[Online lecture] "You can't stop the signal": From the past to the future of digitally mediated sustainability due diligence? - a lecture with Prof. Larry Catá Backer[1]

Asser Institute: Center for International and European Law & University of Amsterdam Law School–
[Spring Academy] Technologies of sustainability due diligence: Digital tools and global value chain regulations
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Executive Summary: Regulatory governance is well within a process of transformation from a managerial system deeply embedded in the classical model of the rule-of-law state grounded in positive (or customary) law pronounced by an authoritative body clothed in the legislative power, to the world of the panopticon and the disciplines. Social relations and the institutions that support them are moving from physical to virtual spaces, from markets to platforms, and from managerialism to techno-bureaucracies. Within these techno-bureaucracies administrators articulate norms and objectives which are translated by coders into generative systems that then undertake their development and application. The transformation becomes decisive as language, standards, and operations become opaque to non-specialists and extra-administrative accountability weakens. That movement is at the heart of the operationalization of technology enhanced due diligence in the field of business and sustainability (including human rights). These remarks consider the role of technology in the evolution and application of sustainability due diligence systems. It is framed by three sets of ordering concepts. The first speaks to the move in perception from static to dynamic drivers of governance bound up in the concept of the "signal." The second focuses on the construction of two interpenetrating sets of operating systems in this static to dynamic environment–systems of diligence and big data tech systems. The third considers the broader context shaping manifestations of tech and diligence systems . These include (1) the movement toward alignment of public policy and private activity (especially in the context of economic activities); (2) governmentalization of private sector activity; (3) the rise of compliance based accountability (quality control) governance; (4) the revolution in the normative valuation of human rights and sustainability as both a set of culturally superior expectations and legal requirements; (5) the revolution in the methods of assessment and accountability; and (6) the migration of these functions from the realms of human-centered textualist language-consciousness to coded data centered systems of assessment against ideals, both of which may be managed by generative intelligence. That is the "signal" for which technology is both essential and essentially transformative. The remarks end by considering the reactionary and revolutionary potential of the alignment of these two sets of operating systems.

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Good day everyone. I want to start by offering with great thanks to Antoine Duval here at the Asser Institute and Klaas Hendrick Eller, at the University of Amsterdam, for their most gracious invitation to offer these remarks with which to end the first day of this Spring Academy on Technologies of sustainability due diligence: Digital tools and global value chain regulations. I regret not joining you there in person this year—the program is spectacular and the speakers brilliant.

The title of my remarks today, '"You can't stop the signal": From the past to the future of digitally mediated sustainability due diligence?' reflect the enormity of the task that Antoine and Klaas have set for me this afternoon. Before I get to the substance of these remarks, it may be useful to briefly describe the ordering concepts that frame the analysis that follows.[2]

The first ordering concept draws from the reference in the title to "the signal," is to the now ancient 2005 movie *Serenity*.[3] More specifically to the insights offered by the intergalactic hacker, Mr. Universe, in decoding the subliminal messaging that triggered engineered behavior in River Tam, the human childlike central character.

> [Mr Universe:] "There is no news. There's the truth of the signal. What I see. And, there's the puppet theater--the Parliament jesters foist on the somnambulant public. . . Can't stop the signal. . . Everything goes somewhere, and I go everywhere."

The signal, sometimes also known as *flow*, is a central concept that is meant to capture the essence of the dual projects around which my remarks revolve: on the one hand the machinery and output of the sustainability due diligence project; and on the other the output that gives form to big data tech in its descriptive, predictive, and generative forms. The concept of the signal-flow captures the abrupt change in orienting lens produced through the operation of these two activity platforms. Both make it necessary to move away from a focus on structure (the machinery) to output.

The machinery is static; output is iterative, contextual, and not rooted in space, place and time. The machinery shapes the output; but output can affect the machinery—for example as a consequence of the quality of the inputs, or through wear and tear. That concept is distinguished from the more traditional concept that embeds people in time, but that human institutions and collective ordering realities exist out of or outside of time. Crudely, it is the difference between understanding an enterprise by focusing on its *balance sheet* (the instant) or on *its income statement* (the record of flow from one instant to the next).

The ordering concepts of "signal" and "flow", then, is meant to help explain "why it is" and "how I mean" to *unpack the flow* from the past to the future of digitally mediated sustainability due diligence.

The second set of ordering concepts then focuses on the of sustainability due diligence, big/data tech, and the router/platforms functions that bridge them. *On one side* one encounters the modalities, expectations, practices, constitution, and legalities built around the development of productive forces in collective social relations. More specifically, one focuses on the larger social collectives organized around the exploitation of labor

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[2] Elaborated in a more theoretical way in Larry Catá Backer, ''The Soulful Machine, the Virtual Person, and the "Human" Condition', (2024) 37(5) *International Journal for the Semiotics of Law* (Springer Nature); available [https://rdcu.be/dyRgd].
[3] Joss Whedon (director), Serenity (Universal Pictures 2005).

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through capital to produce and consume objects of value. Most specifically, one encounters efforts to manage those behaviors against a set of norm-ideals through systems of "diligence."

On the other one engages with virtual simulacra of the behaviors of productive forces in collective social relations. More specifically, one moves from production in collective social relations to their technologies, both in-itself and as an object-instrument and a consumable in the production of something of value to humans and human society. That itself is a reductionist term referencing new tech that are digital and virtual. *Digital* commonly references exploitable productive forces relating to or utilizing electronic or computerized technologies. But it also references itself–that is the means –data–by which it is possible to activate digital tech for some purpose or other. *Virtual* commonly is understood as a thing, process or being simulated on a computer or computer network, that is something without a physical form though it may have physical effects. Their home spaces and meeting places are platforms–virtual or physical–in which producers and consumer meet, and includes platforms where platforms interact. When set in motion, this all becomes an aspect of the phenomenology of the human encounter with itself and its tools as productive forces.

That leaves the third and last of my ordering concepts–the transforming lifeworld (*Lebenswelt*) or *imaginaries* of governance in liberal democratic and Marxist Leninist systems, with a focus on the former. To those ends I will undertake the alignment of the physical and virtual manifestations of these two semiotically charged movements within the sphere of collective human social relations. This last set of ordering concepts contextualizes the platform systems of diligence and tech within the larger systemic transformations of desire and expectation in the operation of institutions of social relations in public and private institutions. In the spirit of what is to come, it might be more useful to think of this, to borrow loosely from Niklas Luhmann and Gunther Teubner, as the structural interpenetration of functionally differentiated platforms whose virtual and physical manifestations are now colliding or aligning in new and interesting ways. Or maybe more useful still and in the style of that now ancient movie, Ghostbusters,[4] to do the unthinkable in the face of the gods of revolutionary transition: to cross the streams of the of the signals emitted in the fields of regulatory compliance in economic activity and the constitution and control of big data descriptive predictive and generative tech, and hope that nothing blows up in the process.

That brings me back to Mr. Universe. He represents or signifies the central insights I hope to speak to in these remarks. It is this: the role of technology in the evolution and application of sustainability due diligence systems--and the role of sustainability due diligence in the evolution and shaping of tech–have three fundamental characteristics.

The first is that the interactive and dialectical processes of these operating systems are incompatible in the sense that one system is analog ("diligence") and the other a digital (system; two-way bridges are necessary to effect productive inter-penetration. .

The second is that these two-way bridges are built on the trajectories of macro changes to the core premises and operations of collective social relations; these are creating points of convergence in norms and expectations of social sub-systems–big-data tech and economic behavior expressed through signification of "diligence."

The third is that the dissonance produced by the interpenetration of analog ("diligence") and digital (big-data tech) platforms produces a dynamic environment in which every instance of application

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[4] Ivan Reitman, *Ghostbusters* (Columbia Pictures, 1984).

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affects the system and its applications; digitally mediated diligence becomes a site of plural inter-subjectivity.

To elaborate these points I first briefly consider the trajectories of sustainability due diligence. The object is to get a better sense of the underlying normative and governance movements that both give sustainability due diligence its form and norms, and within which the challenge of compliance is rooted. *Second, I also briefly unpack the trajectories of tech.* In this case those forms of digital and virtual technologies that make big data descriptive, predictive and generative analytics possible. Within that I also consider the underlying movements that both lust for greater development and that, out of fear of those lusts, also desires to constrain and shape its forms and norms*., I will then put them together from a systems perspective to suggest consequences, implications, and working styles.* These collisions and alignments bring us home to the mutual dialectics of their meeting. With this it may be possible to glimpse at the promise and challenges of the future. I conclude with observations about the reactionary and revolutionary aspects of this structural coupling of autopoietic systems with a taste for projection outward.

1.From Corporate Social Responsibility Through Responsible Business Conduct to Sustainability Due Diligence.

The impulse to due diligence in the fields of human rights and sustainability blends two streams of development in the 20th century that touched on the regulation of markets and market behaviors. The first was a response to the global depression of the 1930s and was grounded in classical public law measures. It focused on disclosure regimes (and related due diligence) in connection with transactions ins securities. Its object was to stabilize and protect financial markets. The second represented a mostly judicial, though in some places also statutory, response to risk allocation and management in caveat emptor regimes of private law arrangements between actors. It produced legal standards for determining when and the consequences of engaging in or failing to conduct investigations under certain circumstances. One relevant example from the United States focused on the availability of veil piercing remedies.

These were then transposed in the early 21st century to the discourse, and eventually the text, around the human rights responsibilities of economic actors. Introduced in the early years of the mandate of the SRSG John G. Ruggie, human rights due diligence became the core of the system for the realization of a markets driven and essentially privatized corporate responsibility to respect human rights. As early as the 2007 Reports to the UN Human Rights Council, the SRSG noted the relevance of the mechanism and its relationship to environmental due diligence. At the same time the fundamental object of these disclosures (prevent or mitigate harm) was augmented by its transformation into a positive duty. That is the object of due diligence was transformed into a tool for risk mitigation the obligation of which rested on the entity. Eventually it was further augmented by the addition of sustainability and climate change objectives—viewed, as always, through the lens of human rights. Beyond the soft law of the UNGP, and its cousin the OECD incorporation into its *Guidelines for Multinational Enterprises* after 2011, due diligence continued to expand, in form and spirit, to assume a role as a generalized duty to investigate within compliance and risk reduction principles.

In its modern forms, then, one encounters sustainability due diligence in one of two forms—one essentially private law based and markets driven with a compliance overlay; the other public law based and driven by the imperative to align public policy goals of the state with the behavior expectations and outputs of markets and the institutions that operate in them.

The private forms of structuring due diligence have largely been developed for the market by third party providers, and sometimes captured by international organizations within the UN system. *An influential example of*

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the private forms of structuring are the human rights due diligence provisions of the UN Guiding Principles for Business and Human Rights (UNGP). Though the product of international organizations, its due diligence process was intended to serve as a behavior systems in markets and articulated in the private law of the enterprise. The system is capped by UNGP Principle 16's direction to develop a "tone at the top" policy commitment divided into five key elements, the most important of which is the extension of the obligation from the enterprise to other parties directly linked to its operations, products and services.

As I describe it in my commentaries on the UNGP at greater length,[5] the UNGP's human rights due diligence process, elaborated in UNGP Principles 17-21, constituted a critical subpart of the corporate responsibility to respect human rights. Principle 17 provided the framework which was then more fully developed in the Principles that followed. The Principle articulates the purpose of HRDD, to "identify, prevent, mitigate, and account for" the way in which an enterprise addresses adverse human rights impacts. It sets out the scope of HRDD around the tasks of assessing actual and potential adverse human rights impacts. And it identifies the core elements of an HRDD system: (1) assessing impacts; (2) integrating and acting on findings; (3) tracking responses; and (4) communicating how impacts are addressed. The "identify and assess" obligation extends to actual or potential impacts. The "integrate and act on findings" obligation is elaborated as a function of the "prevent-mitigate-remedy" hierarchy in decision-making; and the "take appropriate action" obligation depends on the character of causation, distinguishing between direct causation and impacts caused by 'directly linked' entities. It introduces the concept of leverage in contract relationships. The UNGP also introduces mitigating and timing principles. Principle 23 provides a rule of compliance hierarchy (compliance with applicable law, respect for international law-norms). It also provides a balancing principle where corporate obligations conflict. Lastly Principle 24 touches on prioritization, It makes clear that all impacts must be addressed. Severity provides the basis on which to decide whether an impact is to be prevented, mitigated or remedied.

Principles 17-24, then, provide the meta-structures of HRDD in a way which, in retrospect, are framed in fairly easily codable instructional forms. In particular, HRDD systems are not snapshots but rather signal—or in the language of the UNGP they are meant to be ongoing with a sensitivity to the premise that human rights risks change over time. The Principles depend on a steady flow of data to operationalize the diligence system effectively, and it requires a constantly contextually dependent analytics for assessment of impact, effectiveness of system, and forms of action.

The public forms of structuring due diligence have largely been a European (and to a lesser extent a Chinese Leninist) project. *A likely influential example of the public forms of structuring are the French and German supply chain due diligence law and now the EU Corporate Sustainability Due Diligence Directive (CS3D).* CS3D directs EU Member States to transpose into their domestic legal orders a complicated set of rules built around the premise that companies to which it will apply (and eventually all companies through cram down effects) must identify, assess, and respond to adverse impacts caused by economic activities. All of these terms are defined. To those ends, companies are required to do two things. First they must develop and operate systems of due diligence, the object of which is to identify, assess and respond to adverse sustainability impacts. Second, they must act positively to prevent, mitigate and remedy such adverse impacts as they affect human beings directly, or indirectly through environmental degradation (including climate related degradation). These are also defined in the CS3D.

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[5] Chapter 2.3.2.2.

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CS3D is built around the conceptual framework for such systems developed by the Organization for Economic Cooperation and Development (OECD) over the years since the endorsement of the UNGP. These enlarge on the HRDD system elaborated in the UNGP in the form of six critical steps: (1) integrating due diligence into policies and management systems; (2) Identifying and addressing adverse human rights and environmental impacts; (3) Preventing, ceasing or minimizing actual and potential adverse human rights impacts; (4) Monitoring and assessing the effectiveness of measures; (5) Communicating; and (6) Providing remediation. Action and impact is to be ordered around concepts of severity and immediacy. And the system privileges prevention (risk aversion principles) rather than compensatory principles.

What makes CS3D different from private systems, like the UNGP, follows from the nature of contemporary legality. The CS3D attempts to build, in the European manner, a coded and functionally differentiated self-referencing system. It is one that contains all one needs to know to build and operate responsive systems. Its power derives from its detail. Everything is defined. Nothing is left to exercises of autonomy outside of the control of the techno-bureaucracies established to ensure systemic integrity. That, anyway, is the goal. The UNGP provides principals and structures and leaves systemic evolution to contextually based application. There is substantially more room for variation.

In a way, one might think of the UNGP as the development of values systems; where CS3D is, effectively, coding for human social interactions overseen by human techno-bureaucracies steeped in the meaning and managing of the textual coding (regulations, interpretation, application, assessment, and punishment). Yet both lend themselves to, and feed on, data driven analytics operating at speeds that defy the capacities of the human individual or human collectives. The critical insight, though, is that both lend themselves to coding; and coded big data descriptive and predictive systems can be operated by generative programs.

2. From the Technologies of Monitoring, Accountability, and Assessments to Big Data Descriptive, Predictive and Generative Analytics.

The due diligence described in the UNGP's soft law framework and in the EU's CS3D both lend themselves to digitalized and virtual tech-based administration. They require complex, data rich analysis of decisions from the most general to the most specific. And indeed, the market has responded to the need., supplying "off-the-rack" or bespoke programs to suit the taste of every buyer—including the state. Data driven decision making requires humans, certainly—at least for now. But it also requires powerful tools to align data with standards and compliance obligations. That need multiplies where a corporation must navigate more than one set of due diligence standards and their compliance based decision making and reporting.

Indeed, as noted in the 2023 report, *The Potential of Big Data Technologies for the Human Rights and Environmental Due Diligence Process*,[6] in the development of which Antoine Duval played a leading role, the interpenetration of sustainability and big data tech appears irresistible. That report notes three classes of efficient interpenetration. The first touches on mapping upstream and downstream supply chains—a critical element already necessary given the trajectories of European national and EU regulation. The second suggests big data tech as having a crucial role to play in the effective functioning of detection and assessment of adverse impacts. This is the heart of both UNGP, national, and CS3D systems. Third, big data tech is vital to the structural coupling of private actors with compliance responsibilities and the public techno-bureaucracies that manage that compliance.

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[6] Duval, A. A., Rouas, V., & Max, E. (2023). *The Potential of Big Data Technologies for the Human Rights and Environmental Due Diligence Process*. UvA-DARE (Digital Academic Repository).

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Yet even as economic activity has been aligned more closely with public policy, and the scope of its potential managed by values based ideological constraints, descriptive, predictive and generative programs have also been subject to a similar set of regulatory pressures. The *2023 Big Data Tech Report* also noted the risks of structural coupling, risks inherent in the generative biases and operating premises of the two platforms. These go to the effectiveness of the tech, and, more importantly, to the question of whether tech-based uses themselves might cause or become adverse human rights and sustainability impacts. In effect, coding for the biases of one platform may create error signals in the other. Either both must be adjusted or hierarchies of contextually based rights must be created. Or the differences in values, as applied, fueling their respective structures must be reconsidered. The *2023 Big Data Tech Report* offers privacy and stakeholder engagement as examples. But there are others—the environmental degradation of power consumption necessary to operate big data tech is another. And another still are the human rights and environmental impacts of creating and maintaining the objects within and through which big data tech can operate.

Let's consider as an example of the type, the rough parameters of the EU Artificial Intelligence Act (EU-AIA). It is important, not only in its own right but as the basis for European efforts to push out a *Framework Convention on Artificial Intelligence, Human Rights, Democracy and the Rule of Law* along the same lines.

In a 2021 Explanatory Memo, EU officials explained that the regulatory framework of EU-AIA would be bent toward realizing certain core objectives, among them the following: (1) ensuring that AI systems placed on the Union market and used are safe and respect existing law on fundamental rights and Union values; (2) ensuring legal certainty to facilitate investment and innovation in AI; (3) enhancing governance and effective enforcement of existing law on fundamental rights and safety requirements applicable to AI systems;(4) facilitating the development of a single market for lawful, safe and trustworthy AI applications and prevent market fragmentation.[7]

EU authorities have embraced the premise that they (or some other human institution) can effectively control the creation and characteristics—the formation and evolution—of descriptive, predictive, and generative programs. This is undertaken by the time honored efforts to suppress use by defining the limits of acceptable development and thereby also inadvertently defining the spaces where "irregular" development may occur free from the regulatory oversight of compliance oriented public and private techno-bureaucracies. What is suppressed include: (1) biometric categorization systems that use sensitive characteristics (e.g. political, religious, philosophical beliefs, sexual orientation, race); (2) untargeted scraping of facial images from the internet or CCTV footage to create facial recognition databases; (3) emotion recognition in the workplace and educational institutions; (4) social scoring based on social behavior or personal characteristics; (5) AI systems that manipulate human behavior to circumvent their free will; and (6) AI used to exploit the vulnerabilities of people (due to their age, disability, social or economic situation).

Some of these normative taboos are meant to protect the current state of EU human rights and constitutional principles, especially for example, the restrictions on biometric information that crosses ideological boundaries on politically sensitive classes of data. Others serve to reject contemporary Marxist-Leninist approaches to the nudging of behaviors through so-called social scoring mechanisms, including emotion recognition (for example Chinese "social credit") systems. These are going to be much harder to actually implement given the insatiable appetite in the liberal democratic camp to use a variety of semiotically powerful modalities to nudge behaviors. But that also suggests the power of critical disruptors in the efficient management

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[7] Explanatory Memo, p. 3

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of tech-fueled sustainability due diligence where both due diligence and the tech systems used to operate them are heavily regulated within bias privileging values systems. Unless a compliance techno-bureaucracy can effectively monopolize and control value systems, and the coding of such systems in programs,

And then there are the exceptions, limitations, and interpretations built into static regulatory systems (that is, text based legalities) through which institutions seek to manage, in this case at least, two interpenetrated operational platforms (due diligence and descriptive-predictive-generative programs) whose dynamic development reduces those static legalities to irrelevance over time. Indeed, one already sees in the limitations of the restrictions on emotion recognition technologies (to workplaces and schools) a concession to its obliquity in the marketplace and in the marketplace of ideas (including those of interest to the state). Another limitation appears to restrict the restriction on European social credit systems ONLY to "scoring based on social behavior or personal characteristics." That produces a tension, for example, between the openness of emotion recognition, and the prohibitions against "AI systems that manipulate human behavior to circumvent their free will." Ironically, of course, sustainability has as an object that very goal: to manage human behaviors toward the embrace of certain values and conduct.

Indeed, yet to be determined are the limits to the prohibitions. It raises the question about what in the field of social relations does NOT manipulate free will. There is nothing in the emerging regulation that suggests that AI may not be used to manage the circumstances against which free will can be curated for individuals or classes of humans identifiable by certain characteristics or predilections. Managing circumstances and the conditions around which "will" is exercised can be a quite powerful field for AI application--from traffic patterns to just transitions. The battles over the meaning and application of "manipulation" will consume much human capital.

3. The Conjunction of Sustainability Due Diligence and Big Data Analytics: The Environment of Social Relations

It follows, then, that there is more here than meets the eye, especially where one speaks to the interpenetration of two distinct platforms with distinct orienting values, structures and constraints. Both appear to share a connection to larger changes which affect them even as they affect the pathways of those changes. Combined with the happy alignment of three important trends:

(1) *civil-society*-based objectives to legalize the 2nd pillar corporate responsibility to respect,
(2) *state-based* ambitions to recast liberal democracy away from its 18th century roots in electoral representative democracy driven by popular elections toward an *operational level system* of techno-bureaucratic guidance of societal collective assets (including economic actors and their institutions), and
(3) the transformation of the largest collective *economic enterprises* into private law based administrative platforms already adapting both to the operational sensibilities of public administration and embedding a privatized public policy within their own operations.

it became possible to think in more concrete terms about the structures of the platform necessary to effect transformation embedded within evolving normative expectations. And it becomes plausible to embed them in tech-enhanced compliance systems.

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Whatever one thinks of the substantive value or the deficiencies of the current form of the CS3D or the UNGP for that matter, both together and in their own sectors, comport with the vision for administered economic activity through markets that now must incorporate public policy objectives--in this case touching on human rights and sustainability. And those public policy objectives must be guided under the leadership of a techno-bureaucracy under law. That was the central point of EU President Ursula van der Leyen's remarks at Davos.[8] In a sense CS3D and the UNGP put that viability of vision to the test. At the same time they each, in their own way, represent another step in the transformation of European liberal democracy from a 19th century sensibility centered on the direct relationship between law and its object, to one in which the command of law is to be mediated by an administering bureaucracy that becomes a critical element in the dialectics of public policy. The movement is substantially inevitable; it might best be managed through small steps undertaken within the umbrella of a three tiered legality of international-EU-national law structures within the field of human rights. Both take their forms and represent the development of substantial changes in the values and expectations of institutional actors especially (but not only) in libera democratic states.

More generally, and with respect to its implications for core movements in fundamental premises about governance it is possible to tease out five governance trajectories that give form and content to both due diligence and big data tech platforms.

First is the general trend within liberal democratic political orders to deepen the scope of the governmentalization of the private transnational sphere through multinational enterprises. This trend appears to be the answer to the initial challenge posed by John Ruggie as he sought to produce a framework for business and human rights--the core problem of governance gaps in a world legal order in which national law tends to be constrained by the territorial character of sovereign authority. Professor Ruggie proposed a markets driven answer in the form of the corporate responsibility to respect human rights operating in tandem with the formal and legal realm of state duty to protect human rights. States have found it easier to constitute the multinational enterprise as an extension of national territory--including by reason of control relations, all of those foreign legal persons resident or operating abroad.

Second, are the collateral effects of this process of governmentalization--of transforming the multinational enterprise from an economic organ to an organ through which state power may be applied directly. One of the most interesting is the acceleration in the transformation of the character of corporate or enterprise governance. Increasingly governmentalization, within a framework of risk version incentives wrapped around concepts like prevent-mitigate-remedy, appears to be changing the working style of multinational enterprises, so that they increasingly adopt the sensibilities and operating style of administrative agencies. That regulatory authority may not be identical to the authority that might be exercised by public regulatory bodies, but the operation of the MNE as administrative agency, a hyper-charged technocratic space, remains the same, and in that sense extends and internationalizes the reach of host state administrative organs.

Third, touches on the double role now assigned to private economic actors. They serve as the instruments of economic activity representing large numbers of aggregated productive forces--and at the same time they serve as the private sector administrative organ of the state that assumes oversight of the enterprise and can hold them accountable (through public elected and administrative bodies). The MNE then serves as the administrative regulator of a double delegation. The first is a delegation of regulatory responsibility for the state; the second is

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[8] Larry Catá Backer, The Transformative Consequences of Risk Spirals: "Special Address by President von der Leyen at the World Economic Forum 16 January 2024, Law at the End of the Day (21 January 2024); available [https://lcbackerblog.blogspot.com/2024/01/the-transformative-conseqeunces-of-risk.html].

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the normative regulatory objectives represented by international norms (that might or might not be incorporated into the domestic legal orders of the states asserting oversight power). That double delegation is mimicked in the relationship of tech to diligence.

Fourth, related to consequences. One involves regulatory and administrative competition. For every assertion of national legislative power there is the possibility of *blocking legislation*. Another comes in the form of *inconsistent or in the extreme incompatible administrative delegations*. These inconsistences are enhanced when they reflect and are reflected in inconsistent values systems. Not everyone shares the same world view, expectations, and experiences of those brought up among the best that Berlin, Paris, or New York can offer those with means enough to enjoy them. They also contribute to enhanced regulatory burdens of MNEs (and strategic responses) as well as the sort of regulatory incoherence that requires big data tech to mediate. Certainly proponents of a thousand legislative flowers blooming take comfort in the expectation that variations will be minor and eventually there will be convergence. Big data tech management may create movement in that direction—or make more likely the opposite result.

Fifth, the clash of orienting premises ensures the normative obsolescence built into legalities grounded in static orientations against the flow at the heart of compliance based data flow diligence systems. For big data tech that suggests two outcomes. The first is that generative systems will increasingly serve as another element of the techno-bureaucracy, along with state and private institutional persons. The second is that hyper-detailed legalities will only serve to make it increasingly impossible for humans to understand, grasp, and apply them without the aid of generative programs. That applies not just to due diligence systems, but to the operating of systems through which they are managed by law: judges, prosecutors, quality control personnel and the like. In this sort of complex environment, law making will form part of a seamless iterative and inductive universe of value-rule-response-application-revision. Dialectics and politics will remain self-referencing but its pathways will be virtual, *and the scrum master (natural or virtual) will be king*.

4. The Conjunction of Sustainability Due Diligence and Big Data Analytics: Mediating Operating Systems.

That brings us from the present to gateways that lead to the future. Let me suggest compatibility challenges inherent in the bridging of corporate compliance with big data digital and virtual modalities. The issue is part of the larger problems of bridging or mediating, and linking, analog and digital structures and ways of approaching engagement with the world. In the case of corporate compliance in the form of sustainability due diligence, our example today, one mediates between fundamentally incompatible structuring platforms. *Corporate operations, corporate compliance, and the techno-bureaucracies that tend to both, are essentially still analog institutional forms. Big data descriptive, predictive and generative processes and their products are digital and virtual.* That presents challenges for the future that we have barely begun to recognize, much less develop a language around which any sort of intelligent communication is possible. Using the language we have—an ancient analog model using tonal inflections and pictures of symbols that translate into text from which meaning might be extracted by applying communal meaning rules—one can identify the immediate problems in search of solution. . . or something.

The first includes the challenges of translation.

The analog is *structured through norms, rules, presumptions* that are elastic, though when expressed as text constructs the modern static edifice of legality for a political collective; the digital *is programmed*; though it

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too can be constituted in a way that can generate form, the inductive and iterative character of programs ensures that the flow rather than a particular iteration serves as the core output of the system. The analog is an exercise in the qualitative that is implemented through acts of carbon life form based discretionary acts. The digital is a program the input of which is data and the output of which is governed by the analytics of its programing. It is made in the image of its creator, to be sure, including all of the foibles that make carbon based life human. This is an old problem in new garb. There was a time when civil society cultivated an aversion to hard quantitative data; the case study, the story with the imagery to manage sentiment in appropriate ways served as the analytical formula par excellence. It is from the single that one can generalize on the principle—"if one, then many." The drudgery of data was marginally valuable. That was aided by the secondary principle of micro-materiality—even the smallest impact ought to be treated as the most severe. But the amalgamation of prevent-mitigate-remedy principles with severity principles opens the analytical and decision making doors to human rights relativity grounded in values calculated as a function of time, place, and space. At heart, this is essentially a quantitative exercise; something that civil society and rights absolutists an only react with horror. Horror, too, can be programmed.

The analog *transmits in words* and sounds and visual effects, it is grounded in the senses of the physical world centered on humanity; the digital is code; the digital *transmits as a manifestation of code* in relation to its input and analytics and is grounded in the capacity for conversion of instruction (object) into a representation (its signification) in a virtual landscape. The analog is the word of written rules, statutes and constitutions (even where one can, U.S. style, drive an interpretive truck through its text); it is incarnated in a direct relationship between the senses of the recipient and the modes of transmission of its sources. The digital speaks the language of code. It is the coder and the scrum master, the modeler and the analyst that create the environment in which stimulation is administered. The digital is the language of compliance and quality control. It is the essence of due diligence—where the diligence can be understood as weighed and assessed masses of data that are comprehensive in scope, not corrupted.

The second includes challenges of "being" or "becoming."

The analog is *wired*, that is, it is physically connected; the digital is *signal*, both in the sense of transmission and in the sense of its flow of iterative actions which give the signal form and to some measure predictability. The analog thinks in terms of physical objects and the physical world, however that is understood. The analog is the physical spaces taken up by a corporation and the physical manifestation of a supply chain—its paperclips and workers, its trucks and distribution centers, its discharges and HVAC systems, and of course, its techno-bureaucracies and its governing elites. *The digital operates through data fed simulacra*. It goes virtual. It encodes and simulates physical space so that it is both true to itself and accessible to its subjects. It cannot be seen but is felt—like the corporation and its supply chain, but in wholly different ways. It exists without the need for human recognition of its existence. It resides in its casing indifferent to the hopes, lusts, desires, politics, neuroses, of those who seek to exploit it. It cares about its programming imperatives but not the people and values. Yet it is that irresistible impulse to consult and exploit creates the interactions through which its output controls the viewpoint and guides the users in accordance with its programming. That programming might have started out in human hands, but it does not long reside there, even in non-generative analytical manifestations.

The analog is *housed in carbon based life forms*, principally humans, its essential narcissism is the essence of a self-love that has fueled civilization to date. The *digital is a silicon based intelligence housed in inorganic casings*; the essential narcissism of which is largely or initially derivative. In its generative forms digital intelligence may exceed the state of imitation of the human embedded in its initial coding and achieve a measure of autonomy, becoming its own subject, the center of its iterative dialectic around which its programming changes to

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suit the times and data. Humanity was the center of all things. That center has shifted to the simulacra observed through mediating objects--screens in machines.

The third includes challenges of processing data and recognizing and organizing it as knowledge.

The analog is *dialectics*, which constitutes the dynamic guts of its programing; it is the essence of *deductive* processes from the most general to the most specific. The analog needs God before it can create humanity. The digital is *iterative*, which constitutes its own programmatic guts, it is the essence of the *inductive* processes starting from its data to produce general conclusions. The digital feeds on data to create its own gods. Compliance, quality control and machine thinking is essentially inductive. Its premises are deductive and values based biases programed into the system. Yet at the heart of sustainability due diligence is the need for judgment that requires a certain tolerance for inconsistency and deviation--for waivers, exceptions and the like. Where more than one possible course of action is equally, or roughly equally plausible, a generative process may produce consistently different (and perhaps less palatable) outcomes than human. But maybe the reverse is true.

The fourth includes challenges of management and control.

The principal underlying point is also simple enough to state. One cannot successfully regulate iterative interactions in motion by recourse to a set of mechanisms and tools that were useful when collective social relations were merely human. That is like powering nuclear plants with people generating energy by riding on bicycles. One cannot control AI, nor "own" it merely by waving a bit of text at it and threatening it with uniformed humans engaging in the performative encounters of text and act. In the context of virtual and autonomous intersubjectivity, regulation is always chasing an object that is long gone by the time it is brought within its performative spaces. That may provide some comfort to those who believe (and not incorrectly) that the theater of public action is somehow socially reassuring and stability enhancing--but it has little to do with the actualities of its object. That result is more powerfully invoked when the regulatory object is autonomous. Perhaps, the best one can realize using these mechanisms is something that approaches the modalities of self-control, individual and collective. One can regulate individual and social contact with AI, and especially in its generative and autonomous forms. One can punish individuals and collectives that break the taboos of contact and use. One can, in effect, code limits and stops; one can "turn off the machine" perhaps (that is avoid using it). But one cannot do much more. It follows that consequential regulation--prescriptive rules for human actors--are, at this point in time, the more likely to produce some measure of success. Prescriptive rules for autonomous and generative intelligence remains, elusive, even in the language of code.

5. Where Does that Leave Us?: Concluding thoughts.[9]

A society reveals itself most clearly when it consciously confronts something threatening. That revelation becomes acute when the threat also constitutes a temptation that is irresistible. Generally, that binary reflex is then evidenced by the response; and the response then revealing what a societal group believes is its essence--that is how the social elite signifies itself (or constructs and projects its meaning). One has seen this before especially where a society is confronted with tech threats. The response to the ready availability of books (the printing press);

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[9] Larry Catá Backer, Algorithmic Law: UNESCO, "Recommendation on the Ethics of Artificial Intelligence" (24 November 2021, Law at the End of the Day (13 February 2022); [https://lcbackerblog.blogspot.com/2022/02/algorithmic-law-unesco-recommendation.html].

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with the development of transport (trains); and so on, brought profound changes to social organization. And so did the technologies of warfare, and so does the technology of autonomous "machines."

In each case two reflexes were much in evidence. The first is an effort to absorb the transformative technology (and its potential) in the service of the status quo. That, in turn, required the signification of this status quo. Such a signification produced distillations of the ideal expression of the society into which the technology would be absorbed, and thus absorbed reduced merely to a device to facilitate (rather than change) or perhaps enhance (rather than overturn) all of the relationships, expectations, worldviews and the like that held a societal collective together. *This constitutes the reactionary (or perhaps traditionalist) reflex*. And, indeed, even the most "progressive" society tends to recoil and revert to the standard defense (reactionary) position in the face of something new. The introduction of transformative tech provides a key moment for protection and distillation. And that is perhaps one of its greatest consequential products--the invocation of a furious effort to distill, to describe, and to memorialize *a social order that would domesticate the transformative into mere method*, in the way that ancient humans domesticated the dog. Yet dogs still bite; and many remained wolves.

The second, is an equally compelling effort to take the potential offered by transformative leaps, especially tech, to its limits. *This is the revolutionary reflex*. It is one that sees in tech both destruction and reconstitution. It understands the object of transformation as both the means and the embodiment of normative structures (the way a society rationalizes the world and orders itself in the face of the characteristics read into the transforming objects etc.) that will upend the contemporary system into which it is inserted--like a virus. And it will be the vanguard forces of society itself that will be (again) the instruments of transformation. Just as print made literacy more plausible and that in turn made more plausible still the democratic organization of society, so AI may produce its own societal transformation by de-centering the human in the protection of the social collective; and by re-arranging conceptions of human autonomy, the neuro-psychology of consent, and the authenticity and legitimacy of political, social and economic orders now more deeply embedded within more complex ecologies in humans are embedded.

Tech transformations, like predecessor transformative events, commence a messy, sometimes violent, and always displacing process that sometimes leaves society that emerges unrecognizable. It provokes by its own nature a set of movements in which those who were the leading forces of society, and the structures they had curated to ensure the continuity of their status as the shepherds of the societal universe over which they presided, may be displaced. Sustainability due diligence is a powerful manifestation of these movements and its internal contradictions. It was my object to shed a little light on both. Sometimes and ironically, it transforms these elites from those who presided over one set of ordering principles and practices to another. Roman senatorial families could, in the face of settler migrations, become the kernel of what would emerge as a feudal elite; the rising industrialist class could assume the trappings of the old aristocracy (Sword and robe); and now, 19th and 20th century bureaucracies will transform themselves from administrators of legalities to techno-administrators of systems constructed through the interpenetration of physical manifestations of legally embedded values, translated into and through data based inductive and iterative digitalized systems. In a world of big data tech, the coder and scrum master, the relevant techno-bureaucrat will rise to prominence within and among these compliance and tech platform that govern us.