal the restrictive vision of the EU and provide the roots for the narrative arc to evolve away from romance towards tragedy. In particular, the pursuit of privatised green growth within the CRMA raises concerns that the EU will in fact perpetuate colonial patterns of extractivism both within and beyond the EU under the banner of securing the Union's 'economic resilience' and 'open strategic autonomy'. In other words, the EU's restricted supply-side vision for pursuing the green transition will become complicit in green coloniality, undermining the very sustainability it seeks to promote.[92] The roots of this narrative transformation are already identifiable in the text of the CRMA itself.

First, the CRMA's provisions concerning the status of Strategic Projects suggest that the EU's security of supply interests will override those of affected communities. Once designated, Strategic Projects benefit from being considered in the 'public interest' and can attain the status of 'overriding public interest' provided all conditions set out in Directives related to water policy, the conservation of natural habitats and of wild fauna and flow and the conservation of wild birds are met.[93] Strategic Projects also benefit from: an accelerated permit-granting process that must be carried out in 'the most rapid way possible'; being treated as 'urgent' within all dispute resolution procedures related to the project;[94] and activities that seek 'to accelerate and crowd-in private investments' for their implementation.[95] Taken together, these provisions signal a clear prioritisation of EU regional security in the supply of SRMs and corporate security through the reduction of risks on investment, at the potential expense of other affected rightsholders, including indigenous communities, who are likely to lack sufficient time, information or resources to effectively navigate expedited permitting processes.[96]

Second, the CRMA's provisions on Strategic Partnerships with third countries are relatively weak when read together with wider EU practices in the sphere of international trade law. The CRMA envisages the establishment of a European Critical Raw Materials Board,[97] which is tasked with periodically discussing which third countries could be prioritised for the conclusion of 'Strategic Partnerships' based on a range of criteria such as their potential contribution to security of supply and resilience of CRMs and whether and

90. Article 6(1)(a)-(c) CRMA. Article 6(1)(c) makes clear that 'implemented sustainably' includes 'the monitoring, prevention and minimisation of environmental impacts, the prevention and minimisation of socially adverse impacts through the use of socially responsible practices including respect for human rights, indigenous peoples and labour rights, in particular in the case of involuntary resettlement, potential for quality job creation and meaningful engagement with local communities and relevant social partners, and the use of transparent business practices with adequate compliance policies to prevent and minimise risks of adverse impacts on the proper functioning of public administration, including corruption and bribery'. See also Recital (17) CRMA.

91. Article 6(1)(d)-(e) CRMA.

92. See for example Benjamin Nurkić and Nedim Hogić, 'Lithium, Law, and the Limits of EU Sustainability: The EU's Corporate Sustainability Framework and Non-EU Countries' (*Verfassungsblog*, 28 August 2025) https://verfassungsblog.de/lithium-law-and-the-limits-of-eu-sustainability/ accessed 6 January 2026 (discussing opposition to the European Commission's strategic partnership on critical raw materials with Serbia, ultimately concluding that '[c]itizens who perceive their government as incapable or unwilling to protect the environment will struggle to trust the EU if they see that it doesn't act as a normative power but a resource thief').

93. Article 10(2) CRMA.

94. Article 10(3) and (5) CRMA.

95. Article 15(1) CRMA.

96. Ioannis Kampourakis, 'A Post-Neoliberal European Order? Public Purpose and Private Accumulation in Green Industrial Policy' (2025) *Modern Law Review* 1, 15-16; Sanja Bogojević, 'The European Green Deal, the Rush for Critical Raw Materials, and Colonialism' (2024) 15 *Transnational Legal Theory* 600, 610. See also ClientEarth, 'Complaint to the European Ombudsman: Failure to Reply to a Confirmatory Application and to Grant Access to Documents on the Environmental and Social Sustainability of Critical Raw Material Projects Applying for the Status of Strategic Projects under the CRMA' (July 2025).

97. Article 35(1) CRMA.

how a partnership could contribute to local value.[98] These partnerships are envisioned as a means for the EU to establish 'a critical raw materials club' for 'working with like-minded partners to collectively strengthen supply chains and diversifying from single suppliers for critical input'.[99] To date, the EU has entered into 14 Strategic Partnerships with other States concerning raw materials.[100]

While promising on paper, it is important to read these provisions together with wider measures that have been adopted by the EU in recent years that constrain export restrictions of resource-rich countries by deploying World Trade Organisation (WTO) law, Free Trade Agreements, and unilateral trade defence to ensure that EU industries have secure access to raw materials.[101] As González and Verbeek explain, these practices amount to a variant of 'green mercantilism', whereby the EU effectively weaponizes its trade policy to secure access to raw materials whose extraction causes significant environmental impacts in resource-rich States in the Majority World, whilst undermining the ability of those countries to promote their own domestic processing, thereby relegating them to 'mere sources of raw materials'.[102] The result, as Robinson observes, is 'a gigantic double standard: no 'strategic autonomy' for developing countries with large reserves of critical raw materials but lots of room for EU member states to protect and subsidise their own mining while importing the shortfall at will on terms dictated by commodities clubs made up of OECD countries'.[103]

The tragedy of the CRMA, therefore, is that in its blinkered fixation on achieving open strategic autonomy and resilience through green growth, the EU is likely to end up reinscribing a form of resource colonialism – with significant risks to the environments and livelihoods of local communities in the AI value chain – under the banner of advancing the EU's twin transitions.

Despite the prioritisation of EU regional security and corporate security interests within the CRMA, the regulation also contains a number of footholds that may be relied upon to resist the force of such interests, at least to a certain degree. First, recognition of a project as 'strategic' is subject to the requirement that it 'be implemented sustainably', which includes monitoring, preventing and minimising environmental impacts and minimising socially adverse impacts through socially responsible practices such as respect for human, indigenous people and labour rights, in particular in the case of involuntary resettlement.[104] Annex III CRMA lists a diversity of international instruments that shall be taken into account to determine whether this criterion is fulfilled, including the UN Guiding Principles on Business and Human Rights.[105] Second, applications for designation of a project as 'strategic' must include, where appropriate, a plan containing 'measures to facilitate the meaningful involvement and active participation of affected communities', a plan 'to improve the environmental state of the affected sites after the end of exploitation', and a plan containing 'measures dedicated to a meaningful consultation of the affected indigenous peoples about the prevention and minimisation of the adverse impacts on indigenous rights and, where appropriate, fair compensation for those peoples, as well as measures to address the outcomes of the consultation'.[106] Third, the regulation makes clear that recognition of a project as 'strategic' shall 'not affect the requirements applicable to the relevant project or project promoter under Union, national or international law'.[107] Finally, the prioritisation of strategic partnerships by the European Critical Raw Materials Board must take into account whether

98. Article 37(1) CRMA.
99. Regulation (EU) 2024/1735 of the European Parliament and of the Council of 13 June 2024 on establishing a framework of measures for strengthening Europe's net-zero technology manufacturing ecosystem and amending Regulation (EU) 2018/1724 (Net Zero Industry Act) [2024] OJ L 2024/1735, recital (4).
100. European Commission, 'Raw Materials Diplomacy' https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/raw-materials-diplomacy_en accessed 20 June 2025. For discussion see Cotula (n 76) 38-40.
101. González and Verbeek (n 77); Kampourakis (n 89); Cotula (n 76) 46.
102. González and Verbeek (n 77).
103. Edward Robinson, 'Contradictions Abound in the EU's Critical Raw Materials Act' (*Land and Climate Review*, 14 July 2023) https://www.landclimate.org/the-eus-critical-raw-materials-act-is-filled-with-contradictions/ accessed 6 January 2026. See also Davina Osei, 'Africa is the Future, But Who Holds the Pen?' (*Governance and Development Advisory*, 24 July 2025) https://www.gdadvisory.org/blog/categories/climate-and-water-governance accessed 6 January 2026.
104. Article 6(1)(c) CRMA.
105. Annex III, para 5 CRMA.
106. Article 7(1)(d) and (j) CRMA.
107. Article 6(3) CRMA.

cooperation could improve a third country's ability to ensure adverse environmental impacts are addressed and socially responsible practices are utilised.[108]

Although these provisions may be relied upon to promote the human security interests of rightsholders within communities affected by raw materials mining, they are limited in important respects. First, references to 'minimising' adverse environmental and social impacts remain vague, with a lack of clarity over, for example, how different rights ought to be balanced and what 'meaningful engagement' requires.[109] As Kampourakis argues, such guarantees 'appear weak in the face of the known and well-established patterns of aggressive exploitation, human rights violations, and environmental degradation associated with raw materials extraction projects'.[110] Second, a number of these measures are procedural in nature, requiring dialogue and consultation rather than substantive protection. As Bogojević observes, it remains unclear how consultations 'would assist in resolving intractable conflicts where indigenous communities view the interests of the mining endeavour as being in direct conflict with their existence as a people', the main safeguard provided in the CRMA being fair compensation 'where appropriate'.[111] Similarly, the considerations taken into account by the Critical Raw Materials Board concern only assessing the prioritisation of strategic partnerships rather than whether they should be pursued in the first place.[112] Third, the criteria pertaining to whether a project is 'implemented sustainability' may be determined by means of private certification, with even merely 'committing to obtain certification' in the future being sufficient.[113] Yet, as González explains, the inclusion of this possibility 'disregards extensive research and evidence that indicates the lack of effectiveness of industry schemes and certification in reliably and consistently identifying risks of harm and preventing abuse', neglecting the flaws of such schemes such as their being affected by inherent conflicts of interest, operating with limited transparency, and leading to the adoption of weak standards.[114]

Ultimately, therefore, the CRMA represents the prioritisation of EU regional security in terms of ensuring a reliable supply in CRMs and SRMs, as well as corporate security in their investments, to the relative neglect of the human and ecological security of the communities and environments where mining takes place. The tragedy of the CRMA resides in its narrow framing, its gaze fastened on ensuring the EU's security of supply of raw materials – a framing that leads inexorably to supply-side solutions that seek to maintain the EU's resource-intensive privatised green growth strategy. The result is a notable silence within the CRMA, namely any consideration that addressing the climate crisis and biodiversity loss might require the EU to address its unsustainable consumption of resources through, for example, a binding target aimed at substantively reducing the EU's material footprint.[115]

4. Constructing Security Narratives concerning Climate Mobility

Beyond the climate implications of critical minerals extraction within the AI value chain, AI technologies also intersect with the climate crisis through their entanglement with architectures of surveillance as part of EU border management. Today, there are millions of people on the move,[116] influenced by a diversity of factors ranging from conflict and instability to economic and social considerations. In recent decades, one factor that has received increasing attention is climate change, with the heightened vulnerabilities stemming from the climate crisis influencing human mobility in the form of both internal and cross-border movements.[117]

108. Article 37(1)(c)(ii) CRMA.
109. Bogojević (n 96) 611-612.
110. Kampourakis (n 89).
111. Bogojević (n 96) 610.
112. Bogojević (n 96) 612.
113. See Articles 6(1)(c) and 30, Annex III, para 6, and Annex IV, para 2(a)-(b).
114. Alejandro González, 'Ten Reasons Why the European Commission's Proposed Critical Raw Materials Regulation is Not Sustainable – and How to Fix It' (*SOMO Position Paper*, May 2023), 5.
115. González and Verbeek (n 77).
116. The term 'people on the move' is used as an inclusive term that seeks to capture the complexities of human migration and how technologies of migration management are experienced. See Petra Molnar, 'AI in Border Control and Migration: Techno-Racism and Exclusion at Digital Borders', in Regine Paul and others (eds), *Handbook on Public Policy and Artificial Intelligence* (Edward Elgar 2024) 307, 317-318.
117. On narratives surrounding 'climate migration', see generally European Commission Joint Research Centre, *Navigating Migration Narratives: Research Insights and Strategies for Effective Communication* (European Union 2025), 20-24.

The EU's rhetoric concerning climate mobility has evolved over time.[118] When the EU initially took an interest in this topic in the 2000s, it adopted an alarmist narrative that reflected the wider international discourse on climate mobility during that period.[119] In a 2008 paper, for example, the European Commission predicted that climate change would become 'one of the major drivers' that could lead to 'millions of "environmental" migrants by 2020', with the result that 'Europe must expect substantially increased migratory pressure'.[120] From at least the 2010s onwards, this narrative shifted both globally and in the EU towards 'a rather reserved, pragmatic and less doom-laden approach'.[121] This shift reflected a growing body of evidence that challenged many of the predictions that had fed the alarmist narrative, the most significant realizations suggesting that:[122] first, the vast majority of climate mobility occurs internally within single States or cross-border within regions and sub-regions of the Majority World; and second, making precise predictions about future climate mobility is very challenging due to the complex combination of driving factors potentially at play, a lack of reliable data, and limitations of climate models.

The EU's evolving perceptions of climate mobility influenced the emergence of a dual policy paradigm: first, a *deterrence paradigm*, aimed at blocking and discouraging international mobility, including but not limited to climate mobility, through strengthening the EU's borders and externalizing them through, for example, helping to orchestrate pullbacks by third States;[123] and second, an *adaptation paradigm*, focused on supporting people *in situ* through development cooperation tools related to climate change adaptation within the Majority World.[124] As Matthew Scott explains, these two paradigms are connected through their unified focus on externalization, with the violent borders of the EU 'extended through soft diplomacy in the form of development cooperation and climate change adaptation, yet also maintained in conventional forms of border security'.[125]

It is against this backdrop that the EU and its Members States have been increasingly turning to AI technologies for the purposes of border management. AI tools are already in use, being tested, or will be deployed in the future across the entire migration cycle, ranging from profiling and identifying people on the move to predicting migration flows and surveilling borders.[126] During the 2015-2020 period, the EU allocated more than €7.7 billion to the management of European borders,[127] with more than €250 million provided to 49 projects seeking to develop border technologies between 2014 and 2022.[128] Much of the EU's investment in AI border infrastructures is outsourced via contracts to private companies.[129] In this regard, not only have EU agencies such as Frontex experienced increasing budgets in recent years, but also the most substantial expenditure has been allocated towards digitalization. Statewatch, for example, reported that Frontex's 2023 procurement plan included €260 million for IT systems and an additional €180 million for maritime and land border surveillance equipment.[130] These allocations have been made amidst a growing tendency on the part of Frontex to advance an alarmist framing of climate mobility as an existential threat to the EU that

118. See generally Matthew Scott, 'Adapting to Climate-Related Human Mobility into Europe: Between the Protection Agenda and the Deterrence Paradigm, or Beyond?' (2023) 25 *European Journal of Migration and Law* 54, 63-68; Lucia Wirthová, 'Environmentally Driven Migration in EU Discourse: Norms, Policies and Realities' (2024) 6 (1) *UCL Open Environment* 1 https://journals.uclpress.co.uk/ucloe/article/id/1975/ accessed 6 January 2026; and Lorenzo Figoni and others, *Climate Change Knows No Borders* (Action Aid 2024), 8-27.
119. Scott (n 118) 63-64; Wirthová (n 118) 2; and Figoni and others (n 118) 8-9.
120. European Commission, 'Climate Change and International Security' *Paper from the High Representative and the European Commission to the European Council* S113/08 (2008), 4.
121. Wirthová (n 118) 6. See similarly Scott (n 118) 66; and Figoni and others (n 118) 15.
122. Scott (n 118) 55 and 66; Wirthová (n 118) 6; Figoni and others (n 118) 3 and 10-11. See also European Commission Joint Research Centre (n 114) 20-24.
123. Scott (n 118) 61-63; Wirthová (n 118) 6-10; Figoni and others (n 118) 13-16.
124. Scott (n 118) 66-68; Wirthová (n 118) 6-10; Figoni and others (n 118) 11-12 and 15-16.
125. Scott (n 118) 68.
126. See for example Alberto Rinaldi and Sue Anne Teo, 'The Use of Artificial Intelligence Technologies in Border and Migration Control and the Subtle Erosion of Human Rights' (2025) 74 *International and Comparative Quarterly* 1, 4-10.
127. European Commission, *EU Security Market Study: Final Report* (31 May 2022), 39.
128. EuroMed Rights and Statewatch, *Europe's Techno Borders* (July 2023), 6.
129. Chander and Gürses (n 22) 44.
130. 'Frontex to Spend Hundreds of Millions of Euros on Surveillance and Deportations' (*Statewatch*, 24 April 2023) https://www.statewatch.org/news/2023/april/frontex-to-spend-hundreds-of-millions-of-euros-on-surveillance-and-deportations/ accessed 6 January 2026, cited in Chander and Gürses (n 25) 44.

requires urgent action including new forms of technological surveillance.[131] The EU Pact on Migration and Asylum, which entered into force on 11 June 2024, cements these trends by ushering in what civil society groups have termed 'a deadly new era of digital surveillance, expanding the digital infrastructure for an EU border regime based on the criminalisation and punishment of migrants and racialized people'.[132]

A significant legislative initiative in this context is the EU's AIA, which entered into force on 1 August 2024 (with the applicability of its provisions applying gradually over time). Article 1(1) makes clear that the objective of the regulation is 'to improve the functioning of the internal market and promote the uptake of human-centric and trustworthy artificial intelligence (AI), while ensuring a high level of protection of health, safety, fundamental rights enshrined in the Charter, including democracy, the rule of law and environmental protection, against the harmful effects of AI systems in the Union and supporting innovation'.[133]

Adopting a narrative lens, it is possible to identify a dominant security narrative constructed within the AIA with respect to the provisions that apply in the sphere of border control and migration management. The recitals to the AIA *set the scene* by describing AI as 'a fast evolving family of technologies that contributes to a wide array of economic, environmental and societal benefits across the entire spectrum of industries and social activities', but which also 'may generate risks and cause harm to public interests and fundamental rights that are protected by Union law'.[134] The balancing act of the AIA is therefore 'to foster the development, use and uptake of AI in the internal market that at the same time meets a high level of protection of public interests', such that AI becomes 'a human-centric technology' and serves 'as a tool for people, with the ultimate aim of increasing human well-being'.[135] To this end, the AIA outlines a 'risk-based approach', which seeks to 'tailor the type and content of [...] rules to the intensity and scope of the risks that AI systems can generate'.[136]

In terms of the *protagonists* within the AIA, the regulation creates tiered obligations for different actors depending on their role in the supply chain, including providers, deployers, distributors, and importers.[137] Within the border and migration context, the EU and its border agencies are the key actors, together with the private entities that help develop relevant AI systems. Notably, the recitals of the AIA place particular emphasis on human security by recognising that AI systems used in migration, asylum and border control management can 'affect persons who are often in particularly vulnerable positions and who are dependent on the outcome of the actions of the competent public authorities', such that 'the accuracy, non-discriminatory nature and transparency of the AI systems used in those contexts are therefore particularly important to guarantee respect for the fundamental rights of the affected persons'.[138] For the EU, it is the human vulnerability of people on the move that makes it appropriate to classify a number of systems used in migration and border control as 'high risk'.[139] In this part of the text, the *plot* once again begins in a romantic mould, with the EU cast in heroic terms as addressing the risks that may arise from the use of AI systems in migration and border contexts, with a particular concern for the human security of people on the move. This sets the scene for the moral of the story to potentially become one of upholding and prioritising the rights of people on the move in light of the risks posed by AI systems.

131. See generally Leah Owen, 'Building "Fortress North": How do Global North States and Institutions Develop Militarised Border Regimes in a Changing Climate' (2025, *draft manuscript on file with author*).
132. #ProtectNotSurviel, 'The EU Migration Pact: A Dangerous Regime of Migrant Surveillance' (April 2024) https://picum.org/blog/the-eu-migration-pact-a-dangerous-regime-of-migrant-surveillance/ accessed 6 January 2026. See similarly Aphrodite Papachristodoulou, 'Euphemisms of Success: AI Technology in European Border Management and the Rights of Migrants at Sea' (2025) 16 *European Journal of Legal Studies* 117, 138-144.
133. Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act) [2024] OJ L2024/1689, art 1(1).
134. Recitals (4)-(5) AIA.
135. Recitals (6) and (8) AIA.
136. Recital (26) AIA.
137. Laura L. Cabrera and Iverna McGowan, 'A Series on the EU AI Act: Pt. 1 – An Overview' *CDT Europe* (March 2024), 5-6.
138. Recital (60) AIA.
139. Recital (60) AIA.

Yet, despite this framing, the AIA incorporates a series of *legal holes*, which make clear that its narrative arc is more closely aligned with tragedy than romance. In his analysis of tragedy in literature, Booker observes how the protagonist is often represented as a 'divided self', with one part of their personality striving against another – a struggle between the 'light' and 'dark' impulses of their character, with the former eventually succumbing to the latter.[140] It is in this tragic vein that the EU, confronted with a choice between adherence to fundamental rights and the imperatives of regional border security, wrestles with and is ultimately unable to resist the temptation to prioritise the latter through provisions that align the AIA with the restrictive vision of the prevailing deterrence paradigm that pervades its border management architecture more generally. The *moral* of the dominant narrative constructed within the AIA, in other words, ultimately becomes one that ends up sacrificing the security of people on the move in favour of a deterrence-driven regional border strategy.

In particular, there are two types of legal holes that make an appearance in the AIA: first, legal *black* holes, where an exception is built into the regulation with the aim of ensuring that the EU's border management system is excluded from legal duties and/or legal accountability with respect to AI systems;[141] and second, legal *grey* holes, where legal constraints *are* incorporated into the regulation, but in ways that create only the appearance of checks on AI systems within the EU's border management regime.[142] Taken together, these legal holes construct an AI frontier of exceptionalisation – people on the move are recognised as vulnerable in the recitals of the AIA only to be made more legible to surveillance and less visible to fundamental rights protection in the regulation's substantive provisions.

In terms of *legal black holes*, most prominent is Article 2(3) AIA which enables Member States to exclude themselves from the rules of the regulation where AI systems are used 'exclusively for military, defence or national security purposes'.[143] Concerns have been raised that Member States may abuse this provision, for example by invoking it beyond the confines of national security within border control contexts, effectively codifying impunity for the unfettered deployment of AI systems in such settings.[144] In addition, there are notable AI systems utilised within border control that have been omitted from the list of 'high-risk' AI systems in Annex III and therefore fall beyond the purview of its rules. Examples include AI systems used to monitor and forecast migration movements and border crossing trends, which may be exploited to facilitate pushbacks or to coordinate pullbacks with third States.[145]

In terms of *legal grey holes*, it is notable that the list of prohibited AI systems in Article 5(1) AIA does not extend to the border and migration context, notwithstanding the specific vulnerabilities of people on the move acknowledged in the AIA's Recitals. For instance, the prohibition on the use of AI systems to infer emotions is limited to the areas of workplace and education institution,[146] with emerging cases of AI lie detectors at borders falling beyond its purview.[147] At the same time, the prohibition on real-time biometric identification systems is limited to 'publicly accessible spaces' for the purposes of law enforcement,[148] with

140. Booker (n 60) 175.
141. See generally Itamar Mann, 'Maritime Legal Black Holes: Migration and Rightlessness in International Law' (2018) 29 *European Journal of International Law* 347, 349-353 and 358-364; and Alicia G. Solow-Niederman, 'Algorithmic Grey Holes' (2023) 5 *Journal of Law & Innovation* 116, 119-121.
142. See generally Solow-Niederman (n 141) 121-130.
143. Article 2(3) AIA.
144. #ProtectNotSurveil, 'A Dangerous Precedent: How the EU AI Act Fails Migrants and People on the Move' (2024) https://edri.org/wp-content/uploads/2024/03/Statement-AI-Act-migration.pdf accessed 24 June 2025; Papachristodoulou (n 132) 136-137; Rosamund Powell, 'The EU AI Act: National Security Implications' (*CETaS*, August 2024) https://cetas.turing.ac.uk/publications/eu-ai-act-national-security-implications accessed 6 January 2026, 5-6.
145. Niovi Vavoula, 'Regulating AI at Europe's Borders: Where the AI Act Falls Shot' (*Verfassungsblog*, 13 December 2024) https://verfassungsblog.de/regulating-ai-at-europes-borders/ accessed 6 January 2026; Evelien Brouwer, 'EU's AI Act and Migration Control. Shortcomings in Safeguarding Fundamental Rights' (*Verfassungsblog*, 12 December 2024) https://verfassungsblog.de/eus-ai-act-and-migration-control-shortcomings-in-safeguarding-fundamental-rights/ accessed 6 January 2026. See also Rinaldi and Teo (n 126) 24.
146. Article 5(1)(f) AIA.
147. #ProtectNotSurveil (n 144) 1.
148. Article 5(1)(h) AIA.

the recitals confirming that such spaces should not include 'border control'.[149] Instead, Annex III classifies four types of AI systems utilised within border and migration management as 'high risk',[150] for which a series of rules concerning risk management, data quality and training, cybersecurity, transparency and oversight apply. Yet, the effectiveness of these rules in the border and migration context is undermined in two respects.

First, there are a number of exceptions built into the AIA that undermine protections and safeguards within the border control context. For example, the requirement that human oversight of high-risk AI systems for remote biometric identification systems must involve verification by at least two natural persons does not apply in the migration context 'where Union or national law considers the application of this safeguard to be disproportionate'.[151] The precise circumstances where this safeguard may be considered 'disproportionate' are left undefined, with Recital 73 merely referring to 'the specificities' of the areas of migration, border control and asylum.[152] In addition, high-risk systems within border control contexts are also excluded from a number of transparency requirements. Rather than registration in a publicly accessible EU database, such systems need only be registered in a secure non-public section of the database, accessible only to the Commission and national authorities.[153] Similarly, sensitive operational data in relation to border control activities is excluded from the requirement to publish a brief summary of the project on the website of the competent authority.[154] These provisions are problematic since, as van Den Meersche and Mignot-Mahdavi explain, 'concrete avenues for contestation in the digital world [are] conditioned upon transparency, understood as traceability', which are 'essential to contestation and collective agency, and hold the potential of disrupting power relations in the age of governance by data'.[155] Finally, some requirements are deferred, with large-scale IT systems used in the border and migration context excluded from the initial coverage of the regulation until 2030.[156]

Second, several dimensions of the enforcement framework that underpins the AIA fail to adequately safeguard the fundamental rights of people on the move. For example, Article 6(3)-(4) AIA permits providers to self-assess that their AI system should not be considered high-risk because it 'does not pose a significant risk of harm to the health, safety or fundamental rights of natural persons'.[157] As Vavoula observes, while the extent to which providers in the border and migration context will make use of this provision remains to be seen, 'it is likely that most AI systems in this field will be treated as not posing a high risk'.[158] Similarly, the requirement for high-risk AI systems to conduct an *ex ante* conformity assessment with the requirements set out in the AIA only entails following a procedure based on internal control rather than assessment by an external body.[159] By delegating conformity assessments to internal control, the AIA affords significant discretion to providers in making this judgment.[160] In this regard, the possibility for AI providers to benefit from a presumption of conformity with the requirements for high-risk AI systems by following standards developed by technical standardization bodies[161] has also raised concerns given that such bodies have traditionally been dominated by private sector actors with vested commercial interests as well as experts from engineering and computer science with little expertise in fundamental rights.[162] Critiques have also

149. Recital (19) AIA.
150. Annex III AIA.
151. Article 14(5) AIA.
152. Recital (73) AIA.
153. Article 49(4) AIA.
154. Articles 49(4) and 59(1)(j) AIA.
155. Dimitri van den Meersche and Rebecca Mignot-Mahdavi, 'Failing Where It Matters Most? The EU AI Act and the Legalized Opacity of Security Tech' (*Digital Constitutionalist*, 22 December 2022) https://digi-con.org/failing-where-it-matters-most/ accessed 6 January 2026.
156. Articles 111(1) and Annex X AIA.
157. Article 6(3)-(4) AIA.
158. Vavoula (n 145).
159. Article 43((2) AIA.
160. Vavoula (n 145).
161. Article 41(1) and (3) AIA.
162. Nathalie A. Smuha and Karen Yeung, 'The European Union's AI Act: Beyond Motherhood and Apple Pie?' in Nathalie A. Smuha, *The Cambridge Handbook of The Law, Ethics, and Policy of Artificial Intelligence* (CUP 2025) 228, 255-257.

been raised about the AIA's framework of *ex post* supervision, both in terms of the potential for fragmentation due to each Member State being required to establish or designate a separate market surveillance authority, as well as in terms of inadequacies in resources and skills that are likely to arise in practice.[163] At the same time, the previously mentioned transparency exceptions within the border and migration context will also render bottom-up enforcement of the AIA very challenging.[164]

The picture that emerges from the combination of legal black and grey holes that are threaded through the AIA in the border and migration context is what Rinaldi and Teo refer to as 'a two-tier model of rights protection offering a lesser degree of protection to refugees and migrants than to (EU) citizens'.[165] This differential approach not only reflects a prioritisation of the EU's regional security interests in the form of its deterrence paradigm, but also reinforces dynamics of coloniality within the EU's border regime. In particular, the AIA enables the creation of 'opaque zones of technological experimentation' that serve to 'perpetuate the so-called Global North as the locus of power and technological development, to be deployed in the Rest of the World'.[166] In this way, as Tschalär and others observe, the digitalization of the border 'risks feeding into the colonial narrative where migrants – and particularly asylum claimants and refugees racialized as non-white – tend to be seen as the 'barbaric' and 'uncivilized' other that needs to be controlled via transnational systems of data sharing and border surveillance'.[167] While the AIA may begin by positioning the EU in a heroic mould seeking to overcome and tame the risks posed by AI systems, in the migration context the EU ultimately gives in to the temptation to sacrifice fundamental rights protections at the altar of regional border security.

Despite the dominance of the EU's regional security interests within the AIA through a narrative that exceptionalises the EU's border control regime through a series legal black and grey holes, the regulation nonetheless contains a number of footholds that may be relied upon to resist this narrative.[168]

First, the AIA does not apply in a vacuum but remains subject to existing EU law, including data protection, consumer protection, and fundamental rights, to which the regulation is expressly considered 'complementary'.[169] These wider frameworks may be relied upon to resist abusive interpretations of the AIA by Member States. Reflecting on the General Data Protection Regulation and the Law Enforcement Directive in the context of examining the AIA's national security exception, for example, Vogiatzoglou explains that where an AI system relies upon personal data implicating private sector actors or law enforcement authorities subject to EU law, as will often be the case in the border and migration context, it must still adhere to data protection and fundamental rights standards regardless of the national security exception.[170] Moreover, it is also notable that the exception applies only to AI systems *exclusively* for military, defence or national security purposes, which may mean that where a system is also intended for law enforcement and public security purposes, it may simply be financially unfeasible to create two types of systems: one that is compliant with the AIA and the other that is not.[171]

Second, beyond resistance through recourse to wider areas of EU law, the AIA also leaves an opening for resistance within the domestic legal sphere. For instance, Member States are afforded discretion to comprehensively ban both the use of real-time and post remote biometric identification with respect to all actors and spaces despite the loopholes and exceptions carved into the AIA. To this end, the civil society

163. Ludivine S. Stewart, 'The Regulation of AI-based Migration Technologies Under the EU AI Act: (Still) Operating in the Shadows?' (2024) 30 *European Law Journal* 122, 133-134.
164. Stewart (n 163) 134-135. See also Brower (n 145) (observing how the AIA 'does not include a clear framework to hold to account the different actors involved, which may also hamper the right of redress for individuals').
165. Rinaldi and Teo (n 126) 3.
166. Molnar (n 116) 310 and 314.
167. Mengia Tschalär and others, 'Human Rights Risks of Migration Flow Predictions and Policy Implications Within the EU' (2025) 47 *Human Rights Quarterly* 87, 99.
168. See also Rinaldi and Teo (n 126) 25-29.
169. Recital (9) AIA.
170. Plixavra Vogiatzoglou, 'The AI Act National Security Exception: Room for Manoeuvres?' (*Verfassungsblog*, 9 December 2024) https://verfassungsblog.de/the-ai-act-national-security-exception/ accessed 6 January 2026.
171. Vogiatzoglou (n 170).

group European Digital Rights has published a legal and practical guide for communities and activists that advances a number of different tactics for domestically resisting the deployment of biometric mass surveillance where such possibilities remain possible under the AIA.[172]

While these footholds for resistance are important, it remains the case that the AIA adheres to a deterrence paradigm that prioritises the regional security interests of the EU at the expense of the human security interests and rights of people on the move. The result is a notable silence within both the AIA and the wider EU regulatory frameworks related to people on the move, namely any consideration that addressing climate mobility may require the creation of a separate protection status to ensure the equal protection of people on the move in the context of climate change compared to conventionally defined refugees.[173] In other words, through the restricted vision of its framing of migration in terms of the paradigm of deterrence, EU law neglects to consider any aspects of human security of people on the move that would address climate mobility towards the Union from a climate adaptation perspective within rather than beyond its borders.[174]

5. Constructing Security Narratives concerning Online Climate Discourse

AI technologies also intersect with the climate crisis through their entanglement with the shaping of online climate discourse. Reflecting on the state of climate discourse around the world, a recent report by the International Panel on the Information Environment concluded that there is currently a 'crisis of information integrity about climate science'.[175] This crisis is characterised not only by the intentional spread of inaccurate or misleading narratives about climate change, but also 'a crackdown on civic space for climate activists worldwide'.[176] According to Global Witness, an average of one land and environmental defender was killed every two days between 2012 and 2022,[177] while the UN Special Rapporteur on freedom of peaceful assembly and association has observed that 'over 70% of human rights defenders killed every year are involved in the protection of the environment or closely related work'.[178] Within the EU, legislation across a number of Member States is increasingly being harnessed to undermine climate activists, whether through their characterisation as eco-terrorists and/or the introduction of new criminal offences and harsher sentences concerning their work.[179]

Within this broader context, the concept of 'digital repression' has emerged to refer to 'actions directed at a target to raise the target's costs for digital social movement activity and/or the use of digital or social media to raise the costs for social movement activity, wherever that contestation takes place'.[180] While the overarching impact of social media platforms on climate activism remains contested,[181] there are at least

172. EDRi, 'How to Fight Biometric Mass Surveillance After the AI Act: A Legal and Practical Guide' (27 May 2024) https://edri.org/our-work/how-to-fight-biometric-mass-surveillance-after-the-ai-act-a-legal-and-practical-guide/ accessed 6 January 2026.
173. Papachristodoulou (n 132) 143-144; Wirthová (n 118) 10.
174. Figoni and others (n 118) 16; Scott (n 118) 70.
175. International Panel on the Information Environment, 'Information Integrity about Climate Science: A Systematic Review' (June 2025), 3.
176. ICNL and ECNL, 'Closing Civic Space for Climate Activists' (June 2020), 1.
177. Global Witness, *Decade of Defiance: Ten Years of Reporting Land and Environmental Activism Worldwide* (September 2022), 16. See also Global Witness, *Roots of Resistance: Documenting the Global Struggles of Defenders Protecting Land and Environmental Rights* (September 2025).
178. UN Special Rapporteur on the Rights to Freedom of Peaceful Assembly and of Association, 'Exercise of the Rights to Freedom of Peaceful Assembly and of Association as Essential to Advancing Climate Justice' UN Doc. A/76/222 (23 July 2021), para 20.
179. Michel Forst, 'State Repression of Environmental Protect and Civil Disobedience: A Major Threat to Human Rights and Democracy' *Position Paper of UN Special Rapporteur on Environmental Defenders under the Aarhus Convention* (February 2024), 8-18.
180. Jennifer Earl and others, 'The Digital Repression of Social Movements, Protest, and Activism: A Synthetic Review' (2022) 8 *Science Advances* 1, 1.
181. See for example Niels G. Mede and Ralph Schroeder, 'The "Greta Effect" on Social Media: A Systematic Review of Research on Thunberg's Impact on Digital Climate Change Communication' (2024) 18 *Environmental Communication* 801, 805 (observing how 'social media can both facilitate and challenge the visibility, reach, and success of environmental activism online') and 812 (concluding from a review of the 'Greta effect' on social media that social media platforms 'do not just give added voices to the climate change debate, nor do they mainly add confusion to the debate', but rather 'Thunberg's supporters and opponents personalize climate change [...] [at] the risk of diverting attention from the issue of climate change itself, and may impede constructive discourse about solutions to its consequences').

three categories of practices that give rise to forms of digital repression with respect to climate discourse. First, climate campaigners have encountered challenges with promoting their campaigns due to the *removal* of their content by social media platforms. When Twitter began to prohibit ads with political content, for example, climate activists encountered difficulties spreading their campaign work due to its categorization as 'political', while oil and gas companies were seemingly able to circumvent the ban.[182] Second, those working on climate research have had to contend with various forms of online *abuse*, including harassment and hate speech, leading many activists to self-censor out of fear for their security.[183] A survey of 468 climate scientists conducted by Global Witness, for example, found that 39% had experienced online harassment or abuse as a result of their climate work.[184] Finally, the affordances of social media platforms have been leveraged to promote climate *disinformation* at scale, both through the spread of *organic* content encompassing climate denial as well as distract and delay narratives, and *paid* content, for example in the form of greenwashing ads in the oil and gas sector.[185] Taken together, these practices of digital repression reflect a prioritization of corporate interests in enhancing profits at the expense of the personal and informational security of climate campaigners.

Importantly, AI technologies are very much entangled in these practices of digital repression, with online platforms relying considerably on AI as part of their content moderation practices, both in terms of content detection and removal, as well as content prioritization – including the algorithmic personalisation of organic content and the algorithmic microtargeting of paid advertisements.[186] In a survey of land and environmental defenders conducted by Global Witness, for example, two-thirds of those who reported experiencing online abuse and harassment suggested that various aspects of online platforms had exacerbated the harms they had suffered.[187] These included the algorithmic amplification of polarizing content, a permissive environment for the operation of automated accounts weaponized to target defenders with harassment campaigns, and the exploitation of monetization opportunities such as harnessing algorithmically targeted advertising for the spread of hate speech or disinformation.

An important legislative initiative in this context is the EU's DSA, which as of 17 February 2024 applies to all intermediary services that fall within its scope. Article 1(1) makes clear that the objective of the regulation is 'to contribute to the proper functioning of the internal market for intermediary services by setting out harmonized rules for a safe, predictable and trusted online environment that facilitates innovation and in which fundamental rights [...] are effectively protected'.[188]

Adopting a narrative lens, it is possible to identify a dominant security narrative constructed within the DSA in terms of the approach it adopts to the governance of content shared on online platforms. The recitals of the DSA *set the scene* by identifying three threats posed by intermediary services: first, a commercial threat to business innovation that may arise from divergent national laws addressing societal risks associated with such services;[189] second, a threat to 'society as a whole' that may result from the risks and challenges that arise from intermediary services in the form of, for example, illegal content and online disinformation;[190] and third, a threat to the fundamental rights of individuals if intermediary services are not managed in a responsible and diligent manner conducive to 'a safe, predictable and trustworthy online environment'.[191] To address these threats, the DSA adopts an approach that focuses primarily on three sets of *protagonists*,

182. BSR, *Building a High-Quality Climate Science Information Environment: The Role of Social Media* (June 2022), 21-22.
183. ICNL and ECNL (n 176) 7.
184. Global Witness, *Global Heating: How Online Abuse of Climate Scientists Harms Climate Action* (April 2023), 3-4.
185. See generally ISD, *Deny, Deceive, Delay (Vol. 3): Climate Information Integrity Ahead of COP28* (November 2023); and BSR (n 182).
186. Climate Action Against Disinformation, 'The AI Threats to Climate Change' (CAAD, 2024), 7-12; Beatriz Botero Arcila and Rachel Griffin, 'Social Media Platforms and Challenges for Democracy, Rule of Law and Fundamental Rights' (European Parliament, 2023), 51-55 and 78-80.
187. Global Witness, *Toxic Platforms, Broken Planet: How Online Abuse of Land and Environmental Defenders Harms Climate Action* (July 2025), 22-24.
188. Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market For Digital Services and amending Directive 2000/31/EC (Digital Services Act) [2022] OJ L 277, art 1(1).
189. Recitals (2) and (4) DSA.
190. Recitals (1) and (2) DSA.
191. Recitals (3) and (9) DSA.

namely: the European Commission and Member States; platforms and search engines, including very large online platforms and very large online search engines (VLOPs and VLOSEs, defined as those with over 45 million EU users per month); and the individuals who use such platforms.

Similar to the CRMA and AIA, the text of the DSA elaborates what initially appears to be a romantic *plot*, entailing a heroic attempt by the EU to steer the VLOPs and VLOSEs that have emerged as 'self-appointed dictators' of the digital public sphere towards becoming '*benevolent* dictators' through a set of rules and structures for how such platforms relate to their users and society at large.[192] The *moral* of the dominant narrative constructed within the DSA, therefore, is one that relies on a belief that the Commission and Member States will behave benevolently in steering platform power and that platform power can feasibly be steered towards benevolent ends without any significant degree of redistribution.

As the DSA begins to be implemented, however, it is suggested that the technocratic strategy of taming the beast of online platforms provides the roots for the narrative arc to evolve away from romance towards tragedy. Rather than confronting the power of States and corporations within the digital public sphere, the restricted vision of the DSA's regulatory approach risks entrenching the power of VLOPs and VLOSEs whilst leaving open notable avenues for States to steer such power in alignment with own security interests. As Rachel Griffin convincingly argues, the DSA's regulatory approach is fundamentally 'neo-illiberal' in nature: 'economically, it embraces marketized media governance and entrenches corporate power, while politically, it creates extensive possibilities for state censorship'.[193]

In terms of *State power*, the DSA incorporates a range of provisions that leave space for States to engage in legalized forms of digital repression including in the sphere of climate activism and climate discourse. First, the definition of 'illegal content' under the DSA includes content that is illegal under national law,[194] thereby affording leeway for States to utilise their domestic law to deem certain types of climate activist content illegal and subject to removal by platforms pursuant to the DSA's notice-and-takedown framework.[195] Second, the DSA not only envisages that States may have a role in reporting alleged pieces of illegal content, but also that State entities such as law enforcement authorities can be certified as 'trusted flaggers' whose reports must be 'given priority' and processed and decided upon 'without undue delay'.[196] In addition, there is nothing in the DSA to prevent State entities from informally pressurising platforms to remove content through alternative channels.[197] Given the increasing criminalisation and policing of peaceful climate movements, there is a risk that these procedures could be harnessed by States to supress forms of climate activism that they consider to be politically undesirable.[198] At the same, the significant liability risks that arise when online platforms fail to expeditiously remove illegal content arguably create incentives for intensifying reliance on automated forms of moderation at the likely expense of freedom of expression given algorithmic moderation's propensity to be 'biased, error-prone, and overinclusive'.[199]

In terms of *corporate power*, one of the core innovations of the DSA is to require VLOPs and VLOSEs to assess four categories of systemic risks stemming from the design, functioning and use of their services, for which they should implement appropriate mitigating measures.[200] The recitals to the DSA clarify that 'coordinated disinformation campaigns related to public health' fall within the scope of 'systemic risks', a category within which climate disinformation could reasonably be expected to fall.[201] In addition, the recitals explain that systemic risk assessments should focus on any systems that may contribute to such risks, 'including all the algorithmic systems that may be relevant, in particular their recommender systems

192. Cory Doctorow, 'Twitter and Interoperability: Some Thoughts From the Peanut Gallery' (*Deeplinks*, 25 January 2021) https://www.eff.org/deeplinks/2021/01/twitter-and-interoperability-some-thoughts-peanut-gallery accessed 6 January 2026.
193. Griffin (n 24) 1.
194. Article 3(h) DSA.
195. Articles 6(1) and 16 DSA.
196. Article 22 and Recital (61) DSA.
197. Griffin (n 24) 14.
198. Griffin (n 24) 16.
199. Griffin (n 24) 16.
200. Articles 34-35 DSA.
201. Recital (83) DSA.

and advertising systems, paying attention to the related data collection and use practices'.[202] The systemic risk assessment framework established by the DSA holds promise for addressing different dimensions of digital repression in the sphere of climate activism and climate discourse, providing a potential foothold for stronger safeguards against online abuse of climate scientists, the amplification of climate disinformation, or the hosting of greenwashing ads by very large online platforms.[203]

In practice, however, whether this promise will be fulfilled is uncertain and there is room for doubt. The risk assessments are to be undertaken in the first instance by the compliance divisions of the platforms themselves, before being independently audited and ultimately subject to scrutiny by the European Commission.[204] This enforcement structure gives rise to a triple concern: first, that internal compliance divisions will end up prioritising the corporate interests of efficiency-maximization and data-driven economic growth over public values;[205] second, that the dependency of auditors on a limited number of VLOPs and VLOSEs who are responsible for appointing them, together with the limited guidance that exists concerning the benchmarks to use for the audits themselves, may undermine the incentives and capacity of auditors to meaningfully assess whether their clients are in compliance with the DSA;[206] and third, that the Commission is likely to adopt a restrained enforcement strategy due to the likelihood of facing significant legal challenges from well-resourced corporations if more radical reforms are advanced.[207] In this regard, it is notable that the first systemic risk assessments and independent audit reports have already been critiqued for applying inconsistent methodologies,[208] while the Commission appears to be adopting a somewhat cautious enforcement strategy focused on shifting platform behaviour incrementally through dialogue.[209] As Griffin explains in the context of reflecting on the DSA's capacity to transform the algorithmic recommendation systems of VLOPs, the result is a framework that 'enlists companies to find technocratic solutions to particular problems identified in today's economies of visibility, rather than more significantly rethinking the commercial objectives and criteria according to which visibility is allocated', an approach that 'takes current logics of content curation as given, and endeavours only to address some obvious negative externalities'.[210] The tragedy of the DSA, therefore, resides in the EU's restricted vision for creating an accountable and rights-compliant online platform ecosystem – with its narrow focus on content moderation and risk reduction potentially serving to reinforce the centralisation of power in existing societally-dominant platforms at the expense of confronting the advertising-driven data extractivism that sustains them or nurturing a more pluralistic and less commodified platform landscape.[211]

202. Recital (84) DSA.

203. On promise of the DSA's systemic risk framework for addressing climate impacts, see generally, Rachel Griffin 'Climate Breakdown as a Systemic Risk in the Digital Services Act' *Hertie School, Centre for Digital Governance* (7 September 2023).

204. Articles 34, 35, 37 and 56(2) DSA.

205. Rachel Griffin, 'Governing Platforms Through Corporate Risk Management: The Politics of Systemic Risk in the Digital Services Act' (2025) 4 *European Law Open* 223, 243-244.

206. See generally Johann Laux and others, 'Taming the Few: Platform Regulation, Independent Audits, and the Risks of Capture Created by the DMA and DSA' (2021) 43 *Computer Law & Security Review* 1, 7-9; Giovanni De Gregorio and Oreste Pollicino, 'Auditing Platforms under the Digital Services Act' (*Verfassungsblog*, 3 September 2024) https://verfassungsblog.de/dsa-auditors-content-moderation-platform-regulation/ accessed 6 January 2026; and Julie E. Cohen and Ari E. Waldman, 'Introduction: Framing Regulatory Managerialism as an Object of Study and Strategic Displacement' (2023) 86 *Law and Contemporary Problems* i.

207. Griffin (n 205) 244-245. For a more optimistic analysis of the Commission's enforcement function in this context, see Martin Senftleben and others, 'How the European Union Outsources the Task of Human Rights Protection to Platforms and Users: The Case of User-Generated Content Monetization' (2023) 38 *Berkely Technology Law Journal* 933, 970-973.

208. See for example Mark Scott, '5 Things to Know about the Digital Services Act's First Risk Assessments and Audits' (*Tech Policy Press*, 11 December 2024) https://www.techpolicy.press/5-things-to-know-about-the-digital-services-acts-first-risk-assessments-and-audits/ accessed 6 January 2026; Peter Chapman, 'Advancing Platform Accountability: The Promise and Perils of DSA Risk Assessments' (*Tech Policy Press*, 9 January 2025) https://www.techpolicy.press/advancing-platform-accountability-the-promise-and-perils-of-dsa-risk-assessments/ accessed 6 January 2026; and David Sullivan, 'Systemic Risk Assessments Hold Clues for EU Platform Enforcement' (*Lawfare*, 11 February 20225) https://www.lawfaremedia.org/article/systemic-risk-assessments-hold-clues-for-eu-platform-enforcement accessed 6 January 2026.

209. Magdalena Jóźwiak, 'The DSA's Systemic Risk Framework: Taking Stock and Looking Ahead' (*DSA Observatory*, 27 May 2025) https://dsa-observatory.eu/2025/05/27/the-dsas-systemic-risk-framework-taking-stock-and-looking-ahead/ accessed 6 January 2026.

210. Rachel Griffin, 'The Law and Political Economy of Online Visibility: Market Justice in the Digital Services Act' (2023) *Technology and Regulation* 69, 77-78.

211. On the harms of data-extractivism in the online platform context, see generally, Amy Kapczynski, 'The Law of Informational Capitalism' (2020) 129 *Yale Law Journal* 1460 (referring to both *autonomy* concerns related to how data-extractivism may enable platforms to influence behaviour, as well as *political economy* concerns related to how data-extractivism may enable monopoly, inequality, and discriminatory hierarchy in ways that threaten democracy).

Similar to the CRMA and the AIA, the DSA includes a number of footholds that hold some potential for resisting the dominance of the national and corporate security interests threaded through the regulation. In terms of *State power*, the recitals of the DSA make clear that national laws must be in compliance with EU law including fundamental rights,[212] while Article 14(4) provides that intermediaries must act 'with due regard to the rights and legitimate interests of all parties involved, including the fundamental rights of the recipients of the service' when applying and enforcing their terms and conditions.[213] Read together with Article 53, which enables individuals and associations to lodge complaints with national regulators concerning non-compliance with the DSA, these references to fundamental rights might provide an opening for challenging rights-restrictive interpretations of the DSA by Member States.[214]

At the same time, in terms of *corporate power*, the DSA contains a range of transparency measures that may be harnessed by civil society groups and independent researchers including, for example, the obligation on VLOPs and VLOSEs to provide access to internal data on request to vetted researchers,[215] as well as to make publicly available a searchable repository for advertisements.[216] While enhancing transparency should not be viewed as a panacea, these provisions could provide important footholds not only for better understanding platforms and their relations with State entities, but also for pressuring platforms to more convincingly address systemic risks, including but not limited to those relevant to climate activism and climate discourse.[217]

Finally, it is important to acknowledge that the DSA does not apply in a vacuum – there are other legislative frameworks within the EU that operate in parallel to the DSA that may be understood as designed to enable redistribution of power within the online platform ecosystem, at least to a limited degree. The Digital Markets Act (DMA), for example, provides that large online platforms that qualify as 'gatekeepers' must adhere to a number of 'do's' and 'don'ts', which aim to make markets in the digital sector fairer and more contestable.[218] While a detailed assessment of these provisions lies beyond the scope of this paper, it is important to note that the DMA remains largely a pro-market, competition-centric response to the challenge of concentrated power within the social media landscape,[219] and one which is mostly concerned with 'competition *on the platform*, not competition *to the platform*'.[220] As such, while the DMA is a worthwhile effort,[221] it is likely to prove inadequate as a means of significantly redistributing platform power in the pursuit of greater media pluralism.[222]

Ultimately, therefore, the tragedy of the DSA remains in its adherence to a regulatory approach that leans towards entrenching the power of platforms within existing market logics. The result is a notable silence, namely any consideration that addressing digital repression may require a more fundamental restructuring of an online platform ecosystem that is underpinned by a business model designed to maximise advertising

212. Recitals (12) and (32) DSA.
213. Article 14(4) DSA.
214. For critical discussion see Rachel Griffin, 'Procedural Fetishism in the Digital Services Act' (2025) *European Journal of Legal Studies* 11, 50-51; and J.P. Quintais and others, 'Using Terms and Conditions to Apply Fundamental Rights to Content Moderation' (2023) 24 *German Law Journal* 88.
215. Article 40(4) DSA.
216. Article 39 DSA.
217. Griffin (n 214) 49.
218. For an overview of the DMA, see generally, Friso Bostoen, 'Understanding the Digital Markets Act' (2023) 68 *The Antitrust Bulletin* 263.
219. Rachel Griffin, 'Public and Private Power in Social Media Governance: Multistakeholderism, the Rule of Law and Democratic Accountability' (2023) 14 *Transnational Legal Theory* 46, 79.
220. Cristina Caffarra, 'Of Hope, Reality, and the EU Digital Markets Act' (*Tech Policy Press*, 6 May 2024) (emphasis in original) https://www.techpolicy.press/of-hope-reality-and-the-eu-digital-markets-act/ accessed 6 January 2026.
221. See for example EDRi, 'The DMA Is a Success, It Should Be Strengthened and Expanded' *EDRi* (16 October 2025) https://edri.org/our-work/the-dma-is-a-success-it-should-be-strengthened-and-expanded/ accessed 22 October 2025; and Margarida Silva, 'Digital Markets Act: Big Tech's Pushback Faces Up To A Bold EU' (*SOMO*, 30 July 2024) https://www.somo.nl/digital-markets-act-one-year/ accessed 16 October 2025.
222. On the limits of nurturing media pluralism via marketized solutions that focus on increasing competition between platforms, see generally, Griffin (n 219) 85-88.

revenue,[223] rather than a vision of online platforms as 'regulated oligopolists, whose dominance as online speech infrastructure is not to be replaced or contested'.[224]

6. Conclusion

The EU regulations examined in this paper fall within a genre of tragic governance. Each regulation frames and attempts to address particular security threats at the intersection of climate change and AI in terms that end up legitimating harmful dynamics of exploitation and obscuring the structural logics that underpin them. The CRMA's narrow concern with addressing supply-side vulnerabilities in critical raw material value chains as part of a strategy of green growth ends up legitimating colonial dynamics of extractivism both within and beyond the EU, whilst obscuring the importance of addressing the EU's unsustainable consumption of resources. The AIA's narrow concern for deterring people on the move as part of a strategy of externalising the EU's borders ends up legitimating harmful dynamics of technological experimentation through the creation of an exceptionalised AI frontier, whilst obscuring the importance of developing a system of climate mobility protection that enables climate adaptation within rather than solely beyond the EU's borders. The DSA's narrow concern for taming online platforms within the confines of existing market logics ends up legitimating corporate power and creating opportunities for state repression, whilst obscuring the importance of confronting the logics of data extractive informational capitalism that stifle climate activism and shape climate discourse in ways that undermine societal responsiveness to climate change.

To a certain degree, each regulation romantically positions the EU as a heroic values-based actor, driven by green, rights-based and democratic ambitions. However, this vocabulary ends up being merely performative – a rhetorical articulation of progressive aspirations that are ultimately unaccompanied by regulatory measures equipped to bring about structural change. Whether through the celebration of raw materials as critical for the green transition, the acknowledgement that people on the move are vulnerable subjects, or the demand for systemic risk mitigation by very large online platforms, these regulations trade in the currency of seemingly progressive goals without confronting the structures of colonial extractivism, border externalisation, and platform capitalism that ultimately serve to undermine them. The result is a set of laws that rhetorically invoke progressive ideals but administer continuity, leaving existing logics of overconsumption, migrant neglect, and platform dominance relatively unscathed. Rather than confronting these logics, EU law is revealed to reconstitute hierarchies – between Europe and the Majority World, between citizens and non-citizens, between platforms and society – through legal mechanisms of derisking, exceptionalisation, and corporate managerialism. Through this legal architecture, harms are not completely ignored, but managed in ways that render certain actors – resource-rich States, people on the move, digital activists – more susceptible to control and domination than protection and empowerment.

At the same time, each of the EU regulations examined in this paper incorporate footholds through which dominant understandings of security may be contested. In general, these footholds take the form of references to wider areas of international and EU law carved into the regulations themselves, as well as possibilities left open by the regulations to resist dominant conceptions of security within domestic legal settings. These footholds offer important avenues for challenging interpretations and applications of these regulations in ways that undermine rather than empower communities and individuals affected by resource mining, border surveillance, or platform governance. While these footholds are unlikely to fully dismantle the dominant narratives embedded within these regulations, they offer critical entry points for constructing counter-narratives – destabilising claims of inevitability and potentially opening up space for future reimaginings of EU law beyond its current tragic trajectory.

223. Griffin (n 210) 79.

224. Paddy Leerssen., 'Seeing What Others Are Seeing: Studies in the Regulation of Transparency for Social Media Recommender Systems' (2023) *PhD Thesis*, 85, cited by Griffin (n 24) 12.

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