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Designing digital sovereignty—an open federated EU web index for search

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Google crawls and indexes the web, providing hyperlinks and search results that are extremely profitable based on exchanges between users, advertisers and data brokers. Due to this "logic of accumulation" of data, the human expectation of sovereignty over one's own life and authorship of personal experience is at stake (Zuboff 2019). Also of concern is state sovereignty and its ability to "reign in" Big Tech, which has been further undermined by lobbyists and regulatory bodies. Encompassing information and communication technologies, "digital sovereignty" is often viewed as a "third way," committed to European norms and values instead of US or China's business models. Applying document and critical discourse analysis, this article explores the "media and sovereignty" dilemma of search technologies structured by John Durham Peter's "political-ethical urgencies" (2022): Section 230, conspiracy theory, a burning planet and surveillance capitalism. It then introduces a forthcoming EU funded Open Web Index (OWI) based on European values and jurisdiction. In tandem with its technical development, a Working Group Ethics (WGE) is generating an "ethics compass" including the value "Sovereignty/ Autonomy," which is collectively discussed and then analysed by the author. Contributing to media and communication scholarship, the article proposes how this federated search index could embody digital sovereignty by instilling "digital communality" (Lehuedé 2024), thereby simultaneously challenging world capitalism's accumulative and extractive ethos.

Introduction

With billions of users' "ubiquitous googling" the past 25 years,[1] Google.com has become the world's most visited website, indexing trillions of web pages daily, whilst collecting user data, which has become the world's most valuable resource. Exploited as a commodity, data is sold, traded and reused, facilitating new breaches in user privacy, also when searching for information. Crawling and indexing the web, Google provides hyperlinks that are extremely profitable,[2] based on exchanges between users, advertisers and data brokers, which are part of the "service/dataprofile/advertising complex."[3] The fuel for surveillance capitalism is this "behavioral surplus" of user data that is then "instrumentalized and monetized,"[4] with data brokers allowing other companies to recognize, link, and match people across different corporate databases.[5] Fusing data from disparate sources with Google services through the "googlization of everything,"[6] the resulting "surveillance assets" or "prediction products" has led Shoshana Zuboff to proclaim that, "what is at stake here is the human expectation of sovereignty over one's own life and authorship of one's own experience."[7]

However, this threat also concerns state sovereignty, which has been undermined by lobbyists and regulatory bodies developing legislation and sharing guidelines, as the "power of states to regulate platforms is limited."[8] In the technopolar era of the mid 2020s, Big Tech platforms simultaneously perform the duties of critical infrastructures as well as providing software and challenging the status of the state.[9] The user populations of Silicon Valley tech companies are increasing exponentially

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[1] Renée Ridgway, "Re:search–the Personalised Subject vs. the Anonymous User" (PhD monograph diss., Copenhagen Business School, 2021). This article draws on excerpts from the analysis and discussion sections.

[2] Safiya Noble, *Algorithms of Oppression: How Search Engines Reinforce Racism* (New York University Press, 2018).

[3] Geert Lovink and Nathanial Tkacz, "Money Lab: Sprouting New Digital-Economic Forms," in *Moneylab: An Intervention in Digital Economy*, ed. Geert Lovink and Nathanial Tkacz (Institute of Networked Cultures, 2015), 15.

[4] Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (Public Affairs, 2019).

[5] Wolfie Christl, *Corporate Surveillance in Everyday Life: How Companies Collect, Combine, Analyze, Trade, and Use Personal Data on Billions* (Cracked Labs Report, June 2017).

[6] Siva Vaidhyanathan, *Googlization of everything: And why we should worry* (University of California Press, 2011), 753–54.

[7] Zuboff, *The Age of Surveillance Capitalism,* 556.

[8] Sara Bannerman, "Platform imperialism, communications law and relational sovereignty," *New Media & Society* 26, no. 4 (2024): 1821, https://doi.org/10.1177/14614448221077284.

[9] Jean-Christophe Plantin, Carl Lagoze, Paul N. Edwards, and Christian Sandvig, "Infrastructure studies meet platform studies in the age of Google and Facebook," in *New Media & Society* 20, no. 1 (2018): 293–310, https://doi.org/10.1177/1461444816661553.

beyond those of large nation states, whilst clearly demarcated spaces of territories are disappearing.[10] However, instead of only "US surveillance capitalism" or "Chinese and Russian techno-authoritarianism," there is an uptake of the term "digital sovereignty," often seen as a "third way" committed to European norms and values,[11] which is not claimed by the state but by the EU or tech actors.[12]

Digital sovereignty encompasses internet communication technologies as well as the digital transformation of societies, where the "state's, an economy's, or an individual's autonomous control over digital means and data [....] appears to be fluid."[13] For Pohle and Thiel, it is a discursive practice encircling politics and policy, far beyond a "legal or organizational concept," which needs to question digital platform power through regulatory interventions.[14] Or, as Bendiek and Neyer put forth, it is "shorthand for an ordered, value-driven, regulated and therefore reasonable and secure digital sphere."[15] Often policy actors portray digital sovereignty as a means to defend liberal and democratic values, whereas Cammaerts and Mansell propose policy and regulatory debate as a "radical, agonistic process" that is generative of alternatives.[16] Instead of (data) colonialism, US hegemony and policy regulation, Mignolo's "decolonial option" could interrogate the transformative potential of a digital sovereignty framework.[17] Yet how can digital sovereignty be designed[18] in regard to developing and facilitating an open federated web index as a public good?

Applying document and critical discourse analysis, the article first delves into the early digital histories of "media and sovereignty."[19] Building upon communication scholarship, the article then examines *What is a medium?*, applying John Durham Peters

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[10] Bannerman, "Platform imperialism," 1820.

[11] Sebastián Leheudé, "An alternative planetary future? Digital sovereignty frameworks and the decolonial option," *Big Data & Society* (2024): 1–13, https://doi.org/10.1177/20539517231221778.

[12] Rebecca Adler-Nissen and Kristin Anabel Eggeling, "The Discursive Struggle for Digital Sovereignty: Security, Economy, Rights and the Cloud Project Gaia-X," *JCMS* 62, no. 462 (2024): 993–1011, https://doi.org/10.1111/jcms.13594.

[13] Christian Herzog, Robin Preiss and Daniela Zetti, "Digital sovereignty as an ill-structured (or wicked?) problem," in *Uncertain Journeys into digital futures*, eds. Thomas Kox, André Ulrich and Herbert Zech (Proceedings of the Weizenbaum Conference 2024), 3.

[14] Julia Pohle and Torsten Thiel, "Digital Sovereignty," *Internet Policy Review* 9, no. 4 (2020): 1–19, https://doi.org/10.14763/2020.4.1532.

[15] Ibidem.

[16] Bart Cammaerts and Robin Mansell, "Digital Platform Policy and Regulation: Toward a Radical Democratic Turn," *International Journal of Communication* 14 (2020): 148.

[17] Leheudé, "An alternative planetary future?"

[18] Luciano Floridi, "The Fight for Digital Sovereignty: What It Is, and Why It Matters, Especially for the EU," *Philosophy & Technology* 33 (2020): 377, https://doi.org/10.1007/s13347-020-00423-6.

[19] Monroe Price, *Media and Sovereignty: The Global Information Revolution and Its Challenge to State Power* (MIT Press, 2002).

eponymous essay that maps out his "political-ethical urgencies": Section 230, conspiracy theory, a burning planet and surveillance capitalism.[20] The next section articulates surveillance capitalism in regard to search, which contrasts two approaches to sovereignty—the user vs. Google's *Big Other*.[21] The text then explains why contemporary notions of digital sovereignty are discursive and introduces a new technological communication medium, an open web index. Since September 2022 the EU has funded the design and implementation of a forthcoming Open Web Index (OWI), based on European values and jurisdiction. Simultaneously, a Working Group Ethics (WGE), consisting of researchers from universities and people from civil society, monitors the technical development of the index in tandem with investigating ethical concerns and risks. Outcomes include generating a "value compass" for open internet search, one of which, Sovereignty/Autonomy, is analysed collectively in regard to the OWI through five key questions that is then summarized and interpreted by one member (the author), contextualizing the group's discussions.[22] This article contributes to media and communication research by proposing how an EU federated search index could embody digital sovereignty, envisioned as a transformative planetary future instilling "digital communality," thereby simultaneously challenging "world capitalism's accumulative and extractive ethos."[23]

Information Sovereignty and Communication Media

> Information has always been a source of power. It has fueled revolutions and started civil wars. It has been used to suppress movements and bring down political regimes. This continues to be true at the beginning of the twenty-first century as the constraining and empowering forces of information and information technologies encompass much of the globe.[24]

[20] John Durham Peters, "What is not a medium?" *communication +1* 9, no. 1 (2022), https://doi.org/10.7275/epdv-p307.

[21] Shoshana Zuboff, "Big Other: surveillance capitalism and the prospects of an information civilization," *Journal of Information Technology* 30 (2015):75–89, https://doi.org/10.1057/jit.2015.5.

[22] Organised by the Open Search Foundation (Christine Plote), Working Group Ethics members Alexander Nüssenbaum, Daniela Zetti, Nikolaus Poechhacker, Jasmine Tieten, Nicolas Dierks and Renée Ridgway contributed to the section "(Digital) sovereignty/autonomy in regard to an EU Open Web Index."

[23] Lehuedé, "An alternative planetary future?"

[24] Toby Ten Eyck, "Review of Media and Sovereignty: The Global Information Revolution and Its Challenge to State Power, by Monroe E. Price," *Contemporary Sociology* 32, no. 6 (2003): 753.

Written in 2002, shortly after the burst of the dotcom bubble and 9/11, media and communications legal scholar Monroe E. Price's book *Media and Sovereignty: The Global Information Revolution and Its Challenge to State Power* addressed the fall of the nation state due to the rise of new media. Price demonstrates how the state played a crucial role in shaping technologies and redefining its power through new media itself, by adjusting "its modes and practices of authority."[25] The media in discussion in this "revolution" are both "old media," such as broadcasting (radio and TV), along with the Internet as the "new media" that affected not only state institutions but courts, corporations and consumers, as they were called at that time.[26] It is Price's "language of new media,"[27] which constitutes political economy and sovereignty through metaphors and linguistic "Tropes of Restructuring": ensuring national security, strengthening national identity, guaranteeing the right to receive impartial information, protecting the marketplace of ideas, establishing free and independent media and preserving public service broadcasting.[28] These tropes were then applied to construct policy discourse, which in turn produced the policies themselves, thereby shifting US law and politics as well as shaping media structures and social space.[29]

Beginning with the telegraph, then radio waves and later satellite signals, communication technologies transcended national borders and states either operating and controlling technology unilaterally through force, the law, or negotiations, whilst seeking their cooperation in distributing or regulating information across borders.[30] These critical changes in content, media practice and institutions had repercussions for all forms of governments worldwide (democratic, authoritarian or totalitarian), emphasising the relationship of the state controlling media within its sovereign boundaries but also internationally. However, with the advent of the Internet, not only factors but actors became involved in controlling power. Price contends that "technology seems capable of causing a redefinition in the law, a rechannelling of information, and a redefinition of who is the gatekeeper and what standards that gatekeeper should follow."[31] The constitutive power of media was therefore able to affect the way that national governments and other actors, including

[25] Vincent Mosco, "Reviewed Work(s): Media and Sovereignty: The Global Information Revolution and Its Challenge to State Power by Monroe E. Price," *American Journal of Sociology* 108, no. 6 (May, 2003): 1383.

[26] Ten Eyck, "Review of Media and Sovereignty," 753.

[27] Coevally, the eponymous anthology *The Language of New Media*, edited by Lev Manovich was also published in 2022.

[28] Price, *Media and Sovereignty*, 89.

[29] David Clifton, "Review of Media and Sovereignty: The Global Information Revolution and Its Challenges to State Power," *Canadian Journal of Communication* 29, no. 2 (2004): 246.

[30] Price, *Media and Sovereignty,* 19.

[31] Ibidem, 10.

multinational corporations, harnessed and channelled power, which in turn affected the social structure of places, what Vincent Mosco deemed the "spatiality of communication."[32] By shifting the word "space," a physical location, to the notion of "place" as a social and political construct where a panoply of voices resonated in a public sphere, "spatiality of communication" became an organized and controlled "marketplace for loyalties."[33]

Following Price, the place becomes an arena where "largescale competitors for power, in a shuffle for allegiances, use the regulation of communications to organize a cartel of imagery and identity among themselves." [34] As a theoretical framework, this metaphoric "marketplace for loyalties" encompasses actors from state as well as foreign governments, civil society and notably corporations that attempt to change media technologies and infrastructures so as to have their competing perspectives heard, along with affecting and influencing the behaviour of citizens. These intertwined agendas, marketplaces and especially sovereignties reflect the complex relationship between media, statecraft and individual citizenship, at a time when the information revolution added a new actor—the Internet. Even though Price's "marketplace of loyalties" collates together actors with various agendas that have diverse understandings of what good information is, media and state sovereignty are not at loggerheads, or that they undermine each other. Instead, both are involved in catalysing change in the other[35] and state control in regard to information actually reinforces sovereignty.[36] However, as witnessed from the past two decades since this book was written, the rise of concerns regarding the state legislating Big Tech, environmental sustainability, disinformation and surveillance capitalism have pushed back against this idea, through communication media.

Some political-ethical urgencies of Communication Media

> Let us not roll out a red carpet to the monsters that bestride our infoscape. Silicon Valley would love nothing more than to have us all define media as forces of nature. At a human scale, for better or worse,

[32] Ibidem.
[33] Ibidem.
[34] Ibidem, 31.
[35] Clifton, "Review," 245.
[36] Zhang, "Review of Media and Sovereignty: The Global Information Revolution and Its Challenge to State Power, by Monroe E. Price," *Convergence* 10, no. 2 (2004): 122.

> when we talk about media, we have to talk about money and power, at least some of the time.[37]

In a previous issue of *communication +1*, media theorist John Durham Peters posed the question in his eponymous article, "What is not a medium?" Peters maps out the term "medium" by way of encompassing natural elements, which rescues readers from the "subject-object split" that places meaning on the subject. Simultaneously, he terms "medium" as a means to show how media as "infrastructures of being" are not only "fundamental to human existence," but that they are "positional."[38] According to Peters, media are "agents of domination" and "the medium" is the materialization in the middle, but it can also be "infested with disinformation, palaver, and scum."[39] In this regard there is then a "political-ethical urgency" in media and communication studies to comprehend what effect the medium has and who affects it, with a critical commitment to dialectically identifying agency and intention:

> It requires the greatest thought and discernment to know when and how a medium is. Let's give that thought and discernment an old name: dialectic. Or maybe even better: responsibility.[40]

This responsibility applies to "ontological operators"—media that are neither too abstract, nor limited to institutions, but rather need to be "handled with care" when addressing the crucial agendas of our times: "Section 230, conspiracy theory, a burning planet, and surveillance capitalism (to choose a few examples)."[41] The following discusses each of Peters' chosen "political-ethical urgencies," though not in the same order, but rather in regard to communication media, search and sovereignty, which are not fixed but mutable, depending on the variable of time—since the birth of Google.

1. A burning planet

We live on a burning planet, or what activist Greta Thunberg so succinctly expressed at the 2019 World Economic Forum in Davos with her speech "Our House Is on Fire;" the next year she returned and added the word "still." Undertaking the question of heat, in the same *communication +1* issue as Peters' article above, Patricia Pisters takes on the element of fire and its epistemic qualities as a medium. In turn, she references

[37] Peters, "What is not a medium?," 3.
[38] Ibidem, 1-3.
[39] Ibidem, 3.
[40] Ibidem, 3.
[41] Ibidem, 3.

a reinscription of Marshall McLuhan's "hot and cool media" by Nicole Starosielski, whose book *Media Hot & Cold* measures thermal media communication and digital information infrastructures that are rooted in the element of fire.[42] Hot and cool media range from the Internet's subsea telecommunication cables[43] to the metaphor of "the cloud" that evokes an immaterial infrastructure, yet "[i]nformation is not smokeless."[44] As Norbert Wiener pointed out, because the "transfer of information cannot take place without a certain expenditure of energy," computation is "never thermodynamically free."[45] Computation (data processing) burns through exabytes of data daily, on servers "which are essentially computer hard drives stacked in rows" and that generate a lot of heat.[46]

Since November 2022, with the rise of chatbots such as OpenAI's ChatGPT delivering answers to search queries, at the time of writing the energy consumption of a chatbot is four to five times that of a "regular" Google search.[47] Mél Hogan states in her 2015 article "Big data ecologies" that Google's search engine "consistently uses the same amount of electricity as a city of approximately 200,000 people (in the US)," yet it does so by employing "an awkward comparison between Google searches with real-world searches." [48] Actually, servers demand cooling requiring substantial electrical grid usage and water is cheaper than electricity, which is why there are partnerships between Google and public water infrastructure to ensure the continuation of supply and services.[49] Even though Google would rather be a sky, sea, fire or water medium mentioned above, Peters deems it an "earth medium," with computation relying on coal and coltan. "Data processing is dependent on the furnace arts. Vulcan, not Apollo, is the lord of cyberspace."[50] From element extraction and energy resources to the contemporary economic infrastructures of data centres in a digitally connected world, these planetary scale computation processes impact earth's environment[51] and in the coming years, AI will use as much energy as certain nations.[52]

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[42] Patricia Pisters, "Combustive Knowledge: Fire as Medium and Interface," *communication +1* 9, no. 1 (2022): 3, https://doi.org/10.7275/xcye-wr43.

[43] Nicole Starosielski, *The undersea network* (Duke University Press, 2015).

[44] John Durham Peters, *The Marvelous Clouds: Toward a Philosophy of Elemental Media* (University of Chicago Press, 2015), 333.

[45] Ibidem, 333.

[46] Mél Hogan, "Big data ecologies," *Ephemera: Theory & Politics in Organization* 18, no. 3 (2018): 638.

[47] Kate Crawford, "Generative AI's environmental costs are soaring — and mostly secret," *Nature* 626 (2024): 693, *https://doi.org/10.1038/d41586-024-00478-x.*

[48] Hogan, "Big data ecologies," 637.

[49] Ibidem, 638.

[50] Peters, *The Marvelous Clouds*, 333.

[51] Benjamin H. Bratton, *The Stack: On Software and Sovereignty* (MIT Press, 2016).

[52] Crawford, "Generative AI's," 693.

This raises questions regarding the ecological footprint on nature by diverse media and concomitantly, the sovereignty of who decides.

2. Section 230

Yet is information sovereignty analogous to human and state sovereignty? As relayed in the previous section, Price explained the relationship between media and sovereignty at the turn of the previous century with the information revolution. Media are constantly in flux; technologies change. What if the lingo for the Internet at that time, "cyberspace," unlike Barlow's declaration that governments are not welcome and have no sovereignty there, "could be zoned based on the qualifications of individual users or ideas?"[53] In 2002 Price put forth the concept "imaginative analogies," which concerned the restriction of an individual's free movement across borders and pondered a kind of "selective certification" that could be imposed on citizens. Coevally, changes in technologies were dictating how information is distributed and by whom, along with the gatekeepers involved. As Introna and Nissenbaum presciently argued in their seminal article addressing "why the politics of search engines matter," at the turn of the century commercialization was already "shaping the web," where dominant entities (larger websites with more traffic) determined what and who was seen and heard,[54] but without responsibility for the delivered content.

From a legal perspective, communication and information media was shaping 'democracy in cyberspace' as broadcasting once did, first with radio and then television. However, regulation shifted in the direction of having agreements negotiated with media corporations and state actors. The Internet was considered a public sphere for free expression and a (market)place; both made possible by Section 230. Part of the Communications Decency Act, itself a component of Title V of the 1996 Telecommunications Act, Section 230 can be briefly summarized as "No provider or user of an interactive computer service shall be treated as the publisher or speaker of any information provided by another information content provider."[55] In the case *Reno v. American Civil Liberties Union* (1997), which ruled that the Communications Decency Act of 1996 is unconstitutional, the then Supreme Court justice Sandra Day

[53] Laurence H. Winer, "Review of Media and Sovereignty: The Global Information Revolution and Its Challenge to State Power, by Monroe E. Price," *Jurimetrics* 45, no. 3 (2005): 352.

[54] Lucas Introna and Helen Nissenbaum, "Shaping the Web: Why the politics of search engines Matters," *The Information Society* 16, no. 3 (2000): 169–185.

[55] Sara Morrison, "Section 230, the internet law that's under threat, explained," *Vox* (February 23, 2023), https://www.vox.com/recode/2020/5/28/21273241/section-230-explained-supreme-court-social-media.

O'Conner noted that "cyberspace presently lacks two characteristics of the physical world, geography and identity."[56] However, Section 230(c)(1) was allowed to be "severable" from rest of the legislation. Still today this ruling enables Google and other media companies to not be legally held responsible for their content (such as mis/disinformation) because they are not considered publishers.

3. Conspiracy theory

Briankle Chang, in his *communication +1* article "No Thing is Not a Medium," articulates that "media are everywhere because things are everywhere" and a thing, which is everywhere, is always one of things, as "in media res" and therefore media are everywhere as well.[57] This in-betweenness of media is further complicated because all things conspire, "they communicate across the aether" and for Chang, everything is a medium; thus the world is "one of enduring mediation" that it is then "an unremitting medium of media":

> We *are* only inasmuch as we are in medias res. Put simply, it is not that we must learn to live with things; rather, it is that we would cease to exist in their absence.[58]

This leads to enquiring how "in media res" plays a "valuable" role in communication and media technologies regarding Peters' shout out to the political-ethical urgency of conspiracy theories. Johannes Bennke's recent article in *communication +1,* "Media of Verification: An Epistemological Framework for Trust in a Digital Society" explores how truth and trust are established *with* technology. He answers this question by elucidating that trust is not only social cohesion as shown by interpersonal interaction and behavior but through the operations of verification enacted by media technologies. For Bennke, the verification of truth comes about by applying a "web of references based on a paradigm of circumstantial evidence, using at least two devices, by agreeing to specific terms and conditions, and by certificates" and this encryption process creates trust.[59]

If two-factor encryption can act as a verification device for truth, whilst generating trust, can tracerouting the provenance of a website determine the veracity of its content, from where it originated and hence, how it was originally indexed? In

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[56] Winer, "Review of Media and Sovereignty," 352.

[57] Briankle G. Chang, "No Thing is Not a Medium: Quick Thoughts on the Media Order of Things," *communication +1* 9, no. 2 (2022): 3, https://doi.org/10.7275/9ac5-9498.

[58] Ibidem, 3.

[59] Bennke, "Media of Verification: An Epistemological Framework for Trust in a Digital Society," 22.

order for users to share links and decide what's valuable, crawlers need to first index websites. Applying an analogue analogy pertaining not only to search but research, "[a]n unindexed Internet site is in the same limbo as a misshelved library book."[60] With increased usage and scale, vulnerabilities in the index called "data voids" can appear,[61] which only become visible if the search engine delivers "skewed and manipulatory content." There are two types of data voids: problematic queries that yield results "only from extreme-right outlets" based on "highly contested" terms and "strategic" new terms that are amplified to reach broader audiences, who are unaware of the problematic content.[62] In their article "Google, data voids, and the dynamics of the politics of exclusion," Norocel and Lewandowski relay an example of how searching with a conspiracy-related term "chemtrails" initially produced search results that directed the user to conspiracy theory sources. After their first instantiation, data voids gain attention and upon detection, are quickly filled by the far-right factions. As mainstream media increasingly reported on them, "initial results were demoted in the rankings and news sources," yet Wikipedia and mainstream new outlets eventually ranked them at the top of the first page of results.

4. Surveillance capitalism

During the previous decades Price's "marketplace of localities" transitioned from what gets seen and heard on the Internet to advertising controlling "navigational media,"[63] including the dissemination of information when searching online. Various media compete with each other for attention. However, individual users also need to accrue value within the attention economy, thus "to exist is to be indexed by a search engine."[64] The past 25 years Google "shaped the web" by indexing websites, which need visibility so that they can engage with users.[65] Simply put, these records acquire a "significant ontological role in the recognition of the self by existing, or not, in an archived body of information."[66] Therefore, in the present online attention economy, "the constantly updated map" of the "web cosmos" that Google's spiders weave fulfils

[60] Peters, *The Marvelous Clouds,* 329.
[61] Michael Golebiewski and Dana Boyd, "Data voids," *Data & Society* (2019), https://datasociety.net/library/data-voids/.
[62] Ov Cristian Norocel and Dirk Lewandowski, "Google, data voids, and the dynamics of the politics of exclusion," *Big Data & Society* (2023): 4, https://doi.org/10.1177/20539517221149099.
[63] Elizabeth Van Couvering, *Search engine bias: the structuration of traffic on the World-Wide Web* (PhD diss., The London School of Economics and Political Science, 2010).
[64] Alexander Halavais, *Search Engine Society* (Polity, 2009), 105.
[65] Introna and Nissenbaum, "Shaping the Web"; Ridgway, *Re:search*, 260.
[66] Noble, *Algorithms of Oppression*, 126.

the dream of completion: "I am tagged, therefore I am."[67] This crawling and indexing the web built Google's "database of intentions," with users willingly adding websites and clicking on the hyperlinks of search results:

> Clickstreams are the seeds that will grow into our culture's own memex—a new ecology of potential knowledge—and search will be the spade that turns the internet's soil.[68]

Google portrays itself as a search engine, yet its "real business is data mining"[69] that is an important factor of the "extraction industry" where traffic is channelled to gather users' attention so that humungous amounts of personal data can be extracted at the "lowest possible price" and in turn, resold to numerous companies at the "highest possible price."[70] Shoshana Zuboff deems this "logic of accumulation" of user data as an asymmetrical power relationship where the user is kept in the dark about Google's "extraction" practices,[71] part and parcel of surveillance capitalism where data has uncritically been deemed the "new oil."[72] However, unlike oil, there is no need to worry about reserves as users constantly produce data.[73] Sociologist William Davies provides an analogy between oil and personal data, which he considers a "concealed natural resource that is progressively plundered for private profit, with increasingly harmful consequences for society at large."[74]

Some of the consequences are relayed in this brief overview of Peters' "political-ethical urgencies," which also reflect a set of societal values (responsibility, care, in media res, trust and truth, privacy) that comprise the concept of (digital) sovereignty in regard to the manufacture and dissemination of information. This text now turns to explaining how sovereignty relates to communication media, specifically search engines.

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[67] Peters, *The Marvelous Clouds*, 329.

[68] John Battelle, *The Search: How Google and Its Rivals Rewrote the Rules of Business and Transformed Our Culture* (Penguin, 2006), 256.

[69] Peters, *The Marvelous Clouds*, 326.

[70] Jonathan Taplin, *Move Fast and Break Things: How Facebook, Google, and Amazon Cornered Culture and Undermined Democracy* (Little, Brown, and Company, 2017); Elizabeth Kolbert, "Who Owns the Internet? What Big Tech's monopoly powers mean for our culture," *New Yorker*, August 21, 2017, https://www.newyorker.com/magazine/2017/08/28/who-owns-the-internet.

[71] Zuboff, "Big Other."

[72] Viktor Mayer-Schönberger and Kenneth Cukier, *Big Data: A Revolution That Will Transform How We Live, Work, and Think* (John Murray, 2013).

[73] Those mining and analysing data thereby produce more data about the data already produced and the people who produced it.

[74] *William Davies, "Short Cuts: Cambridge Analytica," London Review of Books 40, no. 7(April 5, 2018), https://www.lrb.co.uk/the-paper/v40/n07/william-davies/short-cuts.*

Searching sovereigns vs. the sovereign of search

Although the term sovereignty has diverse meanings dependent upon context, "it also has a specificity: there is always a constituting power (who or what "makes" sovereignty) and a constituted power (who or what "becomes" sovereign)."[75] This is supported by Foucault's analysis of power that concerned itself with subjectification, or the way in which subjects are constructed as specific subjects, where "on the one hand, one can be subject/subjugated to the control of others.[76] On the other hand, one can subordinate oneself."[77] Subjects are thereby complicit in their own domination and this form of self-governing is incorporated into daily activities, such as responding to officials of the state when addressed. This constitutive process of "interpellation" is an ideology of mediation, where this middle role is "the imaginary relationship of individuals to their real conditions of existence."[78] Here the "medium" is how people as members of society imagine their relation to the systems of hegemonic power, which reproduce themselves by hiding governing factors as they simultaneously incorporate the subject into the structure of power.

Previously it was the police who asked the question: "Hey you there?" Nowadays sovereign subjects searching enhance the power structures of Google by deciding to use it. Moreover, Google search facilitates online tracking and (self) surveillance, simultaneously optimising searching subjects where an "ideological superstructure and the economic base meet with and feed each other in every single Google query."[79] It then becomes crucial for individual users to recognise their own interpellation when using "transnational informational capitalism"[80] and how they relate to the capitalist ideology of Google search algorithms.[81] In addition to capitalist ideology embedded in search algorithms, people are now aware of being watched as well as tracked (thanks to Snowden's revelations) when carrying out online Google searches in an era of surveillance capitalism.[82] Media theorist Wendy Chun's *Habitual New Media: Updating to Remain the Same*, contextualises the problem at hand––the

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[75] Adler-Nissen and Eggeling, "The Discursive Struggle for Digital Sovereignty," 5.

[76] Michel Foucault, "The Subject and Power," *Critical Inquiry* 8, no. 4 (1982): 777–95.

[77] Christian Borch, *Foucault, Crime and Power: Problematisations of Crime in the Twentieth Century* (Routledge, 2015), 14.

[78] Louis Althusser, *Ideology and Ideological State Apparatuses (Notes towards an Investigation)*, in *Lenin and Philosophy and Other Essays*, translated by B. Brewster (Monthly Review Press, 1971), 162.

[79] Astrid *Mager,* "Defining Algorithmic Ideology: Using Ideology Critique to Scrutinize Corporate Search Engines," *tripleC* 12, no. 1 (2014): 32.

[80] Christian Fuchs, "A Contribution to the Critique of the Political Economy of Google," *Fast Capitalism*, (2011), 8.1. https://fastcapitalism.uta.edu/8_1/fuchs8_1.html.

[81] *Mager, "D*efining Algorithmic Ideology."

[82] Zuboff, "Big Other" and *The Age of Surveillance Capitalism;* Ridgway, *Re:search,* 194.

paradox that searching for and finding information simultaneously captures the user in the web as "searching sovereigns":

> Neoliberal subjects—small sovereigns—are always searching, rarely finding. Shifting from the zoom to the overview, from search term to search term, they defer and extend decisions: the end, like that mythic pot of gold, is never reached. At the same time, though, users' searches produce data that make users findable, even as they wander.[83]

The above is the beginning quote to "Chapter One, Networks: Belatedly Too Early (always searching, never finding)?" where Chun elaborates how "habitual new media," in this case search engines, have the tendency to position the individual within the network, which is central to neoliberalism *and* hyperlinking. These habitual connections reinforce the repetitions of "updating to remain the same" and that "YOUs" are sorted and categorized into groups of others "like them."[84] For example, personalised search results, which although publicly declared individualised, are the result of the subject organised into groups based on others with similar interests, characteristics and behaviour patterns.[85]

Besides searching sovereigns interpellated by capitalist ideologies, it was Google's co-founder Sergey Brin who suggested that "the perfect search engine would be the mind of God."[86] With Google's former motto "don't be evil" still resonating, the public rhetoric of the contemporary condition is to trust the benevolent nature of corporate oversight as an "object of faith."[87] Instead of contracts, governance and the rule of law, Zuboff puts forth the term "anticipatory conformity" that she describes as "a new kind of sovereign power,"[88] which exceeds Bentham's panopticon of surveilling, monitoring and controlling human subjects.[89] Google's *Big Other* architecture is "existing somewhere between nature and God" with CEO Hal Varian declaring that instead of having to ask Google questions, it should "know what you want and tell you before you ask the question."[90] Besides the behavioural modification of users through *Big Other's* "prediction products," Hal Varian's quote "adds a new

[83] Wendy Hui Kyong Chun, *Habitual New Media: Updating to Remain the Same* (MIT Press, 2016), 77.
[84] Chun, *Habitual New Media.*
[85] Ibidem; Noble, *Algorithms of Oppression*; Ridgway, *Re:search.*
[86] Peters, *The Marvelous Clouds,* 318.
[87] Halavais, *Search Engine Society*, 1-2; Cathy O'Neil, *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy* (Penguin Random House, 2016), 29.
[88] Zuboff, "Big Other," 86.
[89] Ridgway, *Re:search*, 268.
[90] Zuboff, "Big Other," 81.

dimension to both hegemonic ideals in that now this 'God view' can be fully explicated, specified, and known, eliminating all uncertainty."[91]

Big Other is now afforded with divine attributes. Google's "sovereignty of data processing" protects its proprietary algorithms through authorship (IPR) as it collates user data, "secret information whose circulation is connected to the infrastructures of server farms, satellites dishes and computer hardware."[92] This is what Beyes and Pias term "organizational theology," where the "invisible hand of automated data generation and circulation is presented as destiny beyond human comprehension [...] a reassuring data sublime."[93] According to Zuboff, with anticipatory conformity people lose their sovereignty and are coerced to give up choice of whether or not to relinquish their data to an "invasive power" and instead adhere to contractual obligations, not wanting to be involved in lawsuits or other unpleasantries:

> In a world of *Big Other*, without avenues of escape, the agency implied in the work of anticipation is gradually submerged into a new kind of automaticity—a lived experience of pure stimulus-response.[94]

Only those in power, surveillance capitalists, exude the capacity to enact "a new form of power in which contract and the rule of law are supplanted by the rewards and punishments of a new kind of invisible hand."[95] *Big Other* aka Google, the sovereign of search.

Discursive ambiguity of digital sovereignty

Although the mix of old and new policy and regulation will incentivize and even extend insurance that the dominant Silicon Valley platforms will "operate in a manner consistent with the public interest," it is the state that needs to invoke regulation as a range of "value conflicts" surface.[96] Therefore, it is also worthy to take a brief look at US values concerning the Internet. Since the 1990s the foundations inherent to the Internet, specifically open source software protocols and John Perry Barlow's *Declaration of Cyberspace*, where neither an individual nor country has exclusive

[91] Zuboff, "Big Other," 82.
[92] Timon Beyes and Claus Pias, "The Media Arcane," *Grey Room* 75 (2019): 101, https://doi.org/10.1162/grey_a_00271.
[93] Ibidem; Ridgway, *Re:search*, 246.
[94] Zuboff, "Big Other," 82.
[95] Zuboff, "Big Other," 82.
[96] Cammaerts and Mansell, "Digital Platform Policy and Regulation," 137, 145.

authority, promoted autonomy from sovereign powers.[97] Besides the US perspective, countries (China, Russia) and territories (Europe) were advancing concepts that anticipated "digital sovereignty," which appeared during the second decade of the 21st century, with the ushering in of the "infosphere" as the "fourth revolution" that was (re)shaping human reality.[98] Around 2010 there was the promotion of innovation and business friendly liberal policies encouraging global trade and the "EU was seen as 'falling behind' other developed economies and access to content needed to be 'opened up.'"[99]

Thumfart (2021) puts forth "digital sovereignty" as an element of a "norm development cycle" structured by four stages that are triggered by "catalytic events."[100] This article has primarily addressed Thumfart's second phase—reverberations from the Snowden revelations in 2013 where the EU "adopts a notion of digital sovereignty with a focus on economic aspects."[101] In the EU the concept of digital sovereignty is rooted in the liberal idea of individual freedom where an individual can make choices about themselves in the public sphere as well as online spaces, nowadays in regard to their data with the GDPR. However, the concept goes further than the data privacy of citizens. It was the EU's Digital Agenda 2020-30 that put forth safe online spaces and to develop level playing fields in digital markets, adding to this the notion that privacy could be advantageous for competition, augmenting policy's "growth and innovation language" with specific references to "protection and autonomy."[102] At the time of writing the term addresses geoeconomics and technological developments, cyber threats, interference in election processes by Russia, US-China trade wars and foreign cloud infrastructures.[103]

> Digital sovereignty is—especially in Europe—now often used as a shorthand for an ordered, value-driven, regulated and therefore reasonable and secure digital sphere. It is presumed to resolve the multifaceted problems of individual rights and freedoms, collective and infrastructural security, political and legal enforceability and fair economic competition.[104]

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[97] John Perry Barlow, "A Declaration of the Independence of Cyberspace," (February 8, 1996), https://www.eff.org/cyberspace-independence.

[98] Floridi, "The Fight for Digital Sovereignty."

[99] Adler-Nissen and Eggeling, "The Discursive Struggle for Digital Sovereignty," 9.

[100] Johannes Thumfart, "The norm development of digital sovereignty between China, Russia, the EU and the US: From the late 1990s to the Covid-crisis 2020/21 as catalytic event," (Vol. 14, pp. 1-44).

[101] Ibidem.

[102] Adler-Nissen and Eggeling, "The Discursive Struggle for Digital Sovereignty," 9–10.

[103] Ibidem.

[104] Pohle and Thiel, "Digital Sovereignty."

In this way the above quote encapsulates how the concept "digital sovereignty" transitioned from its association with communication media in the form of internet connection to the entire digital transformation of society, specifically encompassing the marketing of the EU as a "core player in global geostrategic competition and the digital economy."[105]

Yet Adler-Nissen and Eggeling's recent article questions the consequences of merging the two terms "digital" and "sovereignty," noting that this "(geo)political agenda" for Europe lends itself to a "discursive ambiguity," which is a feature, not a bug.[106] Without a static definition, "digital sovereignty" then becomes a "discursive claim" as there is no single understanding of the term, which in turn is "crucial for its politics and effects and how it shape's the EU's power."[107] In regard to the EU's approach concerning technology, digital and data sovereignty, not only regulatory and policy actors play a decisive role but also people involved in activist circuits.[108] This is echoed by Cammaerts and Mansell, who suggest how policy and regulatory debate should incorporate the views of an "emancipated citizenry" and enable the creation of alternatives, including "new technology innovation directions and alternative approaches to the supply and use of digital platform services and applications."[109]

(Digital) sovereignty/autonomy of an EU Open Web Index

Presently, the OpenWebSearch.eu project (September 2022-February 2026) has the mandate to design and implement a distributed index, "deployed across various high performance computing centres in Europe," based on open source software.[110] The project consists of designing, building and operating an Open Web Index (OWI) as a sustainable, federated infrastructure, which intends to significantly strengthen Europe's strategic autonomy.[111] Organised by the Open Search Foundation (Christine Plote), a Working Group Ethics (WGE) is conceptualizing a "values compass" in parallel to the technological and legal development of the OWI. The following is a summarization and interpretation by the author of specifically one of the group's core

[105] Daniel Lambach, "The Territorialization of Cyberspace," *International Studies Review* 22, no. 3 (2020): 482–506.
[106] Daniel Lambach and Kai Oppermann, "Narratives of Digital Sovereignty in German Political Discourse," *Governance* 36, (2022): 2, https://doi.org/10.1111/gove.12690.
[107] Adler-Nissen and Eggeling, "The Discursive Struggle for Digital Sovereignty," 2–3.
[108] Lehuedé, "An alternative planetary future?"
[109] Cammaerts and Mansell, "Digital Platform Policy and Regulation," 137, 147–148.
[110] Open Search Foundation, "White Paper," 2022. The project has received EU Horizon funding (No 101070014).
[111] Ibidem.

values, "Sovereignty/Autonomy," structured by five questions, which were collectively put forth and answered in order to operationalise the value.[112]

How is sovereignty/autonomy understood and how does the WGE define this value? (Digital) sovereignty is discursive yet also emphasizes independence in managing one's digital footprint by providing individuals and entities the ability to control their digital presence, data and online interactions, without undue influence from external forces. In this manner, digital sovereignty can be considered a personal value, yet sovereignty is not an exclusively individual ethical value, but a societal and political one. The WGE differentiates (digital) sovereignty from autonomy, which means that an individual has choices whilst respecting the autonomy of others. For the WGE, sovereignty and autonomy do not mean isolation or rejection of beneficial collaborations and data sharing or avoiding all forms of regulation or oversight, but ensuring that such measures respect individual and collective rights.

What do sovereignty/autonomy mean in the general context of the Open Web Index? The WGE addresses "social sovereignty" as a geopolitical aspect and envisions the OWI as a public good that is independent from a state(s), or country's jurisdiction. Even though it crawls and stores data on the web as a decentralized infrastructure in various EU countries, it can be used globally and adapted to "local" needs (e.g. EU, Germany, etc.). Regarding "personal sovereignty," users will have the freedom to define what data they want to share, as the OWI protects users from intrusive data collection and expropriation by surveillance capitalism or political regimes. Additionally, the OWI would facilitate users having access to non-discriminatory and diverse information sources, independent of state and commercial influence.

What are the building blocks/aspects/ prerequisites/criteria needed to implement this value? An independent infrastructure would provide the user choice in search engines, applications, knowledge graphs, LLMs, etc. that would be built on top of the OWI. The vision is that these third-parties would ethically develop and implement their services ensuring that search algorithms and ad placements (when applicable) are fair, along with allowing comprehensive settings for users to manage their data and preferences. In turn, this customisability would enable users to tailor their search experiences. Additionally, search engine companies and other third parties would need to respect user autonomy and promote ethical practices, which would build trust, a related value. Another building block is transparency, with the vision that there would be clear communication about how data is used and how search results are generated, thereby engendering knowledge and (search) literacy. By implementing

[112] Based on a working document of the WGE.

robust measures to protect user data from unauthorized access and use, data protection and security, another related value, would be safeguarded.

What do sovereignty/autonomy mean for the stakeholders, how are they affected and what do they actually need? It is the WGE's understanding that users should have the freedom to make informed decisions and that they have control over their search experiences and concomitantly, their personal data. The vision of the OWI is that content creators/website owners will have fair opportunity to reach audiences, along with transparency regarding algorithms and their workings in order to protect against unfair demotion or promotion in search results as with mainstream search engines. The OWI would open up the market for new stakeholders—search engines and services companies—which should support user control and data protection, as well as enacting compliance and researchers who want to use the OWI may access the data. Yet both companies and researchers need to respect user sovereignty, with users having a choice whether they wish to participate or not. Ultimately, society as a stakeholder will receive enhanced digital sovereignty and protection from the one-sided power of monopolies/oligopolies through a federated model, independent of state and commercial influence, which attempts to develop and operate the OWI as ethically as possible based on European values, thereby instantiating respect for collective autonomy.

How can sovereignty/autonomy be measured and operationalised? The OWI will be a federated, independent EU infrastructure that will enable a panoply of "declarative search engines" and other data products (applications and services) to make use of the index, thereby providing the user with a choice.[113] Compared to the usage of Bing's and Google's indices, third-party search engines would have the opportunity to use web data from an independent source and more freedom to design their services when using the OWI. Specifically, the present vision is to choose applications that make use of the OWI that could provide user-friendly interfaces for managing privacy settings and data use, along with enabling "slicing" that would allow researchers and other third parties who adhere to a code of ethics to download certain sections of the index. Lastly, there will be options for data retention preferences, such as the OWLer (Open Web Crawler) recognizing "robots.txt" in the code if the website does not wish to be indexed, with the OWI respecting all European laws in regard to data (GDPR), the Digital Services Act, the Digital Marketing Act and the Ethical AI act.

[113] Michael Granitzer, Stefan Voigt, Noor Ashfan Fathima et al., "Impact and development of an Open Web Index for open web search," *Journal of the Association for Information Science and Technology* 75, no. 5: 512–520, https://doi.org/10.1002/asi.24818.

Designing digital sovereignty for search

Due to the uptake of computational power needed for machine learning technologies the last few years, data centres are consuming massive amounts of electricity. Developing a less damaging carbon footprint and a more "relational footprinting" would distinguish the various elements that comprise the geographic, technical, and social design of information and communication technology infrastructures.[114] There is "plenty of dirt on data"[115] and "a geology of media"[116] approach could expose data centres' relationship to the land and resources on which they are built, as well as how they are interconnected and affect other ecosystems worldwide. Constantly requiring more "juice," the ethical-political urgency of a "burning planet" has now come to even more public attention due to the proliferation of large language models (LLMs), as the energy needed to train and employ them to answer search queries has increased exponentially. However, AI scholar Kate Crawford points out that besides "optimizing neural network architectures and improving designs towards greater ecological sustainability," there are other ways that AI industry could "build more efficient models."[117] For example, there could be a coalition of independent bodies that conduct environmental audits that would not only support but enforce "transparency and adherence to standards." [118]

The Open Web Index, which embodies digital sovereignty in its attempt to be a sustainable and federated infrastructure operating on European soil, distributed across four data centres, will be a large-scale and valuable public resource.[119] Furthermore, the Open Web Index aims to facilitate the basis for an open and human-centred search engine market, where researchers as well as small and medium-sized B2Bs promoting new solutions are not stifled or would have to incur costs upfront for the energy use required to carry out data collection and pre-processing.[120] Additionally, the vision is to perform interventions that mandate "energy-efficient hardware, algorithms and data centres" as well as constant monitoring, measuring of (renewable) energy and water use, where sustainable practice is the norm, not the exception.[121] Moreover, modifying communication law to shift from individual human rights to including the environment would result in a "more fully relational

[114] Crawford, "Generative AI's," 693.
[115] Peters, *The Marvelous Clouds*, 333.
[116] Jussi Parikka, *A Geology of Media* (University of Minnesota Press, 2015).
[117] Crawford, "Generative AI's," 693.
[118] Ibidem.
[119] At the moment of writing there are four, the intention is to include additional centres in the distributed network.
[120] Granitzer et al., "Impact and development."
[121] Crawford, "Generative AI's," 693.

understanding," yet this "relational autonomy" would be next to impossible to achieve in practice.[122]

Besides attempting to change the law to expand rights to the environment as well as the individual, designing digital sovereignty by addressing the previously-mentioned political-ethical urgencies would affect international regulatory institutions that uphold the status quo of protecting corporate "sovereign" rights. Although Europe initiates actions to put forth digital sovereignty and has differentiated legislation regarding "freedom of speech," Big Tech companies fall under the auspices of U.S. law. Unfortunately, these platforms enact a "too big to regulate" rhetoric enforced by the legal systems that uphold them. Furthermore, Bannerman points out the interconnectivity

> wired into our legal systems: between speakers, intermediaries and listeners/subjects, between IP owners, users and powerful intermediaries, and between platform companies, data-owners and data subjects. Our legal systems, and platforms' own business models, are built through historical path dependencies that help to construct the 'platform sovereign.'[123]

Plantin et al. describe this problem as the "platformization of infrastructures;" concomitantly it is the "infrastructuralization of platforms."[124] The regulatory systems in the US have facilitated manifold actors participating in the platform economy, which is increasingly acting not only as infrastructures, but to a certain extent, governments. Big Tech continuously operates without legislation or as if it is "above the law" and this imperialism reflects how states (particularly but not exclusively the United States of America) "are empowered by platforms, and platforms are empowered by states."[125]

To return to Price's *Media and Sovereignty* and the transnational platform technologies, it is the shift from "conceptualizing media law as the product of a single state," to conceptualizing media as the "dynamic result of multiple interactions" among transnational corporations and state sovereignties that reign.[126] Simultaneously, Price raised the "haunting question" that still reverberates today: "whether technology overwhelms law and the capacity of a state to regulate."[127] The

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[122] Bannerman, "Platform imperialism," 1827.
[123] Ibidem, 1823.
[124] Plantin et al., "Infrastructure studies," 301.
[125] Bannerman, "Platform imperialism," 1824. Multiple "anti-trust" lawsuits between the U.S. government and Big Tech are ongoing.
[126] Winer, "Review of Media and Sovereignty," 341.
[127] Price, *Media and Sovereignty,* 147.

question then wouldn't remain in the hands of American law regarding whether Big Tech corporations are publishers and responsible for their content (Section 230). Instead, the notion of digital sovereignty is often applied to describe EU constitutional legislation and interventions that transcend American law in attempts to "reign in" and control Big Tech. As a public good, with which various technology companies would provide "data products" in the form of applications or services, with a diverse range of business models, the technological vision of the Open Web Index is to go beyond national borders. Therefore, in order to enact EU digital sovereignty, web search design needs to provide non-discriminatory and factual information, along with transparency concerning how those search results were obtained based on EU values, laws and ethics, not Silicon Valley's.

On the one hand, managing the risk of "data voids" and discriminatory responses through technology is an opportunity to further "digital sovereignty" with the ability to "rethink, redraw and rewrite the code, the logic and theories of platform regulation" and on the other, governments (such as the EU) are capable of "building the infrastructure needed to create a new machine."[128] This statement could then be applied to designing the Open Web Index. With LLMs (chatbots) answering queries nowadays, safe, secure and neutral indices (data) are needed as they have become the training fodder for these models, which also sustain the problem recursively. The OWI vision is to improve access to information and knowledge on the Web by countering disinformation as well as supporting "fact-checking" applications currently under development that intend to combat disinformation streams.[129] Moreover, it proposes to adhere to the data-processing laws, along with extending more control and autonomy to users by allowing EU citizens a "true choice" when selecting a search engine, where users (and researchers) would receive other search results than those of Big Tech's surveillance capitalism.

Besides the design of interactions and legal aspects of European digital (data) sovereignty that offers extensive legal protection in communication media, the OWI also envisions extending to users more agency in controlling their data in an era of surveillance capitalism. Having addressed Peter's burning planet, Section 230 and conspiracy theories, the often-stated approach to protecting privacy is that it is about individual and liberal personhood, however this is "inadequate in an increasingly networked world."[130] With the intention of challenging "world capitalism's accumulative and extractive ethos,"[131] the OWI does not intend to purport "data

[128] Bannerman, "Platform imperialism," 1821.
[129] https://www.ngisearch.eu/view/Main/OpenCalls.
[130] Bannerman, "Platform imperialism" 1821.
[131] Lehuedé, "An alternative planetary future?" 7.

colonialism," the extraction of life as data for profit.[132] Just as indigenous peoples, environmentalists and citizens worldwide demand that the fossil fuel industry "leave it in the ground," the ultimate demand to be levelled at Silicon Valley should be that data be left "in our heads."[133] A privacy first approach to search, with transparency and explanatory results would advance the way citizens worldwide could experience the democratisation of digital sovereignty, through a "fair and open information space."[134]

Democratising digital sovereignty

> Web search is a backbone of our digital economy and daily lives, but a few big tech gatekeepers control what we can - and cannot - find on the Web. This threatens neutral and transparent access to Web information and results in a huge economic imbalance as well as a lack of information sovereignty.[135]

Harkening back to the beginning of this article, Couture and Toupin's "claim that platforms are a new 'sovereign' is, in part, a rhetorical move."[136] Instead, attention could be given to critique along with addressing the "essential dilemma"—— understanding that digital sovereignty is an "ability to exert power in the world" yet it is relational, often built on the very erasures and power relations that it claims to redress.[137] In his article "An alternative planetary future? Digital sovereignty frameworks and the decolonial option," Sebastián Leheudé draws inspiration from Latin American decolonial movements concerned with planetary futures and technology, which oppose "the matrix of power that took shape during European colonialism in the fifteenth century."[138] Leheudé references the work of decolonial scholar Walter Mignolo, who proposes to reject capitalism and anthropocentrism and instead advances a "decolonial option" that seeks to enable alternatives to modernity by supporting "polycentrism;" however he did not discuss digital technologies in regard to coloniality. Thus, Leheudé suggests interrogating "digital sovereignty frameworks" that could expose the transformative potential of planetary politics by

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[132] Nick Couldry and Ulises Mejias, *The Costs of Connection: How Data Is Colonizing Human Life and Appropriating It for Capitalism* (Stanford University Press, 2019).

[133] *Davies, "Short Cuts."*

[134] Granitzer et al., "Impact and development."

[135] Open Web Search, "White Paper."

[136] Stephane Couture and Sophie Toupin, "What Does the Notion of 'Sovereignty' Mean When Referring to the Digital?" *New Media & Society* 21, no. 10 (2019): 2317, https://doi.org/10.1177/1461444819865984.

[137] Bannerman, "Platform imperialism," 1823–24, 1828.

[138] Lehuedé, "An alternative planetary future?" 2.

posing questions about the world order, in a way that would encompass non-extractive capitalism and make data systems work for social justice.[139]

In order to address how digital platforms are intensifying "the commercial datafication of citizens," Cammaerts and Mansell put forth a radical democratic approach that goes beyond "refashioning policy and regulation" and instead offers a "rebalancing of economic and public values in the contemporary digital platform era."[140] Public reflection could take up European values (transparency, accountability and inclusiveness) that embody polycentrism through the involvement of a panoply of actants,[141] along with incorporating a diversity of voices that could enact a "politics of listening."[142] As shown above, the OWI aims to embody European values such as trust and diversity that diverge from Silicon Valley's profit-driven and surveillance capitalist ideals. However, defending liberal and democratic values is not enough, because in order to "truly democratise digital sovereignty," the neologism would need to be "opened up to public reflection."[143]

Aside from public reflection and decolonial practices previously mentioned, Ananny and Crawford have called for initiating "novel digital platform policy and regulatory approaches."[144] Yet Pohle and Thiel argue that state powers cannot only be held accountable, or the attempt to "tame" large digital corporations by "subjecting them to democratic sovereignty" is not sufficient.[145] Instead, there needs to be a "balancing" of multi-stakeholders interests that incorporates "individual and collective well-being by invoking discursive power" in order to ensure democratic representation.[146] This echoes the concept of "feminist relational autonomy" that emphasises people's self-determination to "choose, control and transform one's own relations," which occurs at the community level where design is based on "inclusive and heterogeneous alliances outside capital and the state" and guarantees citizen rights.[147]

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[139] Lehuedé, "An alternative planetary future?" 3.

[140] Cammaerts and Mansell, "Digital Platform Policy and Regulation," 137, 148.

[141] Lehuedé, "An alternative planetary future?" 7.

[142] Bannerman, "Platform imperialism," 1828.

[143] Pohle and Thiel, "Digital Sovereignty," 14.

[144] Mike Ananny and Kate Crawford, "Seeing without knowing: Limitations of the transparency ideal and its application to algorithmic accountability," *New Media & Society* 20, no. 3 (2018): 973–89, https://doi.org/10.1177/1461444816676645.

[145] Pohle and Thiel, "Digital Sovereignty," 13.

[146] Cammaerts and Mansell, "Digital Platform Policy and Regulation," 145–46.

[147] Additionally, Bannerman states: "To achieve broader change, relational thinking must fundamentally foreground the relations that are the subjects of decolonial theory, critical political

Embodying these values and practices, the OWI infrastructure could then be understood as a public good, a federated infrastructure, which is trustworthy and neutral with distributed operations, designed to protect privacy and personal data, as well being open for future endeavours.[148] At the moment of writing the OWI is already crawling and indexing the web (8.12 billion URLs), respecting "robots.txt" and users' data that will continue in the coming years. Additionally, certain EU-funded NGI search projects will make use of the index as well as third-party recipients of the OWI's latest open call, in order to promote diversity and ethical search products of those using the index. Although there are risks and limitations, OWI's intention is to comply to all GDPR regulation regarding user privacy, with the removal of offensive content and detrimental sources when indexing that run against European values. Additionally, the concept of "declarative search engines," which facilitates index merging and splitting as partial indices, is central to the OWI's concept of using "open data."[149] Lastly, the Working Group Ethics has developed, in tandem with OWI's technical and legal groups, a "OWI Ethics and Integrity Readiness Check," which all programmers developing applications for the OWI will be asked to complete..

Thus, instead of promoting monopolised websearch by Google, the vision is that the OWI will improve European diversity and inclusion with its manifold applications in various languages (185 languages so far) and web analytics that support participatory and democratic discourses. In this way the OWI will underpin digital rights and principles for a future Europe that is "democratically curated," reclaiming sovereignty through diversity, although it covers the global public internet. This is more aligned with other European projects such as DECODE that define "digital sovereignty as the capacity to decide what the future of the economy and society will look like."[150] In their recent article, Herzog et al. put forth that digital sovereignty can "neither be solved as an exclusively (inter-) national nor as an individual's problem."[151] Instead of state sovereignty versus individual autonomy, or the user versus Google's *Big Other*, perhaps the answer lies in having individuals and state actors contribute to shaping media infrastructures that communicate information in unison, as a space where "hacker ethics and technological sovereignty interact with permaculture."[152] As a concerted effort, this "digital communality" would then instantiate an index for

economy, feminism, critical disability theory, critical race theory, environmental justice and intersectionality" (1827).

[148] Open Web Search, "White Paper."

[149] Granitzer et al., "Impact and development," 516.

[150] Bria, Francesca, "Reclaiming Europe's Digital Sovereignty," interview *Financial Times*, October 25, 2017, audio, 27:35. https://www.francescabria.com/talks.html.

[151] Herzog et al., "Digital sovereignty as an ill-structured (or wicked?) problem," 2.

[152] Lehuedé, "An alternative planetary future?," 9.

search that reflects another form of organization. Neither private, nor state, but federated and distributed.

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