

# Reconfiguring Individual Development Rights Under Digital Technologies: A Structural Imbalance Perspective

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The rapid expansion of digital technologies has reshaped social relations while generating systemic pressures on security, dignity, and equality. Rather than producing isolated risks, platform governance, algorithmic decision-making, and data monopolization collectively restructure the conditions under which individual development takes place. Platform rule-making power functions as a form of “digital Leviathan”, algorithmic opacity erodes human agency, and data concentration reconfigures patterns of social participation and resource distribution. This article conceptualizes development rights as an integrated structure composed of security, dignity, and equality, understood as jointly necessary conditions rather than independent claims. By examining the normative tensions that arise when these conditions are protected under digital governance, the article offers a structural perspective for understanding how development may be constrained even in the absence of explicit rights violations.

*Keywords:* digital power, individual development rights, coordinated protection

## Introduction

Digital technologies are increasingly shaping the conditions under which individuals pursue personal and social development. Algorithmic systems, platform infrastructures, and data-driven governance structures now mediate access to resources, opportunities for participation, and the scope of individual decision-making. These developments do not merely generate new categories of risk. They alter the background conditions that make development possible in the first place. Legal analysis has largely approached these transformations through fragmented lenses. Concerns about data security, algorithmic autonomy, and distributive inequality are typically examined as separate issues, each associated with a distinct set of rights or regulatory responses. While such analyses capture important aspects of digital governance, they struggle to explain a more fundamental phenomenon: why development may be progressively constrained even in situations where no single right appears to have been clearly violated.

This difficulty points to a deeper problem in how development is conceptualized in legal discourse. If development is understood only through isolated rights claims, attention is drawn to discrete infringements rather than to the conditions that sustain development over time. Yet in digitally mediated environments, protective

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measures aimed at securing one aspect of development may place pressure on others, reshaping the overall framework within which individuals pursue self-directed growth. The challenge, therefore, is not simply to identify new rights or refine existing ones, but to reconsider how development itself should be understood and assessed under conditions of pervasive technological governance.

### **Development Rights as an Integrated Normative Structure**

#### **An Integrative, Anti-reductionist Approach to Development Rights**

Understanding development rights as a composite structure requires a departure from reductionist approaches that seek to explain complex legal phenomena through a single normative value or analytical dimension. In jurisprudence, Julius Stone offered a sustained critique of such reductionist explanations and advanced an integrative approach to legal analysis. For Stone, legal concepts with broad social significance cannot be adequately captured by privileging one value or function over others; any attempt to impose a single-perspective account inevitably produces normative distortion, obscuring conditions that are equally essential to the phenomenon under examination. Importantly, Stone (1946)'s integrative approach does not entail an exhaustive aggregation of rights claims, nor does it presuppose interaction among different normative elements. Rather, it advances a form of anti-reductionist structural selection, aimed at identifying those non-reducible and non-substitutable normative conditions that must be considered together in order for a legal concept to remain intelligible. In this sense, integration should not be confused with the mere accumulation of multiple rights claims, nor with the balancing of competing interests in concrete cases. Still less does it imply empirical interaction among distinct normative dimensions. Instead, integration operates at a prior analytical level, establishing the conceptual preconditions under which development can retain normative meaning. Applied to the analysis of development rights, this approach shifts the focus away from expanding catalogues of entitlements toward a more fundamental inquiry into the conditions under which development can meaningfully occur.

This methodological limitation is reflected in existing scholarship. Research on development-related implications of digital technologies rarely treats development rights as a unified analytical object. Instead, rights-related concerns are typically fragmented across distinct domains of inquiry. One body of literature focuses on security risks, emphasizing data protection, system reliability, and exposure to technological harm. Another examines the erosion of dignity and human agency in algorithmically mediated environments (Balkin, 2011, pp. 232-246), highlighting issues of autonomy, transparency, and meaningful consent (Lessig, 1999, p. 6). A third addresses inequality, concentrating on digital divides, uneven access to technological resources, and the distributive consequences of platform-based economies. While these approaches offer valuable insights within their respective domains, their analytical separation reinforces a reductionist tendency that obscures the conditions under which development rights operate as an integrated whole. By isolating specific values or risk categories, existing scholarship struggles to explain when and how localized impairments translate into broader constraints on individual development. This limitation is particularly consequential in the context of development rights, which are inherently concerned with sustained conditions over time rather than isolated instances of harm. Fragmented analyses are therefore ill-equipped to capture how seemingly limited or sector-specific disruptions may, when accumulated or left unaddressed, undermine the overall possibility of development as a coherent normative

objective. The persistence of this fragmentation underscores the need for an integrative, anti-reductionist framework capable of capturing the structural logic of development rights in digitally mediated societies.

### **Constitutive Dimensions of an Integrated Rights Framework**

On this methodological basis, this article conceptualizes development rights as a composite structure constituted by security, dignity, and equality. These dimensions are grouped together not because they necessarily interact in practice, nor because they exhaust all possible rights-related concerns, but because each represents an indispensable and non-substitutable condition for development to meaningfully occur. The selection of these dimensions follows a constitutive logic rather than a descriptive or aggregative one: Each identifies a basic condition without which development cannot be sustained as a normative project. Security provides the baseline stability required for development to endure over time. Without basic protection against physical, economic, and informational harm, individuals lack the foundational conditions necessary to pursue personal and social development. Dignity establishes individuals' normative status as autonomous agents, ensuring that development proceeds as a self-directed process rather than passive adaptation to external constraints. Equality functions as the access condition of development rights, guaranteeing that participation in social, economic, and technological processes is not structurally foreclosed and that opportunities, resources, and the benefits of technological progress are allocated on a substantively fair basis. These components are analytically distinct yet jointly necessary: The persistent absence or severe impairment of any single condition is sufficient to undermine development rights as a whole, even where the remaining conditions appear formally intact.

Conceived in this structural sense, development rights do not depend on the maximization of any single value, but on the coordinated preservation of all three constitutive conditions. The integrity of development rights therefore cannot be assessed through isolated evaluations of security, dignity, or equality taken in separation. Rather, it requires attention to whether the overall configuration of conditions continues to support development as a coherent normative objective. This structural understanding also clarifies why technological power poses distinctive challenges in the digital age. Technological systems frequently affect security, dignity, and equality in uneven, indirect, and incremental ways. As a result, risks may accumulate within individual dimensions without immediately triggering recognizable rights claims or legal thresholds. Over time, however, such localized disruptions may destabilize the overall conditions of development, even where no single infringement appears decisive in isolation. By framing development rights as a composite normative framework, this section establishes the conceptual foundation for the subsequent analysis of how technological power reshapes the conditions under which rights are realized in digitally mediated societies.

## **From Technological Power to Rights Reconfiguration**

### **What Changes When Technologies Exercise Power**

**Platform power: Shaping information flows and rule-making processes.** In the digital age, platforms increasingly function as gatekeepers of information flows, determining not only which information can circulate but also how users receive, process, and utilize it. Under the Digital Markets Act (DMA), platforms that meet the “gatekeeper” criteria are designated as core service providers with systemic significance. Such platforms connect large numbers of business users and consumers, benefiting from extensive access to data, the ability to leverage dominance from one market into another, and, in some cases, effective control over entire digital ecosystems.

Platform control over information flows is rooted in the concentration of data resources and algorithmic decision-making capacities, which together generate substantial asymmetries of power between platforms and users. Major internet platforms leverage network effects and first-mover advantages in data accumulation to establish oligopolistic market structures. Revenues generated through transaction commissions, advertising, and algorithmic recommendation systems are highly concentrated at the platform level, while merchants and consumers operating within platform ecosystems capture only limited downstream benefits (Steinbaum, 2018, pp. 27-58). Through their command of data and algorithms, platforms are able not only to formulate and enforce internal rules but also to partially evade direct constraints imposed by traditional state sovereignty and legal frameworks. The boundaries of platform power are therefore no longer primarily defined by public law, but by technological capacity, algorithmic control, and the depth of influence over user behavior.

This form of autonomy has gradually evolved into a distinct mode of “technological sovereignty” in the digital domain (Murray, 2020, pp. 320-325). Unlike political public authority, platform power constitutes a form of economic power derived from market position and technological infrastructure. In practice, such private power manifests in several interrelated ways: Platforms exercise rule-making, supervisory, and sanctioning authority through the design and enforcement of platform rules, thereby establishing an organized private order; they claim extensive powers over user data, including its possession, control, exploitation, and disposal; they acquire governance capacity across both market and legal dimensions; and they operate proprietary dispute resolution mechanisms that grant them final decision-making authority over internal disputes, effectively positioning platforms as ultimate adjudicators within their own digital domains.

**Algorithmic power: Governing decision-making black boxes and constraining value embedding.** The expansion of algorithmic power constitutes another salient feature of the digital age. Algorithms, originally deployed as technical instruments to optimize user experience, have progressively evolved into core mechanisms that shape and regulate individual behavior across a wide range of social domains. From content recommendation on social media and personalized product suggestions in online commerce to credit assessment, loan approval, and employment screening, algorithmic systems now mediate access to opportunities and resources on an unprecedented scale. The “empowerment” of algorithms stems from their departure from a purely instrumental role. Once algorithms are capable of directly influencing or determining individuals’ interests, opportunities, and life chances, they can no longer be regarded as neutral tools. Instead, they acquire a form of power embedded in automated decision-making. In practice, the processes of algorithmic design, training, and optimization are inevitably shaped by the value orientations and assumptions of developers and institutional users, causing algorithmic operations to exhibit systematic tendencies rather than objective impartiality.

At the technical level, algorithmic opacity introduces a condition of uncontrollability. Black-box systems present an appearance of objectivity: machines that generate binary outcomes—“yes” or “no”—without the need to satisfy additional justificatory requirements. Yet once the black box is opened, what emerges is not pure rationality, but a dense assemblage of subjective assumptions, biased data, and complex code structures that neither designers nor users can fully comprehend. As a result, certain technological developments pose serious threats to human rights while remaining concealed beneath the rhetoric of “progress” and “efficiency”. First, major internet platforms rely on network effects and first-mover advantages in data resources to form oligopolistic structures, concentrating revenues from transaction commissions, advertising, and algorithmic

recommendation systems at the platform level, with limited redistribution to merchants and consumers (Steinbaum, 2018, pp. 27-58). For example, in platform-based “gig economy” settings, platforms dynamically adjust task allocation and pricing rules through algorithms, transforming workers into “data labor” and eroding their basic interests through mechanisms such as order refusal penalties and commission deductions (Rogers, 2024, pp. 215-238). Scholars have described this arrangement as an “algorithmic unilateral contract”, the essence of which lies in a new form of market exploitation imposed by platforms on workers (Eubanks, 2018, pp. 57-79). More troubling is the phenomenon of algorithmic price discrimination, commonly referred to as “big data-enabled differential pricing”, whereby platforms adjust prices based on users’ historical behavior and loyalty, charging higher prices to long-term users while concealing differential pricing behind seemingly personalized recommendations, thereby intensifying disparities among consumers accessing the same platform services (Zhang & Zhou, 2019, pp. 108-124).

**Data power: Structuring identity formation and steering subjective behavior.** Data have become a key driver of socio-economic development in the digital age. Yet data, when isolated and static, possess little inherent value. Their significance emerges only through the intervention of specific actors who deploy technologies of collection, aggregation, classification, integration, and analysis to extract and mobilize data value. A small number of large platforms and technology companies not only command highly concentrated data resources but also possess the technical capacity to store, process, and analyze massive amounts of data. These asymmetries enable them to exercise a distinct form of data power.

Data power is typically realized through, and embedded within, platform power. Platform infrastructures provide the technical and institutional foundations upon which data power operates, while platforms’ intermediary positions translate the multiple attributes of data power into concrete social influence. The monopolistic control of data resources constitutes a form of resource-based power; precision targeting enabled by data analytics generates a form of cognitive or soft power that subtly shapes perception and preference; and the pervasive data extraction and algorithmic modulation within platform ecosystems expand the spatial and temporal diffusion of power. This nested configuration demonstrates that data power does not penetrate social relations independently, but rather through the technological empowerment and institutional support provided by platforms. In digital environments, data power is both ubiquitous and elusive. It permeates everyday social interactions while remaining difficult to perceive and contest. Unlike overt forms of domination, data-driven influence rarely produces immediate discomfort or resistance. On the contrary, by reinforcing personalized preferences and offering continuous feedback and affirmation, data power often generates a sense of self-validation, thereby deepening individual dependence on the very systems that structure and guide their behavior.

### **Through Which Pathways Does Power Reach Rights**

Technological power does not affect development rights through direct rights violations. Its influence more commonly unfolds through the prior conditioning of the circumstances under which rights are exercised. To clarify this process, this article introduces a concentric-layer model that illustrates how technological power is mediated across different levels before reshaping the realization of individual development rights.

As illustrated in Figure 1, the concentric structure illustrates how foundational technological capacities are mediated through institutional and technical arrangements before reshaping the conditions under which

individual development rights are exercised. The innermost layer represents the foundational technological capacities embedded in digital systems, including capabilities related to information processing, behavioral prediction, and environmental modulation. This layer does not correspond directly to specific rights issues; rather, it constitutes the basic capacity upon which technological power operates. The intermediate layer captures the process through which technological capacities are institutionalized and normalized. Digital technologies do not function in isolation but are embedded within platform rules, organizational arrangements, and procedural routines, forming a relatively stable mediating structure. It is at this level that technological capacity is translated into enduring social mechanisms that continuously shape modes of participation, action pathways, and opportunity structures. The outer layer corresponds to the conditions under which individual development rights are exercised. Through the mediation of the inner layers, technological power does not immediately manifest as identifiable rights infringements. Instead, it operates by restructuring behavioral environments, participation patterns, and evaluative frameworks, thereby altering the prerequisites for rights realization. At this stage, rights-related risks often remain latent: They have not yet crystallized into recognizable violations, but are already embedded as structural features of everyday social practice.

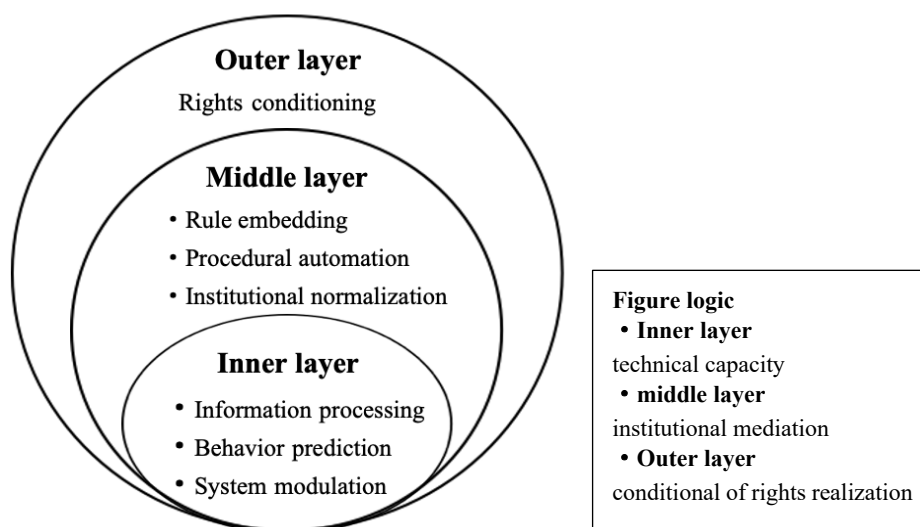


Figure 1. A layered pathway model of how technological power conditions the realization of development rights.

This concentric structure reveals a critical characteristic of technological power in digital societies: Risks to development rights do not emerge at the endpoint of rights exercise, but are pre-positioned at its starting point. Through this layered, indirect, and continuous mode of operation, technological power establishes the structural conditions under which cumulative risks to security, dignity, and equality may later materialize.

### Normative Tensions in the Protection of Development Rights

In the digital age, security, dignity, and equality constitute three core and non-substitutable dimensions of individual development. Security functions as the foundational condition, dignity forms the normative core, and equality represents the ultimate orientation of development. Together, they shape an integrated structure of development rights. Importantly, the relationship among these dimensions is not one of linear causation or mutual

reinforcement. Rather, under conditions of technological governance and limited regulatory capacity, they coexist in a state of persistent protective tension. These tensions arise not because the dimensions are normatively incompatible, but because the simultaneous pursuit of multiple protective objectives within a single institutional and technical framework generates structural compression.

### **Standardized Security and Its Unequal Consequences**

One prominent manifestation of protective tension emerges between data security and substantive equality. The decline of cognitive capacity increases individuals' vulnerability to security risks. Cognitive decline is a significant feature of the aging process, yet older adults often underestimate the extent of their own cognitive deterioration, making them more susceptible to financial losses and more likely to become victims of investment fraud (Mazzonna & Peracchi, 2020). Security-oriented governance emphasizes risk prevention, system integrity, and the minimization of potential harm. Substantive equality, by contrast, requires that technological systems and regulatory measures account for differences in access, capacity, and social position, ensuring that technological benefits are not distributed in ways that structurally exclude vulnerable groups.

In practice, security protection often relies on uniform standards and generalized safeguards designed around the technological capacities of the majority. While such standardization enhances system-wide reliability, it may simultaneously generate entry barriers for individuals or groups whose technical conditions do not align with those assumed by the system. High-threshold authentication mechanisms, extensive data verification requirements, and complex procedural designs may disproportionately affect older persons, individuals with limited digital literacy, or those lacking access to advanced devices. In such cases, security protection does not negate equality in principle, but compresses the space within which substantive equality can be realized.

A related tension arises from the defensive orientation of security governance. Precautionary approaches to technological deployment often restrict low-cost, simplified, or experimental service options in the name of risk control. While these measures may reduce systemic vulnerability, they can also constrain precisely those forms of technological access upon which disadvantaged groups most heavily rely. As a result, the pursuit of security may unintentionally reinforce existing access gaps, placing substantive equality under structural pressure without any explicit discriminatory intent.

### **Risk-Oriented Governance and the Marginalization of Agency**

A second form of protective tension arises between security-oriented risk control and the preservation of individual dignity. Risk governance in digital systems is inherently anticipatory. It seeks not only to respond to existing harms, but to predict and prevent potential future risks through technical design and regulatory intervention. This forward-looking logic often entails the predefinition of acceptable behavior and the automation of decision-making boundaries.

While such interventions serve legitimate protective purposes, they may simultaneously narrow the scope of individual agency. When technical systems embed predefined ethical or behavioral priorities—such as algorithmic decisions made in the name of efficiency or aggregate safety—individuals may be displaced from their role as autonomous decision-makers and repositioned as passive subjects of technical governance. In this sense, dignity is not directly violated by security measures, but is placed under strain as the space for self-directed choice and moral agency is progressively compressed.

Protective tension also emerges at the boundary between transparency requirements and personal autonomy. Measures designed to enhance traceability, accountability, and risk monitoring often necessitate the collection and exposure of personal information. Although such measures are justified in the language of security, they may encroach upon individuals' control over their personal sphere. Where individuals lack meaningful influence over the scope, necessity, or downstream use of collected data, protective transparency can become indistinguishable from imposed visibility, thereby placing dignity under sustained normative pressure.

### **Universalistic Technological Design and the Challenge of Dignity**

A third form of protective tension emerges between the pursuit of technological universality and the protection of individual dignity. Access-related inequalities further illustrate how formal inclusion may coexist with substantive exclusion. Low-income households often face material barriers in acquiring advanced digital devices and sustaining ongoing connectivity costs (National Bureau of Statistics of China, 2021, pp. 45-47). Moreover, digital literacy extends beyond basic operational skills to include an understanding of data security, privacy, and information evaluation. As scholars have noted, access to the internet does not necessarily translate into the ability to use it meaningfully or safely (Dimaggio, Hargittai, Neuman, & Robinson, 2001, pp. 307-336). These disparities are further reinforced by the institutional design of digitalized public services. Public service platforms increasingly rely on smart devices and self-service interfaces, while traditional offline counters, telephone support, and other assisted channels are substantially reduced. Such arrangements are poorly suited to individuals with limited digital skills or without access to appropriate devices, effectively placing them at the technological margins of public service provision and constraining their substantive access to public resources (Sun & Liu, 2023, pp. 112-130). Policies aimed at promoting broad access to technological services often prioritize coverage, efficiency, and standardized delivery. Such approaches reflect an important commitment to inclusive participation and the reduction of structural exclusion. However, when universality is pursued primarily through outcome-oriented metrics, it may obscure the process-oriented dimensions of dignity.

Uniform system design and averaged resource allocation can neglect differences in individual needs, preferences, and social contexts. In some cases, individuals may formally receive access to technological services while experiencing a loss of meaningful choice, recognition, or self-respect in the process. Technological inclusion achieved through undifferentiated provision may therefore satisfy formal criteria of equality while leaving dignity insufficiently protected. Here again, the tension does not arise from an inherent incompatibility between equality and dignity, but from the compression produced by protection strategies that privilege scale and efficiency over contextual sensitivity.

### **The Triangular Model of Structural Protective Tension**

Taken together, these protective tensions illustrate the structural condition under which development rights are protected in the digital age. This condition can be conceptually represented through a triangular model. Taken together, these protective tensions illustrate the structural condition under which development rights are protected in the digital age. This condition can be conceptually represented through a triangular model, as illustrated in Figure 2. Each vertex of the triangle corresponds to one constitutive dimension of development—security, dignity, and equality—while each edge represents a persistent protective tension generated by the simultaneous pursuit of multiple protection rationales within an integrated framework.

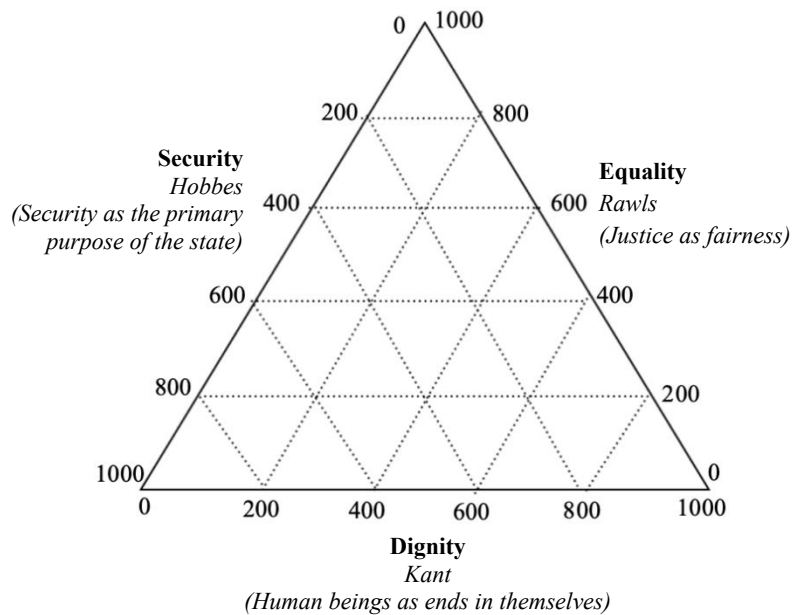


Figure 2. A triangular framework of development rights.

The triangular model does not depict conflicts among rights, nor does it suggest causal interaction or hierarchical ordering among the dimensions. Instead, it visualizes a condition of constrained coexistence: The protection of any single dimension inevitably places pressure on the others when governance capacity, institutional flexibility, and technical design space are limited. The model serves as an analytical device to capture the structural nature of protective tension, highlighting why development rights cannot be adequately safeguarded through dimension-specific or isolated interventions. By conceptualizing these tensions as structural rather than incidental, this framework prepares the ground for the subsequent analysis of structural imbalance. The following section examines how protective tensions may cross critical thresholds, transforming manageable compression into normative instability and undermining the integrated structure of development rights.

### Conclusion

Digital technologies have transformed not only the means through which individuals interact with social institutions, but also the structural conditions under which development becomes possible. The analysis in this article has shown that challenges to development rights in the digital age cannot be adequately understood as isolated infringements or discrete regulatory failures. Rather, they emerge from the cumulative pressures generated when multiple protective rationales operate simultaneously within a constrained institutional and technological environment.

By conceptualizing development rights as an integrated structure composed of security, dignity, and equality, this article offers a framework for understanding why development may be undermined even in the absence of clear or intentional rights violations. The triangular model developed in this study does not depict conflicts among rights, but visualizes a condition of constrained coexistence, in which the protection of any single dimension inevitably places pressure on the others. What is at stake, therefore, is not the prioritization of one right over another, but the sustainability of the structural conditions that support development as a normative project.

Seen in this light, the protection of development rights in digitally mediated societies requires more than the refinement of individual safeguards or the expansion of rights catalogues. It calls for sustained attention to the stability of the normative structure within which rights are protected and exercised. Whether existing legal and institutional frameworks are capable of maintaining this structural balance remains an open question—one that becomes increasingly urgent as technological governance continues to deepen and diffuse across social life.

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