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RESEARCH ARTICLE

TIME IN SUSPENSE: TEMPORAL REGIMES IN ARTIFICIAL INTELLIGENCE

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Abstract

Artificial intelligence allows us to analyze time from two complementa ry perspectives: one technical and the other social. From the first perspective, time is a formal structure indispensable for the functioning of systems. Algorithms need to represent sequences, intervals, duration, change, and causality in order to plan, classify, predict, or decide. Time thus appears as a calculable variable translated into mathematical models.From the second perspective, time is a form of organization of collective life. It encompasses work rhythms, institutional timelines, shared memories, expectations, and future projects. From this perspecti ve,artificial intelligence not only uses pre-existing temporalities but also modifies them by accelerating processes, reducing waiting times, and reorganizing everyday decisions.The comparison reveals key differences. For algorithmic logic, the past is a training dataset; for social logic, it is also memory and history. The computational present tends to be compressed through real-time decisions, while the social present requires deliberation, interpretation, and negotiation. The future, for artificial intelligence, is an estimable probability; for society, it is also openness and the possibility of change.Both perspectives agree that time shapes decisions. However, when high-speed technical temporality takes precedence over human and institutional timeframes, tensions arise between efficiency, justice, and autonomy. The central issue is not only what artificial intelligence can do, but what forms of time it produces and governs.

Introduction:-

The expansion of artificial intelligence systems introduces specific ways of organizing social time. It is no longer merely a technical innovation, but a reconfiguration of rhythms, expectations, sequences, and decision-making horizons comparable to the introduction of the first machines at the dawn of capitalism. The central question is to determine what temporalities artificial intelligence produces, accelerates, suspends, or redistributes in different institutional and everyday spheres. As a preliminary hypothesis, one might think that artificial intelligence consolidates a temporal regime oriented by anticipation, continuous processing, and a reduction in the intervals between data, calculation, and action. This regime does not eliminate other temporalities; on the contrary, this coexists with bureaucratic, biographical, political, and organizational timeframes, generating conflicts, frictions, and

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asymmetries. Artificial intelligence radically alters decision-making times by transferring processes that traditionally required contextual interpretation and moral reasoning to automated systems that operate with a speed and scale unattainable for human institutions. Decisions are made in real time by algorithms that process big data instantaneously, displacing reflective deliberation and human discretion with automatic resolutions. “Predictive models are the tools we will increasingly depend on to run our institutions, deploy our resources, and manage our lives” (O'Neil, 2018, pág. 343).

Subhuman acceleration and the fading of the interval:-

Social acceleration, as described by Hartmut Rosa (2013; 2016), finds in artificial intelligence not only a technical culmination but also an ontological mutation. While mechanical modernity accelerated the transfer of matter and the communication of signs, AI operates on the micro-time scale (Pani, 2001). This temporality can be considered subhuman, since operations are measured in nanoseconds, generating an insurmountable gap with the phenomenology of human perception. The concept of interval, fundamental to democratic deliberation and reflective judgment, is being suppressed. In action theory, the interval is the space where the subject processes the stimulus, evaluating and contrasting arguments (Susen, 2018),and requires time to formulate a response. AI, by implementing real-time computing processes, collapses this space (Stiegler, 2018). The consequence is systemic asynchrony; society's technical infrastructure operates at a speed that inhibits critical thinking during execution. It is not simply a matter of speed but of a reproductive instantaneity that alienates the subject from their own capacity to inhabit the time of decision-making. In this new technological context, activities related to massive data processing, logistics, surveillance, citizen profiling, and content generation and distribution are accelerating dramatically. This dynamic creates an economy of speed and just-in-time delivery (Virilio, 2012). In contrast, the capacities for human scrutiny, understanding, and auditing are slowed or marginalized. The pace of AI development outpaces the adaptive capacity of regulatory institutions and citizens themselves, limiting the time and space to challenge decisions or participate thoughtfully in the public sphere, thus fostering political passivity and problem fatigue (O'Neil, 2018).

The construction of social time and its temporal regimes:-

The problem of time and its interpretations permeate the social sciences and philosophy and have gained renewed relevance in times of acceleration (De Angelis, 2025; Ramos Torre, 2005). However, this discussion will focus on two conceptualizations: social time and the constitution of the temporal regime. The methodological approach is as follows: each conceptualization is detailed, compared with the temporal forms of artificial intelligence (Coeckelbergh, 2021), and finally, a corresponding critique is offered. The first approach is that of Javier Cristiano(2018; 2020; 2021),who proposes an operational clarification by dividing the conceptualization of time into two broad logical levels, namely the basic components or characterizations of the idea of time in general, and the various analytical operations that specifically define what social time is.

Within the basic components of time, Cristiano establishes that the general idea of time, regardless of its application, is characterized by eight fundamental elements.

1. It is a dimension of every phenomenon or event, since there are no realities exempt from temporality.
2. It is a central aspect of making sense of things in the world; understanding the environment requires ordering it temporally.
3. It is a relational phenomenon, which means that the act of temporalizing is equivalent to establishing relationships (for example, to capture the change or identity of things).
4. It always presupposes the existence of a process, of phenomena of mutation or movement.
5. It requires duration, since perceiving the change in a process makes the existence of a reference point that remains still or stable indispensable.
6. It simultaneously involves novelty and repetition, combining movement understood as constant creation and movement understood as a natural rhythm or cycle.
7. It necessarily encompasses the distinctions of past, present, and future.
8. It requires a parameter of observation, recognizing that time has an external and quantifiable dimension (objective time or Chronos), and an internal experiential and qualitative dimension (subjective time or Kairos).

Each proposed component is contrasted with the apparent behavior of artificial intelligence.

Table 1: Social time component and AI behavior

Basic Component of Time	Apparent behavior of AI with respect to temporality
1. Dimension of every phenomenon (There are no realities exempt from temporality)	The subsumption of life to machine time: AI imposes a new, hyper-accelerated temporal dimension on human phenomena. In real-time decision-making systems (finance, autonomous vehicles, healthcare), AI operates in fractions of a millisecond.
2. Putting things into perspective (Understanding the environment requires ordering it temporally)	The imposition of an opaque algorithmic meaning (black boxes): To make sense of the world, AI orders sequences of data at speeds incomprehensible to humans.
3. Relational phenomenon (Temporalizing is equivalent to establishing relationships to capture change/identity)	The temporal perpetuation of inequality (historical biases): AI establishes temporal relationships by linking past data with present identities. However, when trained on biased historical databases, AI reifies and automates prejudices.
4. Process (Mutation or movement phenomena)	The extraction and expropriation of historical effort: The AI process is divided into training (expensive) and inference or testing (cheap and fast).
5. Duration (Need for a stable reference point to perceive change)	The setting of parameters and the inability to cope with true uncertainty: In order to function, models assume stability based on the duration of past patterns.
6. Novelty and Repetition (Combination of constant creation and cycle)	De-futurization and colonization of novelty: AI operates by predicting the future based on the repetition of the past. From a critical perspective, this functions as a technique of de-futurization.
7. Past, present and future (Forced distinctions of temporality)	Consuming the future in the present: AI accelerates time by extracting answers and dragging them from the future into the present.
8. Observation parameter (External Chronos vs. Internal Kairos)	The tyranny of automated Chronos over ethical Kairos: While humans experience time internally and deliberate ethically (Kairos), AI imposes a purely external, quantitative, and ruthless measurement parameter (Chronos).

Source: own elaboration based on Cristiano(2018; 2020)

From a critical perspective, the vital need for time in all AI activity subjects human temporality to a regime of virtual instantaneity where technological speed dominates over social rhythms. The constitution of meaning (even in the Weberian formulation) sacrifices transparency and explainability. The machine imposes its own meaning on vital decisions in a black box environment that marginalizes the subject from understanding their own reality. Regarding the need for a point of reference, as Elena Esposito warns (2011)about quantified finance, blindly trusting that future risk will behave as it has in the past is a systemic error. AI and complex models assume a stable world (continuous risk), failing catastrophically in the face of radical ruptures or extreme events, producing systemic fragility. With regard to the need for creation and generation of novelties inherent in human endeavor (innovation as the engine of capitalist competition), AI, insofar as it (due to its own internal organization) seeks to reduce the future to a few calculable probabilistic sequences, needs to eliminate true novelty or surprise. The future loses its creative openness and becomes trapped within the limits of what the algorithm can calculate, stifling the imagination of alternatives. Instead of enabling social change, AI relates to the past in a deterministic way, reproducing and justifying systemic discrimination in the present under a false guise of objective neutrality. The training phase is an extractive process: algorithms assimilate hundreds or thousands of human lifetimes of cognitive effort and millennia

of human history only to privatize them. The AI movement is the capitalization of the collective intellect of the past to automate and dominate the present.

Hyper-anticipation (highly evident in the use of predictive models in finance) means that future possibilities are being exhausted and consumed by present decisions. Society is trapped by the consequences of automated predictions, facing a future already mortgaged or determined by machines. With regard to the parameters of observation in real-time scenarios, traditional methods of ethical oversight, such as human review or prolonged deliberation, become impractical or impossible due to the immediacy. As argued above, the speed of AI negates the time needed for human moral judgment, subjecting life to machine efficiency. Artificial time in AI is not merely a computational tool, but a powerful device of control. By processing centuries of history in weeks and making decisions in milliseconds without human oversight, AI expropriates past human experience to govern the future. In this regime, individuals risk becoming mere objects of algorithmic prediction: their futures are colonized and their discriminatory pasts are automated, imposing a technological speed that overwhelms and nullifies our capacity for ethical deliberation and social transformation.

Furthermore, based on the previous notion, Cristiano classifies the ways in which sociology socializes time, identifying five distinct operations that configure social time:

1. Time conditioned by social variables: It conceives of time as a variable dependent on other social factors, seeing it as a tool forged by human needs and the social construction of reality.
2 Socio-institutional expression of time: It focuses on how society physically embodies time through institutions, norms, calendars, and guidelines that govern collective interaction.
3. Attention to the temporal dimension of social phenomena: This is the approach that analyzes the inherent temporality of key sociological processes that are not time in themselves, such as social action, human interaction or the value circuit in the economy.
4. The change of society as a whole: It considers social time as the analysis of historical movement and the global transformations of society itself and its stages.
5. Sociological processing of the two dimensions of time: It is the theoretical effort that seeks to reconcile and theorize the dual nature of time, articulating the differences between its internal subjective experience and its objective institutional structure.

Once again, an analytical scheme is proposed to assume the relationship of artificial intelligence in an environment that is outside its logic, time.

Table 2. Social time in relation to the temporality of AI

Operation Social Time	AI Behavior
Time conditioned by social variables (Time as a variable dependent on human needs / social construction)	Speed forged by accumulation and efficiency: Algorithmic acceleration does not respond to a neutral social need, but rather to the "systematic contraction of the valorization cycle" inherent in capitalism. In sectors like high-frequency finance, the need to generate profits dictates an operational speed measured in milliseconds.
Socio-institutional expression of time (How society embodies time in institutions and norms).	The institutionalization of the autonomous black box: AI has become the new temporary infrastructure that governs collective interaction in critical institutions (hospitals, financial markets, smart cities, transit).
3. Temporal dimension of social phenomena (Temporality of key processes such as action and the economic circuit)	The commodification and performativity of the future: In the economy's value circuit, time itself becomes a tradable commodity. Through predictive instruments and financial derivatives, algorithmic actions do not passively describe the world, but rather performatively construct it.

4. The change of society as a whole (Historical movement and global transformations).	De-futurization and the end of natural history: AI is pushing humanity out of natural time toward an "accelerated future created by machines". Historically, AI assimilates centuries of knowledge in weeks.
5. Sociological processing of the two dimensions of time (Reconciling internal subjective experience and objective structure).	The expropriation of moral Kairos versus technical hyper-Chronos: AI promises to expand the subjective human experience (the Kairos), symbolically providing 100 years of experience for every year we live through cognitive prostheses.

Source: own elaboration based on Cristiano(2018; 2020; 2021)

Prioritizing the speed and efficiency of artificial intelligence subordinates and sacrifices fundamental social factors such as equity, transparency, and justice, codifying historical inequalities at high speed. Considering AI as a new, temporary institutional framework imposes opaque regimes where decisions occur instantaneously, rendering ethical oversight or human review impractical or impossible. Social norms are delegated to automated systems that are not clearly accountable to society. Furthermore, this automated social action exhausts and consumes the future in the present; actors cease to react to material reality and begin to react, in a recursive loop, to the automated expectations of other algorithms. The absence of internal critical mechanisms in AI and the non-hierarchical accumulation of information operate as a technique of de-futurization: by forcing society to operate based on probabilistic models trained on the past, the capacity to create genuinely new alternatives is stifled. When the truly unpredictable occurs (systemic shocks), the model collapses, revealing the fragility of a society that entrusted its evolution to the machine. The objective structure of AI time (the Chronos of milliseconds) advances at a pace incompatible with human deliberation. Life-or-death decisions are calculated in purely mathematical time, eliminating the possibility for the individual to experience the time necessary for ethical judgment and moral reasoning.

Within the framework of social time operations, AI reveals its nature as a socio-temporal power device. It is not limited to measuring time or predicting data; it restructures human institutions by operating at speeds that marginalize human intervention and ethical responsibility. By commodifying the future to resolve present uncertainty and accelerating decision-making cycles through market pressures, Artificial Intelligence transforms social time into an extractive and opaque resource, closing off society's creative possibilities and subordinating lived experience to the relentless logic of computing. Under these conditions, prediction becomes the dominant temporal form, transforming analysis into a real-time cycle that constantly iterates between past data, present updates, and future projections to anticipate human propensities. It is no longer just about producing goods, but about operating in an economy of prediction and induction that seeks to anticipate demand and shape behavior. This predictive logic imposes a new regime of algorithmic anticipation in which value no longer resides in the present, but in the ability to calculate future behavior and optimize individuals.

The concept of de-futurization refers to the process by which prediction, calculation, and risk management techniques attempt to control the future, reducing its inherent openness to a few calculable sequences of events. For the future to truly exist, it must remain open, unpredictable, and contain multiple possible courses of action. However, disciplines such as econometrics and structured finance assume they can derive the unpredictability of the future from past data and patterns. In doing so, they simplify the complexity of tomorrow in order to make seemingly safe decisions today. By using these predictive techniques, society and markets consume the future in the present. Current decisions are made that drastically limit the freedom and space of possibilities for tomorrow. This generates a kind of colonization of the future, where profits are extracted in the present at the cost of mortgaging and exhausting the alternatives that society will have available later. The biggest problem with this process is that the future resists being controlled or de-futurized. Attempts in the present to strengthen predictability about tomorrow end up producing the exact opposite effect, making the real future far more surprising and turbulent. The false sense of security provided by predictive models leads actors to take more risks, which generates systemic and uncontrollable macro-risks that the models themselves are unable to foresee.

When the real future finally arrives and diverges from the precise projections calculated by the models, collapse ensues. The result is profound paralysis and a loss of human agency. Operators and society discover they have exhausted their options and face a futurelessness. Trapped within the limitations imposed by their own past predictions, they lose their capacity to decide, to act, and to be productively surprised by new possibilities. In short, this phenomenon describes the drama of a society that, in its obsessive quest to secure and anticipate what is to

come, ends up stifling novelty and locking itself into a prefabricated future that no longer belongs to it. This system profoundly impacts the subjective experience of work and daily life. On a daily level, life is mediated and constantly monitored by automated devices. The subject's identity ceases to be a holistic construct and becomes an anticipatory and speculative self, forced to constantly modulate itself in a fluid environment to adapt to the predictions of algorithms. In the workplace, time is fragmented and made precarious. Tasks, even cognitive ones that previously required complex judgment, are delegated to the machine, which desubjectifies the worker and empties entire professions of meaning. Furthermore, the illusion of automated intelligence is sustained by invisible and precarious labor (human micro-labor in the shadows) that feeds the digital infrastructure.

Ultimately, all of this generates serious tensions between automation and democratic deliberation, fostering the emergence of an algorithmocracy or algorithmic government. The main tension lies in the fact that automation circumvents the rational Habermasian public sphere, replacing democratic consensus with opaque technological black boxes.

This produces the following conflicts:
1. **Opacity and displacement of responsibility:** When AI makes decisions with social impact (for example, in the allocation of social welfare or criminal justice), it is almost impossible to determine who is responsible, leaving citizens without clear ways to question and repair damages.
2. **Technical authority as symbolic violence:** A false appearance of mathematical objectivity is imposed, naturalizing historically biased decisions. This symbolic violence undermines the capacity for citizen resistance, as discriminatory results are presented as incontrovertible technical facts .
3. **Manipulation and fragmentation:** The deliberative public sphere is replaced by information bubbles where automated tactics (micro-segmentation, deepfakes, bots) manipulate emotions, exacerbating polarization to the detriment of rational debate.

Furthermore, the concept of temporal regimes was proposed by Felipe Torres (2022; 2018)as a way to understand how societies live, organize, and experience time. Instead of viewing time as a single line or as a collection of isolated moments, Torres proposes an analytical lens that integrates different ways of experiencing time: from daily routines to historical transformations, including our ideas of the future. With this perspective, he seeks to overcome reductionist views and unite trends that previously seemed opposed, such as standardization and temporal diversity.
While authors like Gurvitch (1964)presented these dimensions as separate, Torres suggests that they can coexist within the same logic. In other words, temporal regimes help us see how the ways in which we remember the past, act in the present, and project the future is intertwined, while simultaneously revealing power relations, material structures, and social contradictions.

According to Torres, a temporal regime is a complex, organized, and multifaceted structure that shapes how time is experienced in a society. It functions as a unifying core that allows for the blending and stabilization of different temporal layers: the past, the present, and the future. This gives rise to dominant configurations, such as a more linear or cyclical perception of time, or an emphasis on speed or pause. The relevance of this notion lies in its ability to encompass contradictions: a temporal regime can include both continuities and changes, uniformities and diversities, norms and everyday practices. The word “regime” suggests the idea of repetitive and stable patterns, but it also opens the door to the simultaneous existence of multiple patterns, even those in tension with one another. Thus, these regimes are not abstract ideas: they become visible in concrete social practices, in how we work, rest, study, or think about our lives.

Torres identifies three fundamental aspects that intertwine in every temporal regime: iterability, articulabilit y, and governmentality:-
1.**Iterability:** This refers to how certain elements of the past are repeated and kept alive in the present. Traditions, for example, are a way of iterating values, norms, and customs. Although no regime can avoid repetition, each manages it in different ways.
2. **Articulability:** This refers to the capacity to connect and make visible different ways of organizing time. For example, in the same society, linear logic (progress, chronology) and circular logic (natural rhythms, rituals) can coexist, as well as tensions between duration and rupture. This dimension allows us to consider the mixing and overlapping of temporalities.

3. **Governmentality:** This refers to how time is used as a tool of power. For example, when access to the future is limited (due to lack of opportunities, inequality, or violence), people may feel trapped in a hopeless present. Thus, the ways in which we organize time also influence how we govern individual and collective life.
This approach finds its etymological root in the Latin regere (to govern, to direct), which reinforces the idea that temporal regimes not only describe time, but order it, shape it and channel it, as would be done with a political body or even a medical treatment.

The concept of temporal regimes helps resolve a common tension in time studies: on the one hand, there are theories that insist we live in an era marked by instability (such as the acceleration or compression of spacetime), and on the other, there are studies that highlight the diversity and fragmentation of temporal experiences. Far from seeing these two positions as irreconcilable, Torres proposes understanding them as complementary dimensions of a single analytical framework. The same core values of global capitalism simultaneously drive the search for a universal temporality (to make production more efficient, for example) and respect for cultural differences (as a form of political legitimation). Thus, we can see how a globalized and technological time coexists with profoundly different local experiences, marked by gender, class, age, or culture. Although his focus is on Western societies, Torres recognizes the value of looking at other geographical contexts to broaden or challenge these conclusions. Felipe Torres emphasizes that time regimes are deeply connected to politics and technology. Political decisions (even when disguised as neutral) are at the heart of how time is regulated: from working hours to school calendars and life cycles. The following is a critical evaluation of the behavior of Artificial Intelligence (AI) structured around the three fundamental aspects of the temporal regime proposed by Torres: iterability, articulability and governmentality.

Table 3: Evaluation of the temporal regime of Artificial Intelligence

Aspect	Behavior in Artificial Intelligence
1.Iterability (Repetition of the past in the present)	The extraction and perpetuation of the past. The core of modern machine learning is based on massive iterability. During its training phase, AI digests colossal amounts of historical data, assimilating decades or centuries of information to apply it in the present. AI tools iterate the intellectual output of countless years of human experience almost instantaneously.
2. Articulability (Connection of different temporal logics)	The hybridization of machine, cyclical, and linear time: AI demonstrates an immense capacity to articulate multiple temporalities. At the algorithmic level, architectures such as Recurrent Neural Networks (RNNs) connect the past and present by feeding the output of one instant back into the input of the next, capturing temporal dependencies in sequences. At the predictive level, hybrid AI models articulate linear logic (long-term trends) with circular logics (components of seasonality or natural cycles) to predict the future.
3. Governmentality (Time as a tool of power and control of the future)	The algorithmic governance of opportunities and life: In the context of AI, the speed of time is used directly as a tool of power. In sectors like finance (high-frequency trading), reducing latency to microseconds translates into a brutal competitive advantage, allowing those who control the technology to capitalize on opportunities and monopolize the future before others can react.

Source: own elaboration based on Torres(2022; 2018)

While iteration grants AI an unprecedented body of experiential knowledge, it comes at a serious ethical cost. By iterating over the past, AI risks repeating and perpetuating historical inequalities. If training data contains biases, the algorithm iterates these discriminatory values in the present, reproducing unjust outcomes in critical sectors such as healthcare or criminal justice. Technological iteration is not neutral; it can be a mechanism for reproducing past injustices. AI articulates a profound tension between biological and technological time. By injecting artificial time into subjects, the linear, biological scale of human life is superimposed on the hyper-accelerated scale of machines, allowing humans to symbolically accumulate 100 years of experience for every year they live. However, this articulation also generates conflicts when the machine's speed (milliseconds) becomes incompatible with the time required for human ethical deliberation, creating “black box” systems where speed sacrifices transparency.AI exerts

governance by limiting or granting people's access to the future through automated, real-time decisions. Because these systems operate without direct human oversight, they assume the power to dictate individuals' futures in fractions of a second. For example, in autonomous vehicles, an algorithm governs life-or-death decisions about whom to protect in the event of an accident. In medicine or finance, a biased algorithm can deny appropriate treatment to a minority or block legitimate transactions by labeling them as fraud, trapping people in a present devoid of opportunities and causing immediate hardship. AI organizes time at speeds unattainable for humans, governing collective life according to efficiency criteria that often sacrifice justice and fairness.

Through Torres's lens, Artificial Intelligence is not merely a computational tool, but a device of temporal power. Its capacity to iterate the past on massive scales allows it to predict a kind of future that risks automating discrimination. Its ability to articulate cyclical and linear rhythms creates augmented humans but subjects it to an incomprehensible speed. Finally, its governmentality manifests itself in how it uses real-time (millisecond) processing to exclude humans from critical decision-making, dictating who has access to resources, opportunities, or even survival itself. Regarding technology, its influence is twofold. On the one hand, there are time technologies, such as clocks and calendars, which allow us to measure and organize time (Johnston, 2022). On the other hand, there are technologies about time (such as instant communication and the internet) that, while not directly measuring time, completely transform our experience of time.

The rationalization of time, accelerated by technological development, is a clear example of how technology modifies daily life. This dual temporal insertion is key to avoiding getting lost in technocentric perspectives. Torres identifies several regimes that have had a profound impact on how we think and organize our time. Among them are progress: a linear idea of time that assumes that everything moves towards something better; utopia: a projection of the future as something ideal, desired, that has not yet arrived, acceleration: an experience of time as increasingly faster, more intense. These three elements form what Torres calls a regime of futurization, where the future becomes the driving force of history. Thus, the promises of a better world (utopia), the path to reach it (progress), and the urgency to achieve it as soon as possible (acceleration) are intertwined in a single imaginary. This relationship is not only conceptual but profoundly political: it structures our expectations, decisions, and ways of imagining change.

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