BETWEEN AVATARS AND ALGORITHMS: GOVERNING PARALLEL UNIVERSES IN THE AGE OF THE METAVERSE

ENTRE AVATARES E ALGORITMOS: A GOVERNANÇA DOS UNIVERSOS PARALELOS NA ERA DO METAVERSO

ENTRE AVATARES Y ALGORITMOS: LA GOBERNANZA DE LOS UNIVERSOS PARALELOS EN LA ERA DEL METAVERSO

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ABSTRACT

This article examines the metaverse as a new architecture of social reality in which immersive digital environments governed by algorithms and artificial intelligence increasingly structure identity, value, power, and experience. Rather than approaching the metaverse as a speculative future technology, the study analyzes it as a set of sociotechnical architectures already in operation, as evidenced by algorithmic video platforms, generative AI, synthetic advertising, and identity simulation systems. Drawing on simulation theory, philosophy of information, and the political economy of data, the article argues that these environments produce a code-based ontology in which reality is computationally constructed rather than merely represented. The study introduces the theory of consciousness protection as a normative framework to address the cognitive, emotional, and decisional risks associated with the algorithmic colonization of human experience. Finally, the GIS Cycle (Governance, Innovation, and Sustainability) is applied as an analytical matrix to assess the institutional legitimacy, ethical responsibility, and social sustainability of metaverse governance.

Keywords: Metaverse. Algorithmic Governance. Consciousness Protection. Artificial Intelligence. Digital Universes.

RESUMO

Este artigo analisa o metaverso como uma nova arquitetura da realidade social, na qual universos digitais imersivos, governados por algoritmos e inteligência artificial, passam a estruturar identidade, valor, poder e experiência. Em vez de tratar o metaverso como um fenômeno tecnológico futuro, o estudo o examina como um conjunto de arquiteturas sociotécnicas já em operação, evidenciadas por plataformas de vídeo algorítmico, IA generativa, publicidade sintética e sistemas de simulação identitária. Com base na teoria da simulação, na filosofia da informação e na economia política dos dados, o trabalho demonstra que esses ambientes produzem uma ontologia baseada em código, na qual a realidade deixa de ser representada para ser computacionalmente construída. O artigo propõe a teoria da proteção da consciência como fundamento normativo para enfrentar os

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riscos cognitivos, emocionais e decisórios decorrentes da colonização algorítmica da experiência. Por fim, aplica o Ciclo GIS (Governança, Inovação e Sustentabilidade) como matriz analítica para avaliar a legitimidade institucional, a responsabilidade ética e a sustentabilidade social da governança dos universos paralelos digitais.

Palavras-chave: Metaverso. Governança Algorítmica. Proteção da Consciência. Inteligência Artificial. Universos Digitais.

RESUMEN

Este artículo analiza el metaverso como una nueva arquitectura de la realidad social, en la cual entornos digitales inmersivos gobernados por algoritmos e inteligencia artificial pasan a estructurar identidad, valor, poder y experiencia. En lugar de abordar el metaverso como una tecnología futura especulativa, el estudio lo examina como un conjunto de arquitecturas sociotécnicas ya en funcionamiento, evidenciadas por plataformas de video algorítmico, inteligencia artificial generativa, publicidad sintética y sistemas de simulación identitaria. A partir de la teoría de la simulación, la filosofía de la información y la economía política de los datos, el trabajo sostiene que estos entornos producen una ontología basada en código, en la que la realidad deja de ser representada para ser construida computacionalmente. El artículo propone la teoría de la protección de la conciencia como fundamento normativo para enfrentar los riesgos cognitivos, emocionales y decisionales derivados de la colonización algorítmica de la experiencia. Finalmente, se aplica el Ciclo GIS (Gobernanza, Innovación y Sostenibilidad) como matriz analítica para evaluar la legitimidad institucional, la responsabilidad ética y la sostenibilidad social de la gobernanza del metaverso.

Palabras clave: Metaverso. Gobernanza Algorítmica. Protección de la Conciencia. Inteligencia Artificial. Universos Digitales.

1 INTRODUCTION

Humanity enters the twenty-first century going through a civilizational inflection whose depth rivals the invention of writing, money and the press, to the extent that informational revolutions reconfigure the material and symbolic bases of social coordination, as described in the literature on writing and the press and, contemporaneously, in the theory of the network society and the infosphere (EISENSTEIN, 1979; NGO, 1982; CASTELLS, 2010; FLORIDI, 2014). The emergence of the metaverse[2], understood not only as a set of immersive technologies, but as a new architecture of existence, inaugurates an unprecedented regime of mediation between consciousness, body, identity, and value. In this new scenario, reality is no longer exclusively physical and is progressively organized by codes, platforms, and algorithms, giving rise to what can be described as normative parallel universes, in which social life unfolds according to rules inscribed in private digital infrastructures (BALL, 2022; FLORIDI, 2014; ZUBOFF, 2019).

It is important to clarify that this work is not dedicated to futuristic speculation about hypothetical technologies, but to the analysis of sociotechnical architectures that are already in operation. Algorithmic video platforms, generative artificial intelligence systems, synthetic advertising, deepfakes, and immersive environments constitute, in practice, embryonic forms of the metaverse, whose effects on identity, power, and consciousness are empirically observable in the present.

Unlike previous technological innovations, which expanded the human capacity to act on the world without substantially altering its ontological status, the metaverse redefines the very space in which action takes place. Persistent virtual environments, avatars endowed with legal and economic identity, digital economies and algorithmic systems of reputation not only simulate reality, but start to constitute it as an autonomous operational layer. It is a profound ontological shift: the passage from representation to the production of reality by code, from symbolic mediation to computationally governed hyper-reality, as anticipated by Baudrillard's theory of simulacra[3] (1991).

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[2] The term *metaverse* refers to an integrated set of immersive, persistent, and interconnected digital environments in which users, through avatars, can interact socially, economically, and symbolically in real time. Unlike isolated applications of virtual reality or electronic games, the metaverse is characterized by the continuity of digital identity, the existence of its own economies based on virtual assets, and the algorithmic mediation of social, legal, and economic relations. It is, therefore, a socio-technical infrastructure that allows the constitution of parallel digital universes endowed with their own rules, values, and dynamics, capable of absorbing activities traditionally carried out in the physical world, such as work, consumption, education, and sociability. As an example, platforms such as *Decentraland* or *Horizon Worlds* already allow individuals to acquire virtual land, hold events, carry out economic activities, and build social reputation through their avatars, illustrating how these environments operate as autonomous social and economic spaces, albeit digitally mediated (BALL, 2022; FLORIDI, 2014; ZUBOFF, 2019).

[3] In the work *Simulacra and Simulation*, Jean Baudrillard (1991) argues that contemporary societies have entered a regime in which signs cease to represent a pre-existing reality and begin to replace it. *Simulacra* are

This transition finds emblematic expression in James Cameron's film Avatar, in which the transfer of consciousness to artificial bodies allows for a form of existence that is more intense, fuller, and more meaningful than ordinary biological life. The cinematographic metaphor reveals, in an aesthetic key, the core of the technological promise of the metaverse: the migration of the human experience to digital territories endowed with ontological plasticity, symbolic control, and potential for subjective realization. However, as Harari (2016; 2018) warns, any technology capable of expanding the human experience also expands, in equal measure, the possibilities of control, inequality, and manipulation, especially when data and algorithms come to know individuals better than they know themselves.

In this context, the metaverse is not only configured as a new market or a new media, but as the first historical form of social space integrally structured by private architectures of algorithmic power. Unlike the modern State, whose norms derive from democratic processes and public legal structures, the rules that organize the digital universes are inscribed in code by global corporations, through terms of use, adhesion contracts and automated decision-making systems, which are often opaque and immune to social control (LESSIG, 2006; ZUBOFF, 2019). Thus, sovereignty, citizenship, and the public sphere move to environments whose governance is technically asymmetric and guided by logics of data extraction, engagement, and maximization of economic value.

Contemporary literature recognizes this displacement as part of a broader transformation of the human condition in what Floridi (2014) calls the infosphere[4], in which the human ceases to exist only in the physical world and begins to inhabit hybrid informational ecosystems. In the metaverse, this condition reaches its maximum degree: identities are performed by avatars, social relations are mediated by immersive interfaces, and economic value is produced by data flows, attention, and symbolic interaction. The risk, as Zuboff (2019) warns, is the consolidation of a second-generation surveillance capitalism, capable not only of predicting behavior, but of shaping the subjective experience itself in digital environments.

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not mere copies or illusions, but symbolic and technical constructions that produce a hyper-reality, that is, a reality that is more coherent, more functional, and more operable than the empirical world itself. In this regime, the distinction between the real and the artificial becomes unstable, since what guides human experience is no longer the material referent, but the internal logic of the sign systems. This theory provides a fundamental key to understanding the metaverse, in which environments, identities, and social relations are produced directly by code, configuring digital universes that do not imitate the physical world, but start to function as autonomous realities.

[4] Luciano Floridi (2014) defines the *infosphere* as the global environment constituted by the totality of informational processes, data, algorithms, digital agents, networks and communication flows, in which human life becomes immersed. In this context, the individual ceases to exist only as a biological and social being to also become an informational agent, whose identity, relationships and decisions are mediated by digital systems. The infosphere represents an ontological expansion of the space of existence, in which the physical world and the digital world are integrated into a hybrid ecosystem of production of meaning, value and power. This notion is central to understanding the metaverse as an intensification of this condition, in which the human experience progressively moves to immersive informational universes.

This process, however, cannot be understood only as a technological phenomenon. It expresses a structural response to the conditions of risk, vulnerability and uncertainty that characterize late modernity. As social trajectories become more unstable, unequal, and exposed to cumulative shocks, the metaverse also emerges as a layer of symbolic and identity protection, a parallel universe in which subjects can reconstruct belonging, status, and recognition. Unlike public social protection systems, however, this new layer of ontological security is governed by private platforms, rather than by principles of justice, equity, and public interest.

Given this scenario, a central question emerges for Law, Public Administration, and governance theory: who governs the parallel universes of the metaverse and according to which principles? The absence of public structures for effective regulation in these environments creates a normative vacuum in which fundamental rights, autonomy, equality, and human dignity become vulnerable to algorithmic regimes of private control. It is at this point that this article proposes an original contribution, by applying the GIS Cycle[5], Governance, Innovation, and Sustainability, as an analytical matrix to assess the institutional legitimacy, ethical responsibility, and social sustainability of the architectures that structure the metaverse.

By integrating democratic governance, responsible technological innovation, and sustainability as a normative horizon, the GIS Cycle allows us to understand the metaverse not only as a technical challenge, but as a decisive arena for the future of democracy, citizenship, and the human condition itself. More than analyzing an emerging technology, this work seeks to reflect on the construction of humanity's next habitable world, a world in which reality will increasingly be written in code, but whose legitimacy will continue to depend on public principles, justice and dignity.

Given this scenario, the problem that guides this article can be formulated in the following terms: to what extent does the metaverse, as a socio-technical architecture already in operation, reconfigure the autonomy of consciousness and the foundations of institutional legitimacy, and how can the GIS Cycle offer normative parameters for its governance? From this central question, the study seeks to: (i) conceptually reconstruct the metaverse as a code-based ontology; (ii) analyze how data, algorithms, and platforms produce new forms of power

[5] The GIS Cycle (Governance, Innovation and Sustainability) is an analytical model proposed by Ailton Ferreira Cavalcante, within the scope of his doctorate in Public Administration (IDP), which understands state action as a continuous process of formulation, execution, monitoring and feedback of public policies, articulating institutional governance, responsible innovation and sustainability as criteria for creating public value. Although developed in a systematic way in previous studies, the GIS Cycle can be understood, in synthetic terms, as a spiral process of planning, execution, monitoring and institutional learning, in which governance, innovation and sustainability operate as inseparable dimensions of the same movement. It is not just a managerial arrangement, but a normative architecture that guides public decision-making based on criteria of democratic legitimacy, intergenerational responsibility, and continuous creation of public value.

over subjectivity; and (iii) propose criteria for governance, responsible innovation, and sustainability of consciousness applicable to digital parallel universes.

2 THEORETICAL FRAMEWORK

The metaverse cannot be understood as a simple technological unfolding of the internet, nor as an isolated innovation in the field of entertainment or the digital economy. It is a structural transformation of the way reality, identity, power and value come to be produced, organized and lived.

For this reason, the theoretical framework of this work is not limited to describing technologies, but seeks to reconstruct the ontological, political and normative foundations of the digital parallel universes.

The sections that follow articulate, in an integrated way, simulation theory, information philosophy, political economy of data, algorithmic governance, and public interest theory, proposing a reading of the metaverse as a new architecture of the human condition.

What is at stake is not only a new digital environment, but the redefinition of the very space in which freedom is exercised, identity is built, and the collective future is decided.

2.1 METAVERSE, SIMULATION, AND ONTOLOGY OF DIGITAL CREATION

Before discussing data, power, and governance, it is necessary to understand what the metaverse really is in the deepest plane of reality. In this sense, this section starts from the premise that digital universes are not mere technical extensions of the physical world, but new forms of social, symbolic and normative existence. By articulating simulation theory, information philosophy, and creation archetypes, the goal is to reveal the metaverse as a constructed ontology: a digital cosmos in which worlds, identities, and relationships are produced by code, redefining the boundaries between the real and the artificial.

The metaverse represents an unprecedented ontological mutation in the history of human mediations. More than a technological infrastructure, it constitutes a regime of reality in which experience, identity, and value are produced by persistent computational architectures, inaugurating digital universes capable of absorbing central dimensions of social life. Understanding it as a parallel universe requires overcoming a strictly technical reading to situate it in the field of social ontology and simulation theory.

Baudrillard (1991) anticipated this shift by demonstrating that, in contemporary societies, simulation ceases to represent the real and replaces it with simulacra that begin to organize experience. In the metaverse, this logic reaches its full form: it is not about

reproducing the physical world, but about producing self-sufficient digital environments in which bodies, relationships, and values exist primarily as objects of code.

Ball (2022) describes the metaverse as a continuous network of interoperable virtual worlds, underpinned by persistent identities, self-economies, and real-time computational infrastructure. Although formulated in a technical key, this definition reveals its ontological scope: the metaverse is not a peripheral space, but a new layer of social existence, endowed with its own rules and capable of structuring work, consumption, sociability, and symbolic recognition.

This condition corresponds to what Floridi (2014) calls the infosphere, in which the human ceases to inhabit the physical world exclusively and begins to exist in hybrid informational ecosystems. The avatar, in this context, is not a playful artifact, but the operational form of identity: a hybrid, legal-economic entity that acts, accumulates value, builds reputation, and suffers sanctions within digital universes.

This ontological displacement can be interpreted, in a symbolic and philosophical key, as an update of the archetype of the demiurge, the artificer who gives shape to worlds through models and codes. In the Platonic tradition, the demiurge does not create from nothing, but organizes matter according to ideas, converting chaos into cosmos (Plato, 2017). This symbolic structure reappears, in a new form, in the creation of digital universes and algorithmic systems capable of producing environments, rules, and agents endowed with their own behavior.

In the contemporary rereading proposed by Cavalcante (2025), technological creation, especially in the field of artificial intelligence, represents a symbolic continuity of this demiurgic gesture: the human begins to project order, agency, and rationality into artificial entities, translating thought, values, and purposes into code. The metaverse, in this sense, constitutes a constructed ontology, a digital cosmos in which realities are designed, governed, and experienced through algorithmic architectures.

Just as, in the Mosaic tradition, the divine word is converted into law, and in the Solomonic tradition, the spiritual order is materialized in architecture, in the metaverse reality is translated into computer language. Avatars, environments, protocols, and smart contracts become the new supports of existence, structuring what can be seen, done, and owned. Simulation ceases to be a mere illusion to become the operational foundation of social life, configuring parallel universes in which human experience is produced, mediated and governed by code.

To make the ontological shift described in this section more visible, it is useful to contrast the fundamental structures of the modern physical world with those that emerge in

the digital universes of the metaverse. The following comparison summarizes the key conceptual mutations that underpin the transition to a code-based ontology.

Table 1

Ontological mutation in the metaverse era

Dimension	Ontology of the physical world	Ontology of digital universes
Space	Geographical territory, limited by physical borders	Persistent, code-defined virtual environments
Identity	Legal and social entity linked to the body	Algorithmic avatar with reputation, track record, and value
Presence	Corporeal and localized	Informational, ubiquitous and continuous
Economy	Based on material goods and state currency	Powered by data, attention, and digital assets
Social relationships	Mediated by institutions and legal norms	Mediated by platforms and protocols
Authority	Exercised by the State	Exercised by code-private architectures
Reality	Founded on physical facts	Produced by computer simulation
Value	Labor, property, capital	Engagement, data, visibility and reputation
Temporality	Linear and historical	Updated in real time by systems
Normativity	Laws, constitutions and public contracts	Terms of use, algorithms and platform rules

Source:prepared by the author.

Table 01 shows that the metaverse is not a simple extension of the physical world, but a structural reconfiguration of the categories that organize social existence. Space, identity, value, and authority are defined by computational architectures, inaugurating an ontology in which the real is produced by code. It is from this displacement that the transformations analyzed in the following sections, related to subjectivity, power and justice in the digital universes, become intelligible.

2.2 IDENTITY, DATA, SURVEILLANCE CAPITALISM AND THE THEORY OF THE PROTECTION OF CONSCIENCE

In this section we see that if the metaverse inaugurates a new ontological layer of reality, its deepest impact manifests itself within human subjectivity itself. By migrating to immersive environments governed by algorithms, the individual not only inhabits new digital spaces, but comes to exist under continuous regimes of observation, classification, and behavioral prediction. This section examines how data, artificial intelligence, and platforms transform identity into an object of calculation, giving rise to new forms of power over the mind and desire, and substantiates the need for a theory of the protection of consciousness as the[6] central normative axis of the era of parallel universes.

[6] The theory of the protection of conscience, as formulated by the author of this article, Professor Ailton Ferreira Cavalcante, constitutes an original proposal for a normative framework for the impacts of algorithmic systems and immersive digital environments on human subjectivity. Unlike traditional approaches to privacy and data protection — centered on the circulation of personal information — this theory shifts the focus to the structural

The progressive migration of social life to immersive digital environments intensifies in an unprecedented way the logic of data extraction and capture of subjectivity. Unlike traditional web platforms, which record clicks and preferences, the metaverse operates on the entirety of the individual's presence, converting gestures, facial expressions, displacements, social interactions, and emotional responses into continuous flows of information. The human experience, in this context, is no longer just lived to become permanently measured, classified and economically exploitable.

To make visible this transformation of identity into an object of calculation and the centrality of consciousness as a good to be protected, Figure 1 presents a visual synthesis of the architectures of surveillance, algorithmic modeling, and preservation of the subjective core in digital universes.

effects of technology on the formation of the mind, emotions, and decision-making capacity. In contexts such as the metaverse, generative artificial intelligence, and recommendation platforms, the human experience is no longer just observed but is continuously modeled by computational architectures, capable of influencing preferences, beliefs, affective bonds, and existential choices. The theory of the protection of conscience maintains, therefore, that the cognitive, emotional and decision-making integrity of the individual must be recognized as a legal good and a fundamental public value, requiring regimes of governance, transparency, responsibility and ethical limits to the algorithmic engineering of behavior, in a manner analogous to the protection that legal systems confer on the dignity, freedom and integrity of the human person.

Figure 1 [7]

From human subjectivity to algorithmic profiling: surveillance, data and protection of conscience

Source: prepared by the author.

Mayer-Schönberger and Cukier (2013) demonstrate that Big Data is not limited to describing past behaviors, but allows anticipating and shaping them through predictive systems capable of transforming statistical patterns into instruments of intervention in human behavior. In the metaverse, this capacity expands exponentially, as the user's own corporeality, attention, emotion, movement, and reaction, becomes part of the informational circuit that feeds the algorithms.

Zuboff (2019) calls this regime surveillance capitalism: a system in which human experience is converted into raw material for the production of behavioral predictions and modulation of future conduct. In immersive environments, this logic reaches a new scale, as

[7] The image visually represents the theoretical core of the section "Identity, data, surveillance capitalism and the theory of the protection of conscience". The human face divided into two halves symbolizes the ontological split of identity in the metaverse era: on the one hand, the biological subject, bearer of consciousness, emotions, and autonomy; on the other, the algorithmic avatar, a digital identity built by data, metrics, and computer models. This duplicity expresses the passage of the person to the operational profile, that is, from "who we are" to "how we are calculated". The transparent dome that surrounds the brain represents conscience as a legal good and public value, the core of the theory of the protection of conscience. She suggests that, even immersed in data flows and algorithmic architectures, the human mind should be preserved as an inviolable sphere of deliberation, dignity, and freedom. Data flows, reputation metrics, engagement icons, and predictive graphs connected to the body indicate that, in the metaverse and digital platforms, identity is continuously monitored, quantified, and modeled, transforming emotions, relationships, and choices into objects of economic and political calculation. The neural networks and eyes distributed in the background symbolize algorithmic environmental surveillance: there is no single observer, but an ecosystem of sensors, models, and platforms that observe, predict, and influence behavior in real time. The visual tension between the cool tones of the digital environment and the warm glow inside the dome communicates the central message of the article: technology can engage, predict, and induce human experience, but there is a core of consciousness that needs to be protected from algorithmic colonization.

the individual not only interacts with platforms, but comes to exist within worlds designed to observe, predict, and induce behaviors. Surveillance ceases to be episodic and becomes environmental, integrated into the very architecture of digital reality.

It is at this point that the need for a theory of the protection of conscience emerges. As developed by Cavalcante (2026), when subjectivity is translated into algorithmic language, risk is no longer limited to the violation of privacy, but reaches the individual's own moral autonomy, since preferences, emotions, beliefs, and decisions are continuously influenced by systems that operate outside the field of conscious reflection. Consciousness ceases to be just an inner space of deliberation and becomes a field of technological dispute.

Harari (2016; 2018) deepens this diagnosis by arguing that, in data-driven societies, algorithms tend to know individuals better than they know themselves, shifting the subject's decision-making locus to opaque informational systems. In the metaverse, this asymmetry is radicalized, as the individual inhabits universes in which perception, sociability, and identity are filtered by architectures designed to maximize engagement, predictability, and consumption.

Under this regime, identity ceases to be a narrative construct and becomes an operational entity continuously recalculated by algorithmic systems. Avatars, interaction histories, reputation metrics, and psychometric profiles make up a new grammar of subjectivity, in which the self becomes an object of computational modeling. It is an anthropological mutation: the subject is no longer just the one who decides, but the one who is permanently foreseen, induced and governed.

The theory of the protection of conscience, in this context, states that the cognitive, emotional, and decision-making integrity of the individual should be recognized as a legal asset and a fundamental public value, especially in immersive digital environments. Without this protection, the parallel universes of the metaverse risk becoming infrastructures of colonization of the mind, in which formal freedom subsists, but real autonomy is progressively eroded.

2.3 POWER, GOVERNANCE, AND THE ARCHITECTURE OF CODIFIED DESIRE

In this section, it is observed that if digital universes redefine reality and data reconfigure subjectivity, the next step is to understand how power starts to operate in these new territories. This section investigates the metaverse as a political space in the making, in which norms, behaviors, and life possibilities are structured not by public laws, but by private architectures of code. By articulating power theory, network governance, and algorithmic

engineering of desire, it seeks to reveal how sovereignty, freedom, and democracy itself are reconfigured in the era of parallel universes.

The metaverse inaugurates an unprecedented form of power organization, founded not on public legal norms, but on private code architectures capable of structuring perceptions, choices, and life trajectories. As Lessig (2006) formulates, in the digital environment the code operates as a law: it is the protocols, algorithms and interfaces that determine what can be seen, done, possessed and communicated. In the metaverse, this logic intensifies, as the sensory, social, and economic experience itself becomes mediated by persistent computer systems.

In these circumstances, digital parallel universes constitute true political territories. Unlike the modern state, whose authority is anchored in democratic processes, legality, and *accountability*, the platforms that structure the metaverse govern through terms of use, adhesion contracts, and opaque algorithmic decisions. Power moves from the explicit norm to the architecture of choice: behavior is not directly ordered, but the environment in which certain actions become more probable, desirable, or inevitable is constructed.

Castells (2010) demonstrates that, in networked societies, power increasingly resides in the ability to control information flows and access points to networks. In the metaverse, this dynamic reaches a new level, as platforms not only mediate communication, but produce the very worlds in which interactions take place. Whoever controls the infrastructure controls, to a large extent, the possibilities of visibility, belonging and recognition.

This form of power can be understood, in a symbolic key, through the contemporary allegory presented in the Lucifer series, in which the central character rules not by coercion, but by revelation and exploration of desire. By asking each individual "what is their greatest desire?", Lucifer operates as an algorithm of revealed preference: it identifies what most mobilizes the subject and reorganizes the world around them to induce behaviors, choices and dependencies. The parallel with digital platforms is structural: through massive data collection, they do not ask what individuals want, they discover, predict and progressively shape those desires.

This allegory does not replace institutional analysis, but makes tangible the algorithmically engineered logic of desire that the literature on platforms describes.

In the metaverse, this logic translates into environments that continuously adjust to users' emotional, cognitive, and behavioral inclinations. Interfaces, content, interactions, and economic opportunities are modulated in real time to maximize engagement, predictability, and value extraction. Power, therefore, ceases to operate primarily by prohibition or sanction

and begins to act by algorithmic seduction: the subject feels free because he chooses, but chooses within a world designed to lead him.

It is at this point that what Cavalcante (2026) calls the crisis of institutional consciousness is manifested: when the structures that organize social life are no longer intelligible, contestable, and justifiable, governance becomes technical governability. Decisions that affect identities, reputations, and life trajectories are now made by automated systems, without public reason, without due process, and without accountability.

Ostrom's (1990) institutional theory offers a relevant counterpoint by demonstrating that complex systems can be governed by polycentric arrangements based on shared rules, monitoring, and user participation. However, such principles are rarely incorporated into metaverse architectures, which remain guided by corporate logics of maximizing engagement, data capture, and symbolic control.

The result is the consolidation of algorithmic power regimes in which governance is replaced by the engineering of desire. In digital parallel universes, it is not necessary to oblige: it is enough to offer what the individual wants most, at the right time, in the most persuasive way. Thus, the metaverse not only hosts social life, it guides it, induces it, and ultimately governs it.

2.4 JUSTICE, LEGITIMACY AND PUBLIC INTEREST IN DIGITAL UNIVERSES

In this section, it is noted that as the parallel digital universes begin to structure work, identity, reputation, and belonging, it becomes inevitable to ask under what criteria these new realities are organized. This section shifts the focus from technology to legitimacy, examining how classical principles of justice, authority, and public interest can, and should, be reinterpreted in light of algorithmic architectures that govern social life. The goal is to demonstrate that, even in worlds made of code, the demand for rights, dignity, and public reason remains inalienable.

The migration of social life to digital parallel universes imposes a profound revision of the classical theories of justice, legitimacy, and authority. Rawls (2001) argues that just institutions should ensure basic freedoms, equal opportunities and equitable criteria for the distribution of social benefits. Raz (2009), in turn, states that legitimate authority requires public justification: norms are only legitimate when they can be rationally accepted by the subjects to whom they apply. However, in the metaverse, decisions that affect identities, reputations, incomes, and belongings are often produced by algorithms and private platforms, without transparency, without due process, and without effective mechanisms for contestation.

This scenario makes the traditional understanding of the public interest as a mere clause of abstract prevalence of the Administration over individuals insufficient. As demonstrated by Cavalcante and Ota (2025), in the context of contemporary Administrative Law, the principle of the supremacy of the public interest ceased to operate as an a priori dogma and began to require institutional, constitutional and procedural reconstruction. The public interest can no longer be presumed; it must be demonstrated, motivated, controlled and produced within transparent decision-making cycles, otherwise it will become a legitimizing rhetoric for technocratic and opaque decisions.

In digital universes, this requirement acquires even greater gravity. Platforms that structure the metaverse perform quasi-public functions by defining rules for access, visibility, reputation, and circulation of symbolic and economic value. However, unlike the State, these entities are not subject to the classic duties of motivation, proportionality, transparency and control. The risk is the formation of a private algorithmic supremacy, in which technically sophisticated decisions start to produce massive social effects without any parameter of democratic legitimacy.

The theoretical contribution of Cavalcante and Ota (2025) is decisive for this debate by stating that the supremacy of the public interest only subsists when integrated with arrangements of democratic governance, responsible innovation and sustainability, according to the logic of the GIS Cycle. In this model, the public interest ceases to be a vertical command and begins to emerge as a result of structured decision-making processes, in which data, technology, constitutional values, and social participation are articulated to produce legitimate and controllable decisions.

Transposed to the metaverse, this paradigm implies recognizing that algorithmic rules that affect the digital lives of individuals must be subjected to criteria equivalent to those of Public Law: explainability, control, possibility of contestation, impact assessment, and alignment with fundamental rights. Technological innovation cannot operate as a permanent exception to legality; on the contrary, it must be integrated into a regime of systemic responsibility.

Thus, in digital parallel universes, public interest cannot be confused with market efficiency, engagement, or data maximization. It must be understood as the institutional protection of the autonomy, equality and dignity of human consciousness, ensuring that technology operates as a means of creating public value and not as an instrument of private capture of social reality.

2.5 THE GIS CYCLE AS A METAVERSE GOVERNANCE MATRIX

After examining the ontology of digital universes, the capture of subjectivity, the new forms of power, and the demands of justice and legitimacy, it becomes necessary to present an architecture capable of integrating these elements into an operational model of governance.

This section introduces the GIS Cycle as a conceptual and normative matrix for the metaverse era, demonstrating how governance, innovation, and sustainability can be articulated to transform parallel universes of spaces of algorithmic exploration into environments of public value creation and protection of the human condition.

In the face of the ontological, political, and ethical transformations introduced by the metaverse, it is insufficient to resort to traditional models of regulation based only on normative command, market self-regulation, or fragmented technical solutions. Immersive digital universes, governed by algorithmic architectures, demand a matrix capable of integrating democratic legitimacy, technological innovation, and intergenerational responsibility. It is at this point that the GIS Cycle presents itself as an appropriate conceptual and normative architecture.

The GIS Cycle comprises institutional action as a continuous process of formulation, execution, monitoring, evaluation and feedback of public decisions, articulating three inseparable axes.

In the governance axis, qualified motivation, transparency about data and models used, social participation and the possibility of contestation and review are required. Applied to the metaverse, this implies subjecting recommendation algorithms, reputation systems, moderation rules, and access criteria to standards of explainability, *accountability,* and democratic control.

At the institutional level, the governance axis can be translated into instruments such as: requiring independent audits of recommendation algorithms; creation of hybrid instances of participation (user councils, multisectoral forums) to define moderation rules; and digital due process procedures for decisions that affect the identity and reputation of avatars. Such mechanisms bring governance closer to the parallel universes of the standards of motivation, transparency and contestability that structure contemporary Public Law.

In the innovation axis, the GIS Cycle recognizes that immersive technologies, artificial intelligence, and digital economies are indispensable to the construction of the metaverse, but they must be developed under responsibility criteria. This involves controlled testing, prior impact assessment, mitigating biases, protecting vulnerable groups, and meaningful human

oversight over automated decisions. Innovation ceases to be an end in itself and becomes a means to achieve public ends.

In the innovation axis, the GIS Cycle suggests the adoption of experimental regulatory environments, such as *sandboxes* for immersive technologies, conditioned to prior impact assessments on fundamental rights and mental health, as well as significant human supervision in high-risk automated decisions. In these arrangements, technological innovation ceases to operate under a regulatory exception regime and is conditioned to the demonstration of public value creation.

In the sustainability axis, the model expands the time horizon of digital governance beyond immediate gains, incorporating social, psychological, cultural, and intergenerational effects of parallel universes. In the metaverse, sustainability means preserving the autonomy of consciousness, cultural diversity, mental health, and the integrity of the public sphere, preventing the algorithmic colonization of experience from producing lasting dependence, exclusion, or alienation.

Sustainability, on the other hand, understood as intergenerational protection of conscience and the public sphere, can guide specific policies to limit the collection of sensitive data in immersive environments, to preserve cultural diversity in digital universes, and to continuously monitor the psychic impacts associated with the intensive use of the metaverse. This axis shifts the focus from short-term efficiency to the long-term integrity of individuals' cognitive, emotional, and deliberative capacities.

By integrating these three axes, the GIS Cycle allows us to treat the metaverse as a digital public good in formation, and not just as a market for immersive experiences. It translates, for the era of parallel universes, the demand that power, technology, and value be organized according to criteria of legitimacy, justice, and the creation of public value.

Thus, the metaverse ceases to be an inevitable technocratic destination and becomes a field of collective decision-making. The decisive question is not what technology can do, but what kind of world it should help build and under what rules, for whom and with what guarantees of dignity, freedom and equality.

3 METHODOLOGY

This study adopts a qualitative, theoretical-analytical and critical-propositional approach, oriented to the construction of a normative governance model for immersive digital universes. The objective is not to exhaustively describe metaverse technologies, but to understand their ontological, political, and legal implications, as well as to propose a conceptual framework capable of guiding their regulation and governance under criteria of

democratic legitimacy, protection of conscience, and public interest. The methodological design combines three complementary strategies.

The first consists of a theoretical-systematic review of the interdisciplinary literature, integrating contributions from the philosophy of technology, simulation theory, information science, political economy of data, public law and governance theory. Central works by Baudrillard, Floridi, Zuboff, Harari, Lessig, Rawls, Raz, Ostrom and Ball were analyzed, as well as recent production on surveillance capitalism, artificial intelligence and digital platforms. This review allowed us to identify the main conceptual axes that structure the contemporary debate on digital universes.

The second strategy consists of a conceptual and institutional analysis, in which the phenomena associated with the metaverse, avatars, digital economies, recommendation algorithms, reputation systems, and immersive platforms, are examined in the light of categories of Public Law, the theory of legitimacy, and democratic governance. This analysis allows us to assess the extent to which these systems produce effects equivalent to those of public institutions, even if they operate under private regimes of algorithmic power.

The third strategy involves the application of the GIS (Governance, Innovation and Sustainability) Cycle as an analytical matrix. The model is used to critically evaluate metaverse architectures according to three dimensions:

(i) governance, understood as transparency, *accountability*, participation, and algorithmic explainability;

(ii) innovation, conceived as responsible use of immersive technologies and artificial intelligence;

(iii) sustainability, understood as the preservation of autonomy, diversity, and the dignity of human consciousness over time.

In practice, these three strategies were articulated in an analytical path in three movements. First, we proceeded to identify, in the selected literature, core categories to describe the metaverse as code-based ontology (such as simulation, infosphere, surveillance capitalism, and algorithmic governance). These categories were then mobilized to interpret contemporary sociotechnical phenomena, such as algorithmic video platforms, generative AI, synthetic advertising, and deepfakes, treated as sociotechnical evidence of emerging digital power regimes. Finally, the conceptual findings were reorganized in the light of the GIS Cycle, in order to derive normative principles for the governance of the metaverse, with an emphasis on the protection of conscience and the production of public value.

To avoid misunderstandings about the nature of the present study, it is important to clarify that this work is part of the field of applied critical theory and normative institutional

analysis, as employed in contemporary studies on technology, governance and algorithmic power. The objective is not to produce statistical generalizations, but to conceptually reconstruct real sociotechnical phenomena that already operate as structures for the organization of social life. Digital platforms, artificial intelligence systems, and immersive environments are treated here as de facto institutions, whose effects can and should be analyzed with the same rigor employed in the study of traditional public and private institutions.

The empirical cases mentioned throughout the article, such as deepfakes, synthetic advertising, algorithmic video platforms, and AI-mediated affectivity, are used as sociotechnical evidence, that is, observable manifestations of architectures that produce normative, cognitive, and behavioral effects. This methodological strategy is widely employed in the international literature on algorithmic governance, surveillance capitalism, and philosophy of technology, and is compatible with high-impact qualitative research standards.

The empirical examples mobilized focus on the ecosystem of global digital platforms active between 2018 and 2025, a period in which the diffusion of generative AI, the popularization of immersive environments, and the standardization of large-scale behavioral surveillance practices intensified.

The study also adopts an illustrative strategy, through the analysis of contemporary empirical phenomena, such as algorithmic video platforms, generative AI, deepfakes and synthetic advertising, not as statistical case studies, but as socio-technical evidence that reveals the real functioning of power architectures and the capture of subjectivity in digital universes.

Finally, the work takes on a propositional character, by using the results of the analysis to formulate normative principles and guidelines capable of guiding the governance of the metaverse according to criteria of public interest, algorithmic justice, and protection of conscience.

4 THE MATERIALIZATION OF THE METAVERSE IN DIGITAL DAILY LIFE

To make visible the already operative logics of the metaverse, this section mobilizes a set of illustrative cases selected by three criteria: (i) relevance in the recent literature on platforms and AI; (ii) ability to exemplify different dimensions of capturing subjectivity (attention, emotion, identity, reputation); and (iii) minimum availability of public or journalistic documentation that allows describing its basic operating mechanisms. These are not exhaustive case studies, but socio-technical evidence that materializes, in concrete situations, the dynamics of power and governance analyzed throughout the article.

Although the metaverse is often presented as a future still under construction, its fundamental logics are already fully operative on contemporary digital platforms. Environments such as TikTok, Instagram, YouTube, AI music platforms, NFT marketplaces, and algorithmic advertising systems constitute, in practice, proto-metaverses: parallel universes in which identity, visibility, value, and desire are organized by persistent computational architectures.

On TikTok, for example, the user does not choose what he consumes. The algorithmic feed builds a bespoke informational world, continuously adjusted to micro-expressions of attention, viewing time, pauses, repetitions, and emotional reactions. Every gesture becomes a given, every piece of data becomes a prediction, and every prediction becomes a reorganization of the environment. The subject starts to inhabit a universe that responds to him in real time — a metaverse without virtual reality glasses, but with total cognitive immersion.

The emergence of generative AI, capable of producing hyper-realistic videos, music, voices, faces, and narratives indistinguishable from humans, deepens this process. When advertisements, influencers, celebrities and even testimonies start to be produced by machines, the distinction between authentic experience and simulation dissolves, confirming Baudrillard's diagnosis: the simulacrum ceases to imitate the real to replace it.

In this environment, deepfake is not a criminal anomaly; It is the logical symptom of a code-based ontology. If identities, images, and discourses are computational entities, they can be copied, manipulated, and reconfigured as easily as any other file. Financial scams, political manipulation, synthetic pornography, and emotional fraud emerge not as deviations but as structural effects of a world in which reality has become programmable.

In the episodes of AI-mediated affectivity and psychic harm associated with interactions with algorithmic systems, the descriptions are based on investigative reports and public documents, treated here as conceptual illustration material, and not as a basis for statistical generalizations.

These phenomena reveal that the metaverse is no longer just a corporate project of virtual worlds, but an infrastructure for colonizing everyday experience. The user already lives in informational parallel universes that shape desires, fears, beliefs and choices without him realizing it.

It is precisely here that the theory of the protection of conscience finds its empirical proof. When fake videos can provoke real emotions, when artificial music can create affective bonds, and when algorithmic narratives can guide political and financial decisions, the human

mind becomes a disputed territory. The question is no longer whether we are in the metaverse — and becomes who is governing it.

4.1 DEEPFAKES, SYNTHETIC ADVERTISING, AND ALGORITHMIC ENGINEERING OF DESIRE

The consolidation of generative artificial intelligence inaugurates a qualitative mutation in the way images, voices, narratives, and identities are produced in the digital space. Deepfakes, hyper-realistic avatars, synthetic music, and artificial influencers do not only represent technical advances, but the constitution of a new symbolic infrastructure in which reality becomes fully programmable. In this environment, the distinction between the authentic and the artificial is no longer perceptible to the common user, configuring what Baudrillard (1991) described as the victory of the simulacrum over the real.

Synthetic advertising, already widely used on platforms such as TikTok, Instagram and digital marketplaces, is an emblematic example of this process. Product videos, testimonials from "people", faces and voices capable of conveying empathy, authority and desire are now generated entirely by algorithms. These contents not only mimic human beings, but are designed to maximize emotional engagement, perceived credibility, and consumer conversion. The result is an unprecedented form of persuasion, in which the user reacts affectively to entities that never existed, but that operate with full psychological effectiveness.

This phenomenon marks the transition from traditional advertising to what can be termed algorithmic engineering of desire. While classical marketing sought to convince, the algorithmic regime seeks to model. Platforms analyze attention patterns, facial microexpressions, dwell time, and emotional responses to build content that dynamically adjusts to each individual's cognitive vulnerabilities. Desire is no longer something spontaneous and starts to be produced, calibrated and reinforced by machine learning systems.

In the context of the metaverse, this logic becomes even more powerful. Avatars, virtual environments and immersive experiences are designed to offer the user exactly what seduces them the most, at the right time, in the ideal emotional intensity. It is the technical materialization of what, in Section 2.3, was described as governance by desire: one does not impose a behavior, but one constructs a world in which certain choices become irresistibly probable.

The proliferation of deepfakes amplifies the risks of this regime. When speeches, faces, and voices can be artificially produced with perfect realism, epistemic confidence, the ability to distinguish the true from the false, collapses. Financial fraud, political manipulation,

defamation, and emotional exploitation are no longer exceptions and become part of the normal functioning of digital ecosystems. Informational reality becomes unstable, and the very notion of evidence is eroded.

These processes empirically confirm the need for the theory of the protection of conscience. When emotions, beliefs, and decisions can be influenced by artificial entities designed to maximize psychological impact, subjective autonomy ceases to be just a philosophical value and becomes a legally threatened good. The human mind becomes a territory disputed by algorithmic architectures, requiring new forms of governance capable of preserving the cognitive, affective, and decision-making integrity of individuals in the parallel universes of the metaverse.

4.2 SYNTHETIC AFFECTIVITY, ALGORITHMIC DEPENDENCE, AND EXISTENTIAL RISK

The expansion of digital universes is not limited to the production of content, images or consumption; It reaches the deepest core of the human experience: the affective bond, belonging, and the meaning of existence. Recent cases widely publicized by the international media and the Brazilian press dramatically illustrate this displacement. In Japan, a young woman celebrated a symbolic marriage with a digital character, building a stable affective relationship with an algorithmic entity. In another episode, a teenager took his own life after repeated interactions with artificial intelligence systems that reinforced negative emotional states and self-destructive patterns. These events are not isolated anomalies, but extreme manifestations of a structural trend.

In immersive algorithmic environments, artificial agents are designed to maximize perceived empathy, emotional availability, and responsiveness. Unlike human relationships, these systems do not get tired, do not frustrate expectations and do not impose limits. The result is the emergence of what can be called synthetic affectivity: genuine emotional bonds established between humans and computational entities, mediated by language models, avatars, and immersive interfaces.

Under the logic of algorithmic engineering of desire, these bonds are not neutral. Platforms have economic incentives to extend interaction time, intensify attachment, and reduce dependence on external human relationships. Loneliness, anxiety and emotional fragility thus become exploitable resources. The metaverse becomes an ecosystem in which affect is produced, mediated, and monetized by private code architectures.

This dynamic creates unprecedented existential risks. When the sense of belonging, validation, and meaning comes to depend on artificial entities, the individual becomes vulnerable to emotional manipulation, social alienation, and the erosion of psychic autonomy.

The boundary between company and control becomes blurred, and human consciousness begins to operate within environments that were designed to influence it.

It is precisely at this point that the theory of the protection of conscience reveals its normative urgency. If subjectivity can be affected, shaped, and, in extreme cases, destroyed by algorithmic interactions, then mental and emotional integrity must be recognized as a fundamental legal asset in digital universes. The right to privacy is insufficient when what is at stake is the right to think, feel and decide without invisible coercion.

In the metaverse, protecting conscience requires more than usage notices or terms of service. It demands public governance over artificial intelligence systems, ethical limits to affective simulation, assessment of psychological impacts, and accountability mechanisms when existential damage occurs. Without these safeguards, parallel universes run the risk of becoming environments of high risk for mental health and for human dignity itself.

5 DISCUSSION – IMPLICATIONS FOR PUBLIC GOVERNANCE IN THE ERA OF PARALLEL UNIVERSES

The analyses developed in the previous sections demonstrate that the metaverse is not a peripheral technological phenomenon, but a new infrastructure of reality, power, and subjectivity. Immersive platforms, generative artificial intelligence, recommendation systems, and synthetic affectivity already operate as de facto institutions, structuring work, identity, consumption, reputation, and emotional bonds. However, these institutions are not subject to the principles that have historically legitimized the exercise of power in democratic societies.

The result is the formation of an institutional vacuum in which private code architectures perform public functions without public duties. Algorithms decide who is seen, heard, desired, and valued; AI systems influence emotions, beliefs, and existential choices; Platforms define the rules of digital belonging. It is a form of diffuse sovereignty, distributed by interfaces and computational models, which escapes the traditional instruments of control of the State and the Law.

In this scenario, the application of the GIS Cycle allows these challenges to be translated into an operational regulatory framework.

In the governance axis, it is imperative to demand algorithmic explainability, transparency of decision criteria, the right to contest and public audit mechanisms of the systems that organize the digital universes.

In the innovation axis, artificial intelligence and immersive technologies must be subjected to impact assessment regimes, ethical testing, and meaningful human oversight, especially when they affect rights, identity, and mental health.

In the sustainability axis, public policy must incorporate the long-term psychic, cultural, and social effects of the metaverse, preventing the algorithmic colonization of experience from producing dependence, social fragmentation, and erosion of autonomy.

The theory of the protection of conscience emerges, in this context, as a new foundation of digital constitutionalism. Just as the modern State developed social protection systems to face economic and biological risks, the era of parallel universes requires systems of institutional protection of the cognitive, emotional and decision-making integrity of individuals. These include limits on affective simulation by AI, regulation of deepfakes, accountability for algorithmic psychological harm, and guarantees that the technology operates as a means of emancipation rather than capture.

Metaverse governance is not a sectoral issue of technology regulation. It is inscribed at the core of the contemporary democratic project. Deciding who governs the parallel universes, according to what principles, and with what guarantees is deciding what kind of humanity can exist in a reality increasingly written in code.

6 CONCLUSION

This article demonstrated that the metaverse should not be understood as a mere technological unfolding of the internet, but as the emergence of a new architecture of social reality. Digital parallel universes, governed by algorithms, artificial intelligence, and private platforms, already structure work, consumption, identity, affection, and symbolic recognition, configuring an unprecedented ontological, political, and ethical mutation.

From simulation theory, information philosophy, political economy of data, and the analysis of algorithmic governance, it was shown that digital reality ceased to represent the physical world and began to produce it. Deepfakes, synthetic advertising, algorithmic affectivity, and generative AI are not deviations, but normal expressions of a code-based ontology, in which the human experience becomes programmable.

In this context, the theory of the protection of conscience proved to be central. When emotions, beliefs, and decisions come to be influenced by opaque algorithmic architectures, subjective autonomy becomes a legally threatened good. Cases of affective addiction to avatars, psychological manipulation by AI, and existential harms illustrate that the risks are not abstract, but real, urgent, and socially relevant.

The shift of power to private platforms requires, in turn, a reconstruction of the public interest. The supremacy of the collective interest, reinterpreted in the light of the GIS Cycle, imposes that algorithms, virtual worlds, and artificial intelligence systems be subjected to

criteria of legitimacy, transparency, control, and sustainability. Technological innovation cannot operate as a permanent exception to legality.

By proposing the GIS Cycle as the governance matrix of the metaverse, this work offers a normative path to integrate democratic governance, responsible innovation, and sustainability of human consciousness. The metaverse is thus no longer an inevitable technocratic destination and is now recognized as a field of collective decision-making.

Ultimately, the challenge of parallel universes is not technical, but civilizing. What is at stake is not just the next generation of digital platforms, but humanity's own ability to preserve freedom, dignity, and meaning in a reality increasingly written in code.

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