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Emerging Technologies and International Law: DAO and AI Research in the Context of Globalisation

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ABSTRACT

The global political economy shaped by globalization is an environment that entails both potentials and limitations for research approaches. Important themes range from sustainable development goals, green transition, social justice disparities, technological issues to conflicts and complex emergencies. International law researchers deal with all these issues. International law and legal sciences as part of social sciences progress in a polysemic interplay with global trends. Research shapes values, beliefs and norms, and vice versa. To allow for the interplay in the creation of meaning by research activity on the one hand and cultural consciousnesses on the other, this paper discusses inter-disciplinarity – broadly understood – in research approaches using international legal research and emerging technologies, in particular artificial intelligence (AI) and decentralised autonomous organisations based on blockchain technology, as exemplary fields and themes. Since all sciences are part of cultural life of societies, they are mutually embedded in and dynamically connected to other societal forces. Globalization is a transnational social force that comes about in a complex orchestration among other forces, institutions and phenomena whether legal, cultural, political, economic, social or all. To isolate it or its effects on a research theme would be extremely difficult if not outright impossible. Therefore, this paper discusses globalization as a necessary element in international legal research.

Keywords: decentralized AI, inter-disciplinarity, emerging technologies, DAOs, globalization, critical microhistory and archeology

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Introduction

Since science and research fields are parts of cultural life, they cannot but interplay with other societal trends. Globalization is such a megatrend. Globalization is often understood as the capitalist system going global in various stages. It connotes worldwide expansion, integration, acceleration and intensification of capitalist markets, production, and financial systems making national boundaries and, therefore, national governments ever less able to influence outcomes for their populations, whatever policies they try to adopt. Legal consciousness travels with globalization. A well-known example of the consequences of globalization is the financial crisis and ensuing Great Recession (2007-2009) that was sparked by the overleveraged and extremely complicated financial products in the US and European markets. Even though other nations had little or no control over the financial markets, their regulation and governance in the Global North, their rupture in 2007-2008 resulted in a global crisis felling banks, bankrupting companies and causing austerity for individuals and groups across economies (Investopedia team, 2025). Capitalist globalization is driven by new profit opportunities, the transnationalization of production and the liberalization of trade, resulting in a deep impact on the economic, social, and cultural lives of world populations, especially since globalization also entails shifts in consciousness.

The growing body of public discourse frames technological power as an illegitimate seizure requiring urgent resistance. These techno-power developments have been described in various contexts, such as e.g. “great outsourcing”, the emergence of latter-day “*conquistadors*” and “overlords of online warfare” (Schaake, 2024; da Empoli, 2025).

This paper proceeds from two ideas of globalisation; the first idea is inspired by Michel Foucault’s concepts of governmentality and biopolitics. Governmentality refers to the governing and the consciousness (mentality) of

those exercising it. Governmentality refers to institutions, tactics, procedures that manage, guide, and shape the behaviour of populations, extending beyond the state to include self-regulation and expert knowledge. Biopolitics are the tools and technologies of governance deployed to optimise the biological life of populations – including health, longevity, productivity, and reproduction – for purposes set by the governing powers. Accordingly, globalization as a phenomenon of governmentality and biopolitics is marked by powers of capital and transnational corporations setting agendas for global politics, cultural movements and the lives of populations. Thus, in this view, the private entities drive globalization as much or even more than states towards a development of what can be called biopolitical Empire (Kelly, 2010, 3). Consequently, a state-centric governance research approach harking on legal dogmatics or uni-disciplinary doctrinalism does not begin to capture the interplay – between law as a research field and globalization – and thus does not produce accurate descriptions, explanations and critiques. If one were to proceed from a legal dogmatic perspective, the international legal sources doctrine and its codification (ICJ Statute, Article 38.1) could always be taken to allow for general principles of law to cover gaps, conflicts or even ambiguities as the Lauterpachtian tradition has it (Lauterpacht, 1933). However, a detailed dogmatic debate on doctrinal lacunae in technological contexts, such as the regulation of automated weapons systems or the applicability of principles, custom, and standards, falls outside the scope of this paper. Instead, the critical theoretical approach adopted here focuses on the interplay of technology, governance, and culture, an inquiry that inherently exceeds the boundaries of dogmatic analysis. As Casadei (2017) emphasizes, this perspective is “descriptive and normative at the same time”. It moves beyond describing existing norms to “expose the link between law and social reality”, revealing how law contributes to the construction of that reality and can serve as a lever for transformation. Consequently, the analysis shifts from the internal mechanics of the legal machine to the underlying

power dynamics and the lived experiences of subjects confronting technological change.

Further, as globalization is to explore here as a phenomenon of governance, mentality and biopolitics, this paper also addresses the globalization of consciousness, in particular, what Duncan Kennedy has called the third of the three globalisations of legal consciousness (Kennedy D., 2006). The third globalization of legal consciousness grapples with plural and contradictory legal paroles that are variations of the formulations inherited from previous eras (classical and social consciousnesses) particularly in the United States, and are “manifestations of chaotic legal response to the domination of the current neoliberal cycle by an economic and not a legal mode of thought” (Tomlins, 2015, 11). The third globalization of legal consciousness coincides with the United States as an unilateralistically behaving leading power after Cold War. It follows from these ideas derived from Kennedy and Foucault that globalization and legal consciousness are intertwined to the point that legal work (including research) always already is an inherent structural element of a globalization cycle – and vice versa. There is not one without the other.

As David Kennedy described (2016, 848):

Economic globalization means legal globalization; every crate travels with a packet of rights and privileges, every transfer relies on a network of institutions and rules. The internationalization of politics means the legalization of politics. Every agent of the state, of the city, of the region, acts and interacts on the basis of delegated powers, through the instruments of decision and rule and judgment. Indeed, globalization has fragmented both economic and political power, but it has not de-legalized it. On the contrary, even war today — asymmetric war, high-tech war, war stretched across a global battlespace, war of missiles and missives — is an affair of rules and regulations and legal principles. As a result, the problem is not to bring political or legal actors into law, but to understand and, where

necessary, rearrange the laws which constitute those actors, channel their interactions and influence their relative powers.

When globalization is understood in this way as biopolitical imperialism and travelling legal consciousness, it cannot but reflect and impact on research approaches and methods. A researcher of international law chooses methods that fit with the underlying ideas and the theory-basis from which they stem. Globalization must be one of those ideas as it cannot be extracted from the biopolitical life of the individual any more than from governmentality that uses law. Thus, it underlies and even precedes any choices about research theory, methods, and objects. In this paper, the theory-basis is critical theory in general and critical theory of law in particular. Critical theory or theories of law can be classified as party to social theory of law or sociological approaches to law, in which law is taken as a social phenomenon alongside other phenomena, institutions, langues, paroles, discourses. Therefore, it is approached with critical theory motivated research questions. Thus, law is regarded as not only researchable but particularly amenable to theoretical approaches and methods that have been developed across the many disciplines of critical social thought in general.

Often, the question of disciplinary rigor arises. The scientific criteria of, particularly, verifiability and falsifiability, demand that scientific quality be determined by publication of research results and the ensuing peer review. The peers can only scrutinise and, if desired, repeat – to falsify or to verify – a research if they are familiar with the research procedure and the underlying ideas. It is obvious that one cannot reproduce or simulate a laboratory study if one does not possess laboratory skills. In social science, research conduct rarely involves test tubes and microscopes yet the requirement of specialised research skills remains. While verification/falsification is only feasible once the theoretical basis, methods, and the process of applying the methods in the research are transparent and systematically conducted, a good level of familiarity is necessary for both the author and the reviewer (verifier/falsifier)

of the research. For these reasons, when discussing inter/multi/trans- or x-disciplinarity (Korhonen, 2021 and 2017), many are worried about methodical, theoretical and disciplinary cacophony or the situation in which a researcher/reviewer only knows one or, at best, two disciplines, their skills and tools sufficiently (Jacobs, 2014). This paper, however, does not regard this worry as a barrier to venturing beyond uni-disciplinary research, whilst also not promoting non-transparent cacophony (Martin, 2011, 42). This is because disciplines are cultural artefacts and, as such, do not reflect fault lines in reality, the natural order, or any necessary divisions in human cognition. They are institutional artefacts shaped by the interplay of knowledge and power in particular places; universities, research institutions and national science policies varying across the globe. As such, every critical scholar will raise questions about the border politics of disciplines and, consequently, end up in one or another variety of x-disciplinary research work (Korhonen 2021 and 2017). Various disciplines offer many theory-bases and methodical tools, styles and moves that can be adequately applied across disciplinary fields when sufficient knowledge of their science-philosophical roots (ontology, epistemology, logic, axiology) and manuals have been acquired. A well-founded effort in putting multidisciplinary bases and methods to use, coupled with transparent explanation of the whys and the hows, normally suffices – provided the necessary background has been acquired. Through cross-pollination, theory, method, research styles and moves evolve.

1. Globalisation, International Law Research and Technocapitalism

Globalization contributes to each research field through the power of capital and transnational corporations that impact global politics, cultural movements, the lives of populations as well as research institutions in a variety of ways. This paper uses international law and emerging technologies as an exemplary research theme. In social sciences, including international law, researchers are both concerned with various kinds of social, political and

cultural impact, of e.g. technology, and their research work in turn is assessed, among other things, by its impact on society including socio-technical change. The focus on impact is another feature of globalization and there are always underlying and subtle forms of power involved in the measurement of impact (Williams, 2020) that also need to be academically critiqued. Technologies are widely regarded as the main drivers of capitalist growth (Toivakainen, 2018) and, hence also, of societal evolution. From a critical perspective, a claim of a purely positive correlation between progress and technology is characterised as naïve technocapitalist optimism (The Consilience Project, 2021). Whether a law researcher is concerned with the drivers of social evolution or the various kinds of societal impact, they cannot avoid taking a stance towards globalised technocapitalist optimism or its critiques.

Technocapitalist optimism is ubiquitous in governance documents that often proceed from the technocapitalist growth-nexus, e.g. the *Innovative Finland program* (2021-2027, Valtioneuvosto, 2021). They posit technological innovation as the unquestionable determinant of the socio-economic future. In the words endorsed by the EU: “The fourth industrial revolution builds on already widespread digital technology [...] It is expected to be a significant factor in revolutionising society, the economy and culture” (Allen, 2022). This concept of industrial revolution is often encountered in technocapitalist governance discourse and it is used in a positive sense – as something that opens up new possibilities and futures. Indeed, rupture, revolution, bleeding edge, seismic shift and violent innovation feature as concepts of optimism, opportunities and hope when governance speaks of the impact of technology on societal future.

Whether technocapitalism adopts an optimistic or, much more rarely, a pessimistic outlook, it assumes that technology determines social life and change. Technological innovation is understood as a product of private enterprise and capitalist markets. In the case of blockchain or AI, for example, the primary impact of the emergence of these technologies is expected to be

that business and institutional operations are enhanced and global value chains expedited. It is assumed that, thereby, money, investment and labour are freed from the shackles of outdated manual tasks and increase growth when being deployed or forced to move elsewhere. Thus, while the governance language mostly describes technology development as a necessity for social progress and posits optimistic expectations, pessimists point to grave risks such as redundancies, structural shifts that challenge labour, populations and communities, extreme centralization of economic power, etc., that are known as the adverse consequences of globalisation. Whether optimistically or pessimistically, technology is taken as a social mover ideologically married with first mercantilism and now capitalism. It cannot but stimulate international competition, market efficiency, and contribute to an ever-intensifying economic globalization and privatisation that redistribute social goods among winners and losers, whether states, social strata, the North and the South, and/or generations.

While international legal research deals with international and global governance issues and tools, it can hardly ignore the driving role assigned to technological evolution in governance talk. As governance institutions seem to take it for granted that the available global resources and processes turn on technologies and the socio-technical change that ensues, these become vital concerns for law research too. How does law – as a social institution, as a technology of governance, as part of governmentality, as a system of rules – depending on the theoretical basis adopted for research interplay with technology in the global context? The interplay implies a more complicated relationship than one of causation or intervention; law does not follow or dictate to technology, nor technology to law. Legal structures embedded in and enabling global capitalism orient innovation, emergence, market access, visibility, market penetration and dominance, adoption, transfer, transport and further development of technologies. Technologies, their providers, financiers and governors co-structure the global capitalist landscape. Thus, both the private and the public sectors are involved in what kind of socio-

technical change we experience and when. As above, governmentality and technology intertwine. Laws and regulations permit, shape, enable, and constrain. In Lawrence Lessig's work, digital technologies, code, culture and markets co-shape each other (Lessig, 2000). The gaps, conflicts and ambiguities within legal frameworks are no less important than recognised legal boundaries for socio-technical changes and their feedback loops.

2. Globalization and Multi- to X-disciplinary Approaches

To research emerging technologies and their interplay with international law, one starts by mapping the terrain and the underlying consciousness. Although international law is “international” by name, it does not and has not come about through any universal democratic process of international law creation, and, ergo, all international legal subjects and persons are not equally consulted, involved, participating, or even represented. Similarly, emerging technologies – even if they aim to spread widely through the World Wide Web and global value chains – are neither equally nor equitably distributed or distributive of their opportunities, impacts, solutions, risks, harms and benefits.

According to the theoretical basis of globalization identified in the Introduction to this paper, a law/technology research agenda must start from the mapping of power and the main players in both the governance efforts that use international legal tools and in the fields of emerging technology (Korhonen and Markovich, 2021). One must reflect where the power/knowledge centres are, whether they are the same for governance/law and technology, who set the agendas and terms of governance discussions, which technologies seem to be favoured, how different emerging technologies are discussed, compared and assessed, which actors seem to get their concerns addressed, who collect gains, who lose out and for whom compromises and settlements are available when there is harm or loss. Only after having at least an initial map of the knowledge/power centres, their

governmentality, distributive consequences, terms of discussion, and actors, one can proceed to identify research themes in the critical theory framework (Korhonen and Markovich, 2021). The virtually opposite way of approaching research in law and technology would be, for instance, the taking of a governance document, e.g. the EU AI Act (Regulation (EU) 2024/1689) and proceeding with a non-social-theory-based doctrinal analysis of its rules to identify their ordinary meaning and little else. This paper argues that such doctrinal analysis would fail in accuracy if forced to make interpretive assumptions without the above-described initial mapping operation; also, a legislative impact analysis would be impossible without an accurate understanding of the terrain of implementation. If one only inquires into a governance tool – a law or policy – and not to the background ideas and the phenomena in which one seeks to intervene with it, half of the interplay is missing.

Thus, it becomes evident that for the mapping of the terrain, in which law/technology interplay, one needs to engage in a variety of other-disciplinary (x-disciplinary) efforts (Korhonen 2021 and 2017). X-disciplinarity meaning that in order to do justice to the boundless character of methodological innovation including modes of methodology-resistance, the overarching concept is changed from “inter”- or “multi”-disciplinary to x-disciplinary approaches in which in the x is the placeholder for any desired prefix from inter to multi, from pre to pan, from anti to counter-disciplinarity and beyond (id.). Proceeding from the Foucaultian and Kennedian frameworks discussed above, power and knowledge concentration appears to cohabit with the main technocapitalist centres: the Global North, America, Europe, and China, along with the private and public institutions they sustain. It is within these centres that the third globalization of legal consciousness (Kennedy, 2006) with its economics-prioritising doctrines reins served by a chaotic mix of neo-liberal, social, and classical legal instrumentations. The third globalisation, unlike the first (Classical) and second (Social) phases, is fragmented to competing projects aiming at for normative reconstruction of

market, societies, cultures and the lives of populations. It advances both neo-liberal austerity and individualistic, superficial human rights. The third globalization of legal consciousness is manifested in the policies of international public and private actors that spread the terms and the logic of the ideological, economic, and cultural battles between the imperial North and the target South (id.). On the target end, where resource extraction occurs, one also finds the usual suspects: the raw material producers in the Global South, the providers of cheap labour and race to the bottom opportunities, and the ecosystem more widely – all of them understood, primarily if not solely, as essential material and service providers for the inevitable progress of globalisation. For investigating their socio-technical consciousness, one has to look into the governance discourses around emerging technologies – where they are naively optimistic and where not; whether global-scale social justice, sustainable development, and values-norms-beliefs-prioritising arguments appear or which other kinds of frames are used (e.g. Sovacool and Hess, 2017). One also inquiries into which actors push which kinds of governance agendas and what kind of governmentality and legal consciousness emerge. This is how the theory-basis orients the researcher's intention when identifying themes and foci of research.

Based on the theory that globalization is marked by powers of capital and transnational corporations that deeply impact, among other things, the lives of populations in the manner of a biopolitical Empire, one can problematize the various generations of the internet and the technologies that emerge for global digital economies. For instance, the second generation of internet (web2) was marked by the first consumer encounter with artificial intelligence that platforms used to power the attention-maximising algorithms of social media. It also coincided with the third globalization of legal consciousness – where, e.g. the social good as a policy goal kept losing to neo-liberal ideologies. The web2 era also concentrated economic and epistemic power in the hands of the megatech companies (e.g. Microsoft, Meta, Alphabet, Apple, often identified as the FANG+), Silicon Valley, and

the Chinese technology giants. They were the ones who experimented and perfected a host of attention-maximising algorithms on their human-computer interface, deploying AI tools long before the generative-AI-for-the-consumer boom led by ChatGPT started in 2023. During this era, the biopolitical consequences have been severe: social polarisation leading to political ruptures that manifest in austerity, cutting of aid, demolishing social, health and refugee assistance, social media addiction, doomscrolling, shortened attention spans, and other psycho-social issues, confusion in the face of fake content, deep fakes, proliferation and conspiracy theories, deepening of the digital divides etc (see e.g. Ryan, 2026). Also, privatisation has upped a gear globally when public entities tend to procure the most well-known, i.e. private digital providers even for essential government services including social, health and education branches. It became accepted as the new normal that governments, agencies, and even courts fully dependent on e.g. Microsoft and medical services on e.g. Abbott for their functioning, while the platform economy (web2) and its underlying technologies were criticized for hijacking public goods. As the Consilience Project (2021) put it:

(T)he epistemic health of the public sphere does not happen automatically. The institutions that used to fulfill this role — universities, schools, news organizations, and, most importantly, the public itself — have been unable to prevent social media companies from privatizing the public sphere. Rather than serving the key function of enabling successful self-government at scale, the public sphere has been monopolized to serve the extraordinarily narrow interests of social media companies: amorally increasing time on site, engagement, ad revenue, profits, and power. This would be bad enough from the perspective of maintaining a healthy democracy, but it turns out that the most effective ways for social media companies to maximize their metrics are by stoking precisely the misinformation, intrigue, and partisan polarization that characterize an unhealthy public sphere.

The biopolitical Empire fuses power with private infrastructure as a state-corporate nexus. The ICC/Microsoft episode illustrates how the US executive did not bypass Microsoft but *operated through it*, using a digital dependency as a geopolitical instrument. We witnessed hegemonic power exercised in concert through public measures and private chokepoints, making it difficult, if not impossible, to address through international governance tools, including law.

From the identification of the theme, one can proceed to research questions. Based on the above example of investigating web2 phenomena and the accompanying governmentality, one could inquire into how institutions seek to maintain a healthy public sphere; what governance measures are taken against the subversion by social media companies and how the latter respond; how the monopolisation of the public sphere takes place and how could it be mitigated through governance, how systemic change occurs in these circumstances, and what kind of interventions may be made in it; what kind of cycles and feedback loops these produce reciprocally. And, more specifically, one can formulate a research question, e.g., on the role of AI in the monopolisation and privatisation of the public sphere, and the role and chance of international governance tools, including (international) law, as levers of intervening in these developments.

One feature of the hijacking of the public sphere is the dependency and realised risk scenarios in international institutions, such as the International Criminal Court (ICC). It illustrates the new normal that developed during the web2-era and is only deepening. In 2025, the ICC was forced to break its extensive digital service contract with Microsoft and find a less-risky open-source provider after having experienced several denials of service by Microsoft. In this scenario, Microsoft functioned as a delivery system of retributions and sanctions towards the ICC Prosecutor's office by the U.S. Oval office that concerned the investigations and war crime arrest warrants issued against Israeli leaders (Tridgell, 2025). The ICC's case also raises the concern whether an international justice organisation and the perpetrators that

it investigates should depend on the same cloud provider. In this case, Microsoft provided a variety of services to the ICC among the other major international institutions as well as the Israeli Defence Force (IDF) – storing and handling data and evidence relevant for all. While cloud security, as any other digital security, is far from absolute, risks exist far beyond the obvious political ones (Bomont, 2025).

3. Examples: International Law Research of Decentralized Autonomous Organisations (DAOs) and Artificial Intelligence (AI)

3.1 Critical International Law Research into DAOs using Microhistory

Decentralized Autonomous Organisations (DAOs) have been made possible by emerging digital technologies, such as blockchain, recent developments in cyberspace, Web3, i.e. The Internet of Value (Korhonen & Ala-Ruona 2018, Rantala 2018) and through shifts in governmentality. Although there are studies on the societal impact of the blockchain and other emerging technologies (e.g. DeFilippi & Mauro 2014, Rantala 2018, Finck 2018, Hildebrandt 2016), there is no critical overview of the new subjectivities that are claiming agency in the global digital realm. Technocapitalist optimists would list dozens of potential benefits and applications of blockchain technology for sustainable development (“Blockchain4SDGs”, see e.g. Fraga-Lamas & Fernandez-Calames, 2020). DAOs as new blockchain-enabled actors, issuing identification documentation, toiling in a multitude of fields from finance, agriculture, waste management to conservation, may gain aspects of international legal personality and thus occupy spaces alongside traditional actors and institutions, although their legal aspects are immature. They are “an instance of institutional evolution” (Davidson, De Filippi, Potts, 2017). In the biopolitical Empire, legal subjectivity increasingly rests on functional thresholds rather than state recognition. This anchors DAO subjectivity in their jurisgenerative capacity via code-as-law, aligning with

Ryngaert's (2016) view that non-state actors gain legal space through functional authority and active participation in norm creation. It is important to look into their constitutional designs, their weaknesses and fortes, their potentials and limitations in order to learn to work with, beside or against them (Minn, 2019), and not fall into unexamined technocapitalist optimism or its opposites. It is also crucial to ponder whether and how they might impact and be impacted by present governmentality and the strive for the biopolitical Empire. This becomes consequential when DAOs are combined with AI decision-making capacity. AI-governed by smart contracts and decentralized, these tend to create accountability vacuums that current international legal frameworks have difficulty to follow.

While mainstream media often portrays web3, DAOs and blockchain as experimental and unsustainable technologies, the acceleration of the emergence of numerous DAOs coincides with the twilight of the international institutionalisation era (Korhonen, 2017). For already one to two decades there has been a rise of political actors advocating scepticism or worse against international governance institutions in flagrant contradiction with sustainable development goal 16 which emphasises measures to bolster peace, justice and strong institutions. Many phenomena testify to it: expansion of Trump/MAGA-style populism, exits and exit threats from the ICC, the WHO, the UNESCO and other similar institutions, exits from major treaties e.g. the Paris Climate Agreement (2015), the European Convention of Human Rights (1950), Brexit, China-sponsored alternatives to Bretton Woods (Korhonen, 2017), and Trump's Board of Peace. In such circumstances it is ever more difficult for international governance institutions to act vigorously and swiftly in high-impact issues such as the climate change, ending conflict cycles, alleviating poverty, providing finance and banking to all, achieving equality, and many others. In the DAO-sphere, there is a diverse range of actors experimenting with novel web3-technologies, many of whom wish to operate outside traditional socio-political structures and institutional architectures – manifesting a desire to

break with the globalization of legal consciousness (Kennedy, 2006). DAOs can be likened to digital social movements with the difference that, from the outset, they seek permanent, immutable structures in algorithmic architectures, even digital constitutionalization, aided by blockchain and AI. While DAOs have been around for the past 10 years, they have not (yet) matured to wield power in the manner of the leading global non-governmental organisations or companies.

“A DAO is an algorithmically-governed programme that, in using trustless decentralised computing, can serve as a way to formalise multilateral relationships or transactions outside of traditional legal architecture” (McKinnon et al, 2014). DAOs are built on blockchain that is defined as “a new institutional technology” (Davidson et al 2017). Together with UNESCO, the Bitexplo 2017 awarded its annual Grand Prix to a DAO called BitNation for its refugee emergency response program including the issuance of identification documents to refugees (Lant, 2017). BitNation proclaimed to be the world’s first decentralised borderless voluntary nation but has since disappeared from the digital sphere. Its disappearance is itself a research finding that a microhistorical method documents. The failure conditions, pivots, and false starts are primary data since the archaeology of what did not survive and why illuminates the power/knowledge constraints that the biopolitical Empire imposes on challengers and novel institutions as much as or even more clearly than success stories do.

Other blockchain-technology based DAOs offer decentralised energy grids, new models of natural resource conservation, platforms for circular economy, accessible finance to the poor, and more equitable North-South partnering for sustainable development goals (SDGs). They utilise blockchain technology, smart contracts often adding artificial or adaptive intelligence elements. The increase of decentralisation increases the risk of governance and societal fragmentation, lack of oversight and control by public authorities. Therefore, it is paramount to ask whether or not, and, if yes, how emerging technology-based organisational innovations may provide vehicles for

reimagining the global institutional landscape. Although the number of DAOs exceeds 50,000 (Deepdao.io, 2025), there is sparse research on their activities and impact. The “proliferation of DAOs is linked to the concept of decentralized autonomous society (DAS)” (Fraga-Lamas and Fernandez-Calames, 2020). Looking into such new phenomena is part of the large academic endeavour of mapping cyberspace (Tsagourias, 2015) and asking critical questions about governmentality and legal consciousness shifts there.

In order to analyse the emergence of DAOs, a group of researchers took on a critical research project (CIDS, University of Turku and Academy of Finland, 2022-2026) to look into those DAOs that support SDG-aims. The research project was called Critical Inquiry into Sustainable Development Supporting DAOs and utilised microhistorical deconstruction involving a close examination of specific events, discourses, and practices within DAOs. The goal was to unpack and challenge dominant narratives and binary oppositions, such as centralisation versus decentralisation and sustainable versus non-sustainable. The research revealed contradictions within DAOs, highlighting the multiple, and sometimes conflicting, meanings and interpretations of key concepts, namely decentralisation, autonomy, and ethical conduct.

The research questions included whether internal governance of the DAOs is in line with their aims, in particular, how well they accommodate pluralism, support internal relations, equity, global distribution, participation and empowerment; what kind of international legal personality and agency could such emerging technology based organisations achieve, why or why not would they wish to achieve legal personality, what they need to fulfil their aims; what their impact is on the twilight of international institutionalism (Korhonen, 2017); and how they envisage to improve human and social interactions (Rantala, 2019). The project focused on DAOs that dealt with the SDGs relating to equal finance and environmental (including climate) objectives, the interrelated goals of no poverty (SDG1), affordable and clean

energy (SDG7), reduced inequalities (SDG10), climate action (SDG13), life on land (SDG15), and partnerships (SDG17).

Although the DAOs often have a difficult time overcoming the association with the ill-faithed experiment called ‘The DAO’ and thus being dismissed as either risky scams or utopian dreams (DuPont, 2017), such dismissal overlooks their role as potentially serious novel actors of the platform economy and Internet of Value, and as vessels for transindividuation (Rantala, 2019). Emerging technologies have always produced both good, bad, intended, unintended, mixed and uncertain societal impacts. There are DAOs in a variety of fields, e.g., *Sarafu-Credit*, an interest-free community based credit system supported by the Red Cross of Kenya; *CuraDAO* initiated by the Caribbean Blockchain Network to fund social impact projects in Curacao; *UnionChain* aiming for food safety and more inclusive agricultural finance system; *The Commons Stack* to sustain public goods through community governance; *Swachhcoin* to enable responsible and sustainable waste management; *Seeds* to distribute value to initiatives that deliver favourable outcomes for environmental & societal regeneration etc. A tentative listing of 79 such SDG-supporting DAOs has been published (Korhonen *et al.*, 2021). The researches took a sample of those DAOs and approached them with critical microhistory to produce narratives, impact analyses, and inquire into the tipping points of their projects.

The research showed that many DAOs, sprung from a grassroots level perception that existing centralised governance institutions, are not achieving SDGs and not going about their core tasks adequately or quickly enough. Part of the frustration with contemporary institutions (Korhonen, 2017; Rech and Grzybowski, 2016) was and is channelled into do-it-yourself-SDG-projects that emerging technologies enable (Mähönen, 2018; Buescher, 2016; Rantala, 2019). Yet, any increase in decentralisation increases the risk of governance and community fragmentation, lack of oversight and control by public authorities, although any potential of digital platforms to rekindle the interest of the public in exercising their democratic rights is also welcomed (Feichtner

and Gordon, 2023). Thus, there is a meta-level dilemma between, on the one side, decentralisation, increased localisation and grassroots activity and, on the other side, the SDG16, which sees strong institutions as guarantors of peace and justice.

While DAOs, as yet, do not wield economic or political power to any significant global extent, they are a manifestation of the post-institutional and a-localised consciousness affecting governmentality and desiring a break from biopolitical Empire. In the research project, the theoretical basis was critical theory and the methodological approach critical microhistory which focused attention to the small-scale, lived experiences beyond grand narratives and linear progress analyses. The critical theory basis oriented focus on issues of power/lessness. In order to produce a richer contextualised landscape of the web3 phenomena, researchers developed a variety of DAO-narratives by highlighting the agency of smaller players — startups, software developers, and online communities — whose contributions were often obscured in other accounts that tended to list the largest, best financed, and the most well-known actors. Microhistory was useful to uncover the heterogeneity of agency and goals within the global digital space, challenging simplistic and conformist views.

DAOs often sought to act differently than traditional organisations e.g. through refusing to build traditional hierarchical governance structures. They seek to invent and distribute decision-making power among members in novel ways, e.g. awarding engagement and social contributions instead of financial staking. Shifts toward decentralised governance raised questions about how DAOs function in practice, how (legal) responsibility is borne, how decentralisation affects accountability and agency, and whether the choices made render alternative ways of social organisation when compared to traditional models and legal structures.

Microhistory uses both social and cultural accounts asking how an ordinary person or group saw their lives, what meanings they gave to the things that happened to them and how they experienced bi-political power. Critical

microhistory traces elements close to what Roland Barthes analysed as the creation of the ‘reality effect’ (Barthes, 1968; Korhonen, 2000). With a critical bent, microhistory sought out marginalised individuals and communities, overlooked events, and material over abstract facts (Chekanov, 2024). Critical microhistory as a methodological frame emphasised postmodern relativist and localised view on subjectivities and their structural constraints (Foucault, 1972). The analysis aimed at revealing gaps, conflicts, ambiguities, inconsistencies and dark sides by foregrounding the rich variety and versatility of lived experiences of those whose images will never ornament the pages of history books or the halls of power. In Gupta’s words (2025),

(b)y bringing marginal events, stories, individuals, to the forefront — for instance a legal dispute, a folklore, an archive of survival, poetry, etc. — (microhistory) uncovers how average individuals navigated the larger structures of polity, economy, and society. In this sense, it also restores agency to the “ordinaries”, besides imposing complexity and plurality to historical understanding.

Microhistoricising aims at richer, more detailed pictures of small, seemingly isolated actions and subtle turning points in which the insight into failures, bankruptcies, pivots, and false hopes are as or even more valuable research results than the identification of any best practices. For researchers, nonlinear perspectives open new ways to grasp the complexity of emergent processes. Microhistory, with its focus on actions, individual aspirations and agencies, choices and constraints, showed how small-scale developments and shifts affect change without the whistles and bells of the so-called main events. Outside, the DAO-project, a great example of an auto-microhistory is that by Philip Agre in the field of AI unpacking how emerging technologies reflect and reinforce the biases of their creators, the agency of their users as well as that of developers, challenging traditional research frameworks and encouraging a more nuanced, reflexive engagement with socio-technical change (Agre, 1997).

3.2 Critical International Law Research into AI with Foucault's Archaeology

AI is often framed as an unstoppable force tied to a perception of the inevitable global expansion of capitalism colonising every corner of the world, including the digital space. Within legal research, AI phenomena are taken as givens of the market economy. They are tackled with a combination of risk management schemes and seen as emanations of technocapitalist global progress, even if flawed in many ways. It is understood that AI phenomena need to be tempered through a thinner or a thicker veil of legal safeguards, audits, and sanctions. While such governance approaches demonstrate business as usual, they fail to dig deeper into the socio-technical phenomena, their constructive layers and intervention possibilities. The European Union (EU) does propose a safety-by-design principle (EU AI Act, 2024) according to which safety mandates would have to be taken into account before an AI product is rolled out, i.e. already when the product/application is at the design phase. This is a familiar approach dating back some decades as Lessig and others emphasised the need to intervene or, at least, communicate about socio-legal goals with those who construct and, indeed, design the digital realm and its artefacts (Lessig, 2001). It has thus been recognised for some time that policing technological inventions *ex post facto* is much less efficient and effective than moulding their shape and functions at the design phase – or more generally at the cultural level (*id.*). There are many actors, such as the Centre of Humane Technology, that educate and offer courses to engineers, technology designers, managers, coders etc about societal and ethical principles that should be embedded in products, applications and solutions in all phases of the research and development cycles (Centre for Humane Technology, on-going); yet, quickly moving R&D projects rarely allocate their staff any time to sit down to learn about society, ethics, and how to translate these into their projects. The immense power of Big Tech archons encourages moving beyond hard law. Neoliberal governance tends to favour flexible soft-law instruments that, as Tramontana (2017) argues, enhance the resilience of international law by

offering adaptability and inclusiveness in the face of complex global challenges and the growing role of non-state actors. These instruments appear nimble and agile, aligning with prevailing socio-technical governance discourse. Multilevel governance helps bridge accountability gaps between state-centric law and Big Tech's private power, while an archaeological method uncovers the power relations baked into AI's black box prior to deployment. Archaeology as a critical research method peels the layers of discourse, uncovering power dynamics, socio-political and cultural choices that are baked into the black box of AI before applications are even rolled out.

In order to be able to influence technological design and embed societal goals in technological innovations, a reciprocal multidisciplinary engagement is warranted. A polylogue between researchers and developers would need to find common vocabularies. Technological development is usually most constrained by funding and market access; yet the understanding and predicting of legal ramifications are also crucial for success. While investor expectations often lead processes with speed and 100X-profits as priorities, there is considerably less if any time for inter- and multidisciplinary polylogues, finding new vocabularies and learning to embed societal goals into technical problem solving. The difficulty, however, does not mean that society needs to succumb to technological determinism. It is a false necessity to say that there is no alternative. Although many believe that we cannot but learn to accept inventions with whatever risks they entail and contend ourselves with ex post facto mitigation of harms that our legal systems may be able to provide. To work against such nihilism, a group of researchers (AICrit project, Business Finland 2025-2027) decided to look into AI through a knowledge-archaeological approach to find and question choices and leverage points for making and understanding AI otherwise.

In exploring the archaeology of knowledge, a good starting point is to consider how the production of discourse is controlled, selected, organised and redistributed (Foucault, 1972, p. 216) by the gatekeepers of the archive, which Derrida (1995) calls the archons (Derrida, 1995). The archons gatekeep

the archive, i.e. the system that determines discourse, the what can be said (Foucault, 1972). The archons of AI today are megatech corporations that control hardware (e.g. GPUs) and data (clouds, data centres, repositories, platforms), and their creation through investment, R&D initiation and procurement. When we encounter AI as consumers or governance experts, we do not see the archive since it is built into the architecture of the models themselves—training data, weighting of parameters, and the reinforcement learning from human feedback (RLHF) and other technology stack and network layers. In looking at intervening in AI – including the black box problems of transparency, erosion of data and digital autonomy, extreme concentration of media, epistemic and cultural power – the researchers employed the Foucaultian archaeology as a method (Foucault, 1972). They proceeded to analyse the strata of past computing architectures from mainframe centralism to decentralised web protocols, which revealed, among other things, that the current move toward massive, centralised large language models (LLMs, e.g. Google’s Gemini, Meta’s Llama, OpenAI’s GPT) is a market-political choice, not a technological necessity. Applying the archaeology method and finding out about the various temporal dislocations during the history of AI development showed that our current encounter with AI phenomena and what we make of them are but one discursive formation among many possibilities constrained again by governmentality, globalization and biopolitical power. An archaeological study of an AI architecture revealed below-the-surface rules of formation – biases, exclusions, and power dynamics — that are baked into the black box (how an AI performs its functions) before it generates a single word.

As all digital products, AI solutions are coded, and code can be analysed as a discursive practice in the Foucaultian archaeological sense. It becomes evident that AI is much more than mathematics and logic; it is a practice that originates from and organises social relations in a sense that Foucault discusses such practices (cf. Foucault, 1972, 45-46). Therefore, AI research and development (R&D) processes, and, later, rollout and use architectures

define labour and identity in addition to market – and vice versa. Instead of thinking of AI as a series of timelines (e.g. history of neural networks), it can be seen as a series of power shifts when investigated with the globalization and archaeology approaches. Far from emanating from neutral, autonomous and independent innovation, the capitalist and global governmentality have driven, through spurts and speed pumps, the R&D of AI towards a discursive formation compatible with maximisation of market penetration and concentration, creation of complex dependencies and technological fiefdoms. Thus, instead of the illusion of a technological progress narrative as a sequence of eureka by individual programmers leading to the technology stack as we see it today, we encounter AI as deeply embedded in the interplay of power/knowledge, biopolitical Imperialism, and the third globalization of legal consciousness (Kennedy, 2006).

An archaeological critique of AI reveals the physical and spatial reorganisation of the world into server farms, undersea cables, and specialised zones – a material architecture of biopolitical imperialism, some weighted to different kinds of extraction and others for accumulation. The LLMs have created a heterotopia — a space that is outside of all places, yet exerts power over the physical realm, extracting resources and energy (cf. Foucault, 1984). AI as a discursive practice seems to have reached the threshold of scientificity without being required to be transparent about its threshold of positivity, i.e. its messy, biased, human-discursive dependencies (id.). Through archaeology, the researchers attempted to peel back the discourse to examine earlier stages, thus lessening the reality effect of the inevitability of the present AI. The research group moved away from asking what AI does and, instead, asked under what kind of rules of formation these specific functions and phenomena became possible, what kind of agencies were involved, and how AI functioned in the frame of globalisation.

The two research examples presented in this paper are illustrations of x-disciplinary method applied to emerging technologies. The application to DAOs shows how collective movements organise and utilise emerging

technology outside centralised institutions. The archaeological inquiry into AI phenomena makes clear that e.g. the centralisation around large language models is a market-political choice, not a technological given, and that the tech-stack as the archaeological sedimentation contains many similar choices and levers – even when appearing as a TINA (there is no alternative), a given, a granted precept. Research into AI systems that are governed, trained, and deployed through decentralized architectures rather than through server farms and data monopolies of megatech corporations deserve more attention. Decentralized AI distributes both computational load and epistemic power, potentially interfering with the concentration of the *archive* that Foucault's archaeological inquiry questions as a structural chokepoint. Whether decentralized AI delivers alternatives, or whether it enhances disintegration and polarisation, reproduces the same power asymmetries in a new technical form, or withers into oblivion, lends itself to further critical inquiry.

Conclusions

Although inter-, multi- or x-disciplinary methods seem necessary in international legal technology research, they both complicate and increase the accuracy of the task of the researcher. Venturing into the interplays of social institutions and technologies is always a demanding learning process, as scientific research is supposed to be. There are underlying consciousnesses, biopolitics, governmentalities, historical shifts, microhistorical pathways, archival logics, and archaeologies to be reckoned with as has been argued in this paper. All the above concepts emanate from rich philosophies as they try to make sense of the working of the world and, subsequently, compress their results into conceptual shorthands – kinds of super-charged terms of art that hold entire worldviews. In this paper, these superterms were used to investigate the current cycle of globalization and how it impacted research in international law and emerging technologies. It may thus cross a researcher's mind, especially when pressed by academic performance reviews and the

requirement of the maxing of the quantified research results, that a unidisciplinary methodology in comparison to the above problematques seems as inviting as a hygienic petri dish in comparison to a swamp or a sewer. However, a social scientist, such as an international law researcher, must remember that if something appears to work or even thrive in a petri dish, it indicates precious little about its role or indeed its survival in the swamp or the sewer for the specific questions this paper pursues. It does not follow that research should best be generalist, abstracted to difficult neologisms and superterms, primarily conceptual, or deductive. To illustrate, this paper introduced the example of the critical microhistorical approach. Against the background of the idea-complexes implied by globalization and the other philosophical superterms that were employed, the example of the microhistorical research on DAOs enabled concrete, material and lifeworld-level engagement with ordinary people as they navigated emerging technologies in their rich contexts. Also, the example of the archaeological approach to AI showed how the researchers first participated in the megaproject of mapping cyberspace and raising critical issues, yet proceeded to the focusing on specific levers and choices with which governance and law would interplay.

It also seems that international legal research owes a family allegiance to other sciences, especially the social ones. Research lives in connection, co-dependence and cross-pollination with all life-phenomena in which the researcher is embedded and situated. The law, the law researcher and the world are necessary to one another's existence. Through the researcher as a situated human being, the life-world creeps into legal research even if one attempts to conduct it in a petri dish. The researcher is not only conditioned by their pre-understanding, training and socialisation but also by the ongoing constraints of their work, funding, academic and organisational culture, supervision, levels of academic autonomy, required hours, salaries, work-life balance, and the other intra- and extra-institutional structures. These factors exert a heavy influence on the research orientation and performance.

Furthermore, the fear of x-disciplinarity (Korhonen, 2017; 2021) as a chaotic mess is understandable in the sense that no one has been able to arrive at the final truth, e.g. about globalization, Empire or governmentality, including the part that (international) law plays in them. And, thus, research results about globalization phenomena are not easily served as soundbites or popularised messages putting scientific breakthroughs in 280 characters or less – that are expected by the public and those controlling funding. Entertaining an aversion towards chaotic complexity, however, goes against the very curiosity that is the precondition of scientific work. Doing research is about diving into the swamp of chaotic data and trying to come up with ethically-grounded observations about it, not about ending history with the final truth of it all. Research is also about surviving the research environment, research institutions and funding schemes without becoming so result and impact-driven that one has no capacity to hold space for the enormity of what we do not know or cannot understand – and, therefore, what we tend to label and try to dismiss as chaotic and messy.

The choice between complexity and centralised reduction shapes which governance possibilities become visible at all. Dominant paradigms of AI development, governance, and critique tend towards centralisation – as it seems efficient, quicker and more manageable. A research programme that takes decentralization as a starting point in both technical architecture and governance option offers a disruptive potential. Existing frameworks presuppose conditions that decentralized AI is designed to dissolve. The theoretical tools assembled in this paper, combining Foucaultian archaeology with critical mapping of power and knowledge centres and microhistorical attention to grassroots' innovations and movements, tackle the conditions for redistribution of epistemic and economic power, for whom, and at what cost. Even though this paper sees inter-, multi- and x-disciplinarity as necessary approaches in international law in the context of globalisation, one cannot prescribe them. There are times when one cannot even recommend them. In fact, it seems that the very phenomenon of globalization that calls for x-

disciplinarity, also brings on surveillance capitalist techniques and practices that pressure research towards a reductive mode. Thus, many funding organisations prioritise low-risk projects with streamlined questions and uncomplicated methodologies. Often, a successful proposal is characterised as one that can guarantee its expected outcomes, in specific terms, before the start of the grant. Such priorities dissuade complex inquiries into the unknown linking megatrends, multiple themes and disciplines. Globalisation-driven research policies may see unidisciplinarity as more efficient on the basis that researchers stay in their lanes and are thus easier to surveil and control. On the other side, populist criticism also often targets scientific experts as lapdogs of globalist elites and seeks to discredit science as an institution. Through funding, public media and various kinds of oversight, e.g. evaluations, these pressures push research into channels and approaches that seem to offer immediate, easily-communicable gratification, e.g. applied science, rather than long-term contributions to the mapping of complex terrains, e.g. basic research. Despite such structural pressures, already Bloom's Taxonomy (Anderson and Krathwohl, 2001) showed that the highest orders of learning – and, analogously, also of research – entail critical and creative thinking which necessitate methodological exploration, challenges to paradigms, and doing academic work otherwise than the canonical, established modes propose. In order to work otherwise, one must take disciplinary chances in inter-, multi- and x-disciplinary ways.

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