Anthropocene and Social Time

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(November 2021)

Abstract

This paper examines the Anthropocene not merely as a geological designation, but as a temporal rupture—an epochal disjunction between human-constructed temporalities and the rhythms of the living world. Drawing on a phenomenological and anthropological framework, particularly the work of Tim Ingold, it traces a genealogy of social time through key civilizational thresholds: the domestication of fire, the emergence of sedentary life, and the rise of capitalist-industrial temporality. These transitions mark a progressive detachment from ecosystemic temporalities, and the consolidation of abstract, homogenizing regimes of time. The paper argues that this desynchronization—between social and ecological time—constitutes a core feature of the Anthropocene, underpinning both the degradation of planetary systems and forms of temporal suffering. By reconceptualizing time as relational, embedded, and rhythmically co-constituted by human and more-than-human agents, the paper proposes a framework for critically reassessing contemporary temporal regimes. It concludes by articulating the philosophical stakes of revaluing ecosystemic time—not as a return to premodern cosmologies, but as a condition for temporal coherence, ethical responsiveness, and inhabiting a finite Earth with greater attunement.

Keywords: Anthropocene; Social time; Ecosystemic time; Phenomenology; Human–environment relations; Genealogy

We begin by examining what the notion of the Anthropocene encompasses, before situating it within a specific interpretive framework: that of a temporal approach. As "man" becomes implicated in the production of time, we ask how this production takes place—how social time comes to be constituted—drawing in particular on Tim Ingold's work. This will lead us, within the broader framework of a social critique of time, to a genealogical inquiry, and thereby to a "deep history of time": one that traces the links between the domestication of fire, the transition to sedentary life, the domestication of more-than-human beings, and time itself—culminating in a reflection on the importance of revaluing ecosystemic time in the Anthropocene.

The contemporary era is increasingly marked by an awareness of ecological upheavals—climate change, biodiversity loss, terrestrial and aquatic pollution—attributable to human activities, and more specifically to dominant practices within the capitalist economy: productivism and extractivism. The term *Anthropocene* emerged around the turn of the century and has become established as a way of naming these alarming realities, although it was originally intended to designate a new geological epoch. But what, exactly, does it say?

1. The Anthropocene

Origins

The notion of the Anthropocene emerged in the field of Earth system sciences—a multidisciplinary domain that studies the Earth as an integrated system and investigates interactions among its spheres (atmosphere, hydrosphere, lithosphere, biosphere) and their respective processes. Though it initially belonged to geology in the 2000s, the concept quickly spread to other scientific disciplines, before entering everyday language via political and media usage. As its use expanded, it gained in semantic breadth what it lost in precision, acquiring new layers of meaning across the various domains in which it was taken up.

The term was first introduced by Paul Crutzen—a chemist and recipient of the 1995 Nobel Prize for his work on the ozone layer—during a working session of the International Geosphere-Biosphere Programme (IGBP). In response to a discussion on the antiquity and intensity of human impacts on the planet, Crutzen is said to have exclaimed: "No! We are no longer in the Holocene, but… in the Anthropocene!"[1]
He would later define the term in a 2000 article co-authored with Stoermer[2]—"The Anthropocene"—as the entry into a new epoch in which "human activities have become so widespread and profound that they rival the great forces of nature and are pushing the Earth into a planetary *terra incognita*." The term is thus meant to mark a rupture in epochality caused by the extent and intensity of human practices. Under the pressure of *anthropogenic geological forces*, the Earth has veered from its natural trajectory.

Debates

The concept has sparked intense debates across the various fields it traverses. Even within its discipline of origin, it proves problematic: distinctions and transitions between geological epochs are defined by stratigraphic markers—so-called "golden spikes"—which correspond to material traces enduring through time. In this case, however, such a marker is elusive, as it would require driving a spike between two clearly distinct geological strata—something not yet possible in the Anthropocene, since its defining layer has not yet been deposited.

In 2016, the Anthropocene Working Group endorsed the pertinence of formally establishing the Anthropocene as a new geological epoch, proposing as its stratigraphic marker the radionuclide fallout from the first atomic bomb tests. Yet radioactive isotopes have relatively short half-lives

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[1] Alexander Federau, "Philosophie de l'Anthropocène : Interprétations et Épistémologie" (thesis, Dijon, 2016), http://www.theses.fr/2016DIJOL006. 34.
[2] Paul J. Crutzen and Eugene F. Stoermer, "The 'Anthropocene' (2000)," in *Paul J. Crutzen and the Anthropocene: A New Epoch in Earth's History*, ed. Susanne Benner et al. (Cham: Springer International Publishing, 2021), 19–21, https://doi.org/10.1007/978-3-030-82202-6_2.

when viewed on geological timescales—the half-life of plutonium, for instance, is 24,000 years—and thus do not provide sufficiently durable criteria.

As a result, the question of when exactly the Anthropocene begins remains open. Referring as it does to the vast temporal scale of the Earth itself, this question demands a singular exercise in thought: perceiving our present as the past of a future geology, so as to characterize it with the greatest possible precision.

Within the social sciences, the term *Anthropocene* also provokes debates, and alternative designations, considered more accurate, have been proposed. One major line of critique points to its ethnocentric presuppositions: the notion rests on an abstract and homogenizing figure of the *anthropos*, one modeled on a Western lifestyle. It fails to account for the diversity of lifeways and environmental impacts, and thereby obscures the underlying disparities. It is crucial to emphasize that while responsibilities may be shared, they are not equally distributed—and though consequences are global, the most precarious populations are the first to suffer.

A second line of critique underscores how the notion of a unified humanity naturalizes and conceals the economic processes driving ecological mutation. In this view, capitalism appears as an inevitable trajectory of human culture rather than a historically contingent development open to critique. To counter this, Andreas Malm and Jason Moore propose the term *Capitalocene* instead of *Anthropocene*.

For her part, Donna Haraway suggests the concept of *Chthulucene*, inspired by the name of a small spider and derived from the Greek root *khthôn*—meaning earth, or the subterranean world. In Greek mythology, chthonic forces are "abyssal and primordial, not yet astralized into gods"[3]. Haraway's proposal invites us to decenter the human, to abandon anthropocentric viewpoints, and to consider instead the multiplicity of interspecific entanglements that weave terrestrial existence. In doing so, she opens the possibility for other narratives—ones through which we might recompose worlds alongside more-than-human beings.

Clarifying a Conceptual Use

The notion of the Anthropocene is thus contested—both in its usage and in its very composition. Yet its success suggests that it speaks to something essential about our present. It is therefore worthwhile to acknowledge its heuristic value and to clarify its conceptual use: to frame the problem, render it intelligible, illuminate its causes, and open the way toward theoretical and practical reflection.

[3] Donna Jeanne Haraway and Vivien García, *Vivre avec le trouble* (Vaulx-en-Velin, France: Les éditions des mondes à faire, 2020). 57.

The Anthropocene names a new geological epoch in which human activities fundamentally alter the functioning of the Earth system—understood as the complex set of interactions that compose the terrestrial environment. Multiple histories are interwoven within it: the history of the Earth, of life, and of humanity. These histories unfold according to incommensurable temporalities, and yet we must find a way to articulate and hold them together.

It also brings to light the limits of the Earth system—limits that are not only material, but temporal. Environmental thresholds entail a temporal imperative[4]: they confront us with the exhaustion of planetary rhythms and the unsustainable acceleration induced by capitalism. They remind us that **time is the first non-renewable resource**—perhaps even the only one, depending on the temporal scale we consider.

The Anthropocene can thus be understood as a moment in Earth's history in which human practices produce time itself: human activity has so profoundly impacted the functioning of the Earth system that it has forced it off course, breaking its natural cycles. This disruption of rhythms engenders a paradoxical predictable unpredictability in the events to come. The Anthropocene is the emergence of a new temporal imaginary—one in which the time of Earth's history, with its own rhythms, intersects with the time of human history and its temporalities. And this shared history is heading toward its end: it is not life itself, nor the planet, that is at risk, but the conditions that make Earth habitable for the human species and for most of the species we know today."

What defines the Anthropocene is therefore the upheaval of rhythms and temporalities—both human and non-human—and the appearance of temporal limits.

The Anthropocene is approached here through its temporal dimension: we propose to analyze it in terms of the singular relation to time that has brought it into being, and to consider the possible responses through the lens of temporality. It is conceived as a desynchronization between human and non-human temporalities—a disjunction between the rhythms of human activity and those of the living—brought about by a progressive extraction of human life from the rhythms of the living world, leading ultimately to their alienation.

Over the course of civilizational processes, our relation to time has emancipated itself from the rhythms of the Earth and the living—only to later appropriate and exploit them. This dynamic has given rise to limits that now confront us with increasing urgency. To critically examine the human construction of time—what we call social time—is to denaturalize our temporal relations, to bring to light the mechanisms of extraction and appropriation of the rhythms of the living, and to expose the fractures between "humanity and its environment" that underlie the Anthropocene.

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[4] Mathilde Szuba, "Gouverner Dans Un Monde Fini : Des Limites Globales Au Rationnement Individuel, Sociologie Environnementale Du Projet Britannique de Politique de Carte Carbone (1996-2010)" (thesis, Paris 1, 2014), http://www.theses.fr/2014PA010540.

Social time thus becomes a powerful tool for thinking the Anthropocene—both in terms of its emergence and of the practical responses it demands.

2. Social Time

The social dimension of time is twofold: on the one hand, it is constituted as a mode of collective regulation for practices; on the other, it is constitutive of those practices, insofar as it enables a shared attentional space—a common presence in time from which social space emerges.

Social Time as Framework

Time weaves the fabric of the social, temporal patterning provides the shared reference framework—an array of fixed points anchored to a common orientation—that makes coordination and synchronization of individual and collective activities possible. Time is thus a fundamentally structuring and cohesive norm within a social group.

Narrativized time constitutes a matrix of sociality: it shapes and orders shared representations, structuring practices through a temporal ordering that endows them with meaning, direction, and an imagined origin and end. In this way, time functions as a social binder, enabling orientation and intelligibility within the human experience.

Time, understood as the framework that structures our experience of temporality and serves as a shared reference for synchronizing practices, is above all a socially instituted set of relations to time. It is a constructed relation—a social framing—exemplified most clearly by the calendar. Social time always serves to organize agents' practices and to enable a sharing of individual experiences. In doing so, it fulfills a cohesive function, reinforced through rituals—regulated and symbolic practices that mark collective experiences of particular significance.

Time is essentially relational: it emerges through the coordination of processes, is actualized within relationships, and supports the fabric of social interaction. Within this relationality, we find a triple structure of domination: within society, between individuals (via the valuation of one's time relative to others'); within the individual (through internalized self-discipline); and between the society and its environment (through the imposition of a human temporality).

This grants social time a non-negligible normative dimension. On one side, it imposes social order, regulating both practices and attention—its availability and direction—at the heart of both the social and the subjective. On the other, it serves as a modality by which the rhythms of "nature" are subordinated to human temporalities.

While there exists a plurality of social conceptions of time, both intra- and inter-societally, there is a fundamental unity beneath this multiplicity: the very fact of temporal structuring is a social invariant. Social time, then, is a universal function actualized in different forms across different societies and social groups.

In its second dimension, time is social because it is shared—because social space is constituted by co-presence in time. This mutual presence is the ground of both our temporal and social experience.

Social Time as Temporalizing Practical Context

This dimension is the focus of British anthropologist Tim Ingold, who adopts what he calls a "dwelling perspective," grounded in the Heideggerian proposition: "Only if we are capable of dwelling, only then can we build."[5] In Ingold's terms: "The forms people build [...] arise within the current of their involved activity, in the specific relational contexts of their practical engagement with their surroundings."[6]

Combining anthropology and phenomenology, Ingold formulates a methodological stance rooted in immediate, embodied experience—always already engaged in the world, such that agent and context are inseparable. And that context is relational: it is inhabited not only by humans but also by more-than-human beings. As Ingold notes, "social relations are a subset of ecological relations."[7] Human experience is embedded in a vast mesh of interdependencies, which both shape and are shaped by our modes of dwelling; we do not inhabit the world so much as we inhabit *with* it.

From this perspective, temporality inheres in our modes of engagement within this web of relations, in our dwelling activities: "temporality inheres in the pattern of dwelling activities that I call the taskscape."[8] The concept of *taskscape*, coined by Ingold, refers to the ensemble of interwoven practices[9] and co-activities that compose the qualitative, heterogeneous environment we inhabit and dwell :

"*It is to the entire ensemble of tasks, in their mutual interlocking, that I refer by the concept of taskscape. Just as the landscape is an array of related features, so—by analogy—the taskscape is*

[5] Martin Heidegger and Jean Beaufret, *Essais et conférences*, trans. André Préau (Paris, France: Gallimard, 1973).192.
[6] Tim Ingold, *The Perception of the Environment: Essays on Livelihood, Dwelling & Skill* (London ; New York: Routledge, 2000). 186.
[7] Ingold. 5.
[8] Tim Ingold, "The Temporality of the Landscape," *World Archaeology* 25, no. 2, (1993): 152–74.153.
[9] Ingold.158.

an array of related activities. And as with the landscape, it is qualitative and heterogeneous: we can ask of a taskscape, as of a landscape, what it is like, but not how much of it there is."[10]

Our practices unfold in a field of interdependent activities involving multiple agents—human, more-than-human, biotic and abiotic—whose rhythms entangle to form its temporal character.

The temporality of the taskscape is social not in the sense of an external frame regulating relations—as in institutionalized social time—but because people, through their practices, are mutually present to one another: "The temporality of the taskscape is social, then, not because society provides an external frame [...] but because people, in the performance of their tasks, *also attend to one another*."[11]

What takes precedence here is not the organization of relationships, but mutual co-presence—the relational dynamic itself—which is a continuous perceptual attention that, through resonance, adjusts to the shared context.[12] The intrinsic rhythm of social life is thus "a complex interweaving of many concurrent rhythms"[13] and the temporality of the taskscape resides in "the network of interrelationships between the multiple rhythms of which the taskscape is itself constituted"[14]

Social rhythm alone is not sufficient to characterize our experience of time, since other-than-human rhythms also participate in the practical temporal context in which we are embedded. The rhythms of more-than-human life—along with abiotic rhythms such as the alternation of day and night, seasonal cycles, and tides—contribute to the composition of the taskscape not by virtue of social construction, but because our experience is embodied, and therefore responsive to a constellation of movements that unfold in and around us.

The practical context temporalizes through its rhythmic relational mesh. Time is not an external frame imposed upon our experience of the world; it is immanent to it, generated by the ensemble of processes that compose it. Time here is no longer merely social, but ecosystemic. An ecosystem, understood as the totality formed by a community of living beings in relation with their environment, encompasses all scales—from the Earth to the river, from the wind to the stone. From this web of relations emerge rhythms—periodic repetitions—and tempos—movements of varying speed—that together constitute ecosystemic time.

We are thus confronted with two dimensions of social time: first, social time in the strict sense, understood as the socially constructed common frame for synchronizing practices and experiences;

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[10] Ingold.158.
[11] Ingold. 160.
[12] This approach predates the work of Hartmut Rosa on resonance and draws on Alfred Schutz's notion of *mutual tuning-in* (*syntonie*), which refers to the synchronization of streams of consciousness through bodily expression and interpretation
[13] Ingold, "The Temporality of the Landscape.".160.
[14] Ingold. 160.

and second, an ecosystemic time, inherent to the full set of circumstances in which our practices unfold—understood as a temporalizing practical context. This raises the question of how these two dimensions might be articulated together.

Articulating the Two Dimensions of Social Time

In his article *Work, Time and Industry*,[15] Tim Ingold examines the impact of industrialization on temporal experience, drawing in particular on ethnographic studies of train conductors. He begins by characterizing the temporal experience of non-industrial societies as intrinsic to the array of specific practices that make up the patterned fabric of a community's daily activities. In doing so, he draws on the work of E.P. Thompson[16], adopting his phrase *task-oriented* to describe a mode of engagement guided by practical tasks. This brings us back to the concept of the taskscape we previously introduced.

Ingold then sets out to demonstrate that the formal logic of capitalist production undermines this practical orientation by establishing a division between the domains of work and social life—the very ground of practical temporalization. However, this division is artificial and does not coincide with people's lived experience, which remains mutually engaged within the concrete framework of their practices. Ingold thus argues that the practical orientation to time does not disappear under industrialization, but persists even in the industrial work environment, where practices are still engaged and negotiated within a temporalizing context composed of multiple rhythms—biotic and abiotic, living and non-living. The clock, as one such abiotic agent, must be dealt with through strategies of adaptation—just like any other machine encountered within the practical context. "But the time intrinsic to the experience of dealing with the clock is not, itself, the time of the clock"[17]: aligning oneself with clock time does not mean that it becomes the time one actually lives..

"*The ability to co-ordinate one's movements with the passage of time as measured by the clock is an acquired skill, and the coordination is itself a task carried on alongside all the other tasks of social life. Clocks are a ubiquitous feature of the industrial environment, which people must learn to cope with—just as they must cope with other kinds of machines. But the time intrinsic to the experience of coping with clocks is not itself clock time.*"[18]

Clock time is not merely imposed from without—it becomes internal to the taskscape through practices of accommodation. With the example of train conductors, Ingold shows how the rhythms of the clock are woven into the temporal fabric of practical engagement: timing becomes a skill,

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[15] Tim Ingold, "Work, Time and Industry," *Time & Society* 4, no. 1 (February 1995): 5–28, https://doi.org/10.1177/0961463X95004001001.
[16] E. P. Thompson, "TIME, WORK-DISCIPLINE, AND INDUSTRIAL CAPITALISM," *Past & Present* 38, no. 1 (December 1, 1967): 56–97, https://doi.org/10.1093/past/38.1.56.
[17] Ingold, "Work, Time and Industry.". 20.
[18] Ingold. 20.

not merely a rule. Thus, the clock becomes one rhythm among others—not a hegemonic force outside the network, but an element within it.

Ingold's approach thus destabilizes the notion that modernity simply replaces embodied, situated time with abstract, externalized time. The experience of industrialized time remains embedded in practical life. Yet it is under constant tension: practical time must be continually negotiated within a normative framework that seeks to deny its relational grounding. This negotiation is not neutral; it can be a form of tacit resistance, adjustment, or internalized alienation, depending on context.

Ingold's final insight is particularly striking: we are no less alienated from clock time than the Nuer—except that we are forced to contend with it.

"*In a sense, clock time is as alien to us as it is to the Nuer; the only difference is that we must contend with it. If we differ from the Nuer, it is not because they have a task orientation and we do not. The difference is that we are compelled to accommodate that orientation […] within the straitjacket of a 'Western' […] institutional and ideological framework that seeks at every turn to deny the reality of situated social experience*."[19]

Our practical time is forced to conform to a structure that denies the reality of situated social experience. This results in a continual negotiation between lived, practical experience and the normative ideological framework that seeks to normalize it. This diagnosis would explain contemporary temporal suffering as the effect of a dissociation between the context of our lived practices and the normative framework imposed upon them.

It is therefore pertinent to undertake a genealogical investigation of social time— to trace the origins of the social framework that governs our practices, to understand how we became desynchronized from the temporal context in which our practices once unfolded—that is, from ecosystemic time— and how we came, in turn, to conform to a constructed, anthropogenic temporal regime.

3. Toward a Social Critique of Time: A Genealogical Approach

Considering the necessity of conducting a social critique of time—one that aims to grasp its origins and structuring principles—in the context of a reflection on the Anthropocene conceived as the desynchronization between human temporal orders and ecosystemic rhythms, we will begin with the hypothesis of a "weak" Anthropocene, or paleo-Anthropocene, as advanced by authors

[19] Ingold.27.

such as James C. Scott. This version would date back to the domestication of fire, 400,000 years ago, as a "qualitative and quantitative leap in our impact on the environment"[20].

The Domestication of Fire

Identifying the domestication of fire as a tipping point and an entry into the Anthropocene seems relevant, as it represents a major technological revolution—a trigger for humanity's increasing influence on the natural world. Anthropogenic ignition reshaped landscapes, and fire also marked a key step in the cognitive and social evolution of the human species[21], and above all, in relation to time.

Domesticated fire, by providing warmth, light, and safety, encourages gathering and makes the hearth a central element in the spatial organization of human habitation[22]. Its maintenance requires a certain form of coordination. This shared time opens a space for joint attention, where more developed sociability could emerge. The hearth, as a shared attentional space, is likely where a common, meaningful world could be built—structured through narrative and temporalization: the mythical world[23].

Fire allows humans to no longer depend on cosmic rhythms (solar and lunar) for their activities[24]. They can explore wider territories, with a mobile source of heat, and above all, extend activity beyond sunlight thanks to illumination by flame. Exposure to firelight affects melatonin production, altering circadian rhythms and enabling greater nighttime availability for sociability around the fire[25].

This constitutes the first act of temporal emancipation from natural cycles. It supports social dynamics while simultaneously initiating the anthropogenic transformation of the environment.

By means of fire, hunter-gatherers shaped "ecological niches"—forest spaces adapted to attract animal species they consumed and to favor plant growth. These niches were maintained through seasonal movement. Paleolithic hunter-gatherers, nomadic or semi-nomadic, lived in synchrony with natural rhythms. Their survival—less precarious than collective imagination often suggests—

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[20] James C. Scott and Jean-Paul Demoule, *Homo domesticus: une histoire profonde des premiers États*, trans. Marc Saint-Upéry (Paris, France: La Découverte, 2019). 20.
[21] "Il y a 400 000 Ans : La Domestication Du Feu, Un Formidable Moteur d'hominisation - ScienceDirect," accessed September 28, 2021, https://www.sciencedirect.com/science/article/pii/S1631068305001740?via%3Dihub.
[22] Catherine Perlès, *Préhistoire du feu* (Paris, France: Masson, 1977).
[23] Polly W. Wiessner, "Embers of Society: Firelight Talk among the Ju/'hoansi Bushmen," *Proceedings of the National Academy of Sciences* 111, no. 39 (September 30, 2014): 14027–35, https://doi.org/10.1073/pnas.1404212111.
[24] "Il y a 400 000 Ans : La Domestication Du Feu, Un Formidable Moteur d'hominisation - ScienceDirect."
[25] Laura Attwell, Kris Kovarovic, and Jeremy Kendal, "Fire in the Plio-Pleistocene: The Functions of Hominin Fire Use, and the Mechanistic, Developmental and Evolutionary Consequences," *Journal of Anthropological Sciences*, no. 93 (2015): 1–20, https://doi.org/10.4436/JASS.93006.

relied on deep environmental knowledge and awareness of the cycles of cohabiting life forms. Whether migratory routes of animals or maturation periods of plants, they had to integrate vast amounts of information, denoting anticipatory capacities—forms of practical foresight rooted in environmental attunement—that enabled them to organize activities with delayed returns.

Although this marked a partial emancipation from natural rhythms, humans remained largely dependent on them for subsistence—not in opposition to a hostile nature, but in a relationship grounded in reciprocity, care, and trust with the inhabited environment.

Anthropological studies of hunter-gatherer peoples show that their relationships with their environments are not based on struggle or domination, but on attachment to a world that provides for them—a world to care for, as it cares for them. Animals are not pursued as enemies but offered themselves as gifts in a reciprocal regenerative process. This world is woven through interagency: humans and more-than-humans alike are agents contributing to its balance through relationships of familiarity and reciprocity[26].

It is surely more accurate to rely on such representations than on the modern Western myth of man's agonistic domination of nature when thinking about the Neolithic human-world relationship. It is in this light that we now approach the processes of sedentarization and domestication.

Sedentarization and Domestication

Sedentarization and domestication are progressive processes that can be observed in partial – and not concurrently – forms throughout the Paleolithic, and which became more pronounced during the Neolithic period. While they are often considered as going hand in hand, this is not always the case: traces of domestication without sedentarization and of sedentarization without domestication exist. Here, however, we will focus on the concrete dynamics of sedentarization and domestication during the Neolithic —around 8000 BCE.

The question that remains open is: why did humans shift to an agro-pastoral mode of life? This lifestyle requires more effort, and significantly more working time, than subsistence based on hunting and gathering—what Marshall Sahlins described as the "original affluent society."[27]

One hypothesis proposed by French archaeologist Jacques Cauvin[28] is that of a symbolic revolution—a transformation of mental dispositions that led to new social relations. Groups

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[26] Charles Stépanoff and Jean-Denis Vigne, eds., *Hybrid Communities: Biosocial Approaches to Domestication and Other Trans-Species Relationships*, Routledge Studies in Anthropology 46 (Abingdon, Oxon ; New York, NY: Routledge, 2018).
[27] Marshall Sahlins, Tina Jolas, and Pierre Clastres, *Âge de pierre, âge d'abondance: l'économie des sociétés primitives*, Folio 264 (Paris: Gallimard, 2017).
[28] Jacques Cauvin, *Naissance des divinités, naissance de l'agriculture*, Biblis Histoire 45 (Paris: CNRS Éd, 2013).

became larger, and beyond a certain size (often linked to Dunbar's number—around 150 individuals), stability became more difficult. This required some form of social organization to sustain them, and the shift to agriculture may reflect this change.

Sedentarization

Sedentarization is the long-term habitation of a place. For anthropologist James C. Scott[29], this transition to a fixed territory results in a contraction of knowledge and practices: from the plurality of known life rhythms to the reduced diversity of lived environments, sedentarization limits sensory, ecological, and social diversity. The temporal environment is now limited to agrarian and ritual rhythms. The network of resources for the agro-pastoralist articulates a narrower range of specific cycles than that of the hunter-gatherer, which leads to a subordination of existence to these rhythms and to a routinization of experience.

Still, it does not seem sufficient to conclude that rhythms were merely restricted due to the loss in diversity of natural cycles organizing life. One could instead speak of an anthropization of rhythms—a shift whereby the organizing structure of temporal experience moves from natural cycles to human-constructed, socially imposed patterns. There is indeed a loss of the ecosystemic quality of lived rhythms, but they are replaced by social rhythms. These practical social rhythms were designed to organize life and regulate activity in a more fixed and patterned way. They foster a different mode of sociability, involving a greater number of people living together in close quarters and engaging in the collective rhythms of agricultural work.

Domestication

Domestication, meanwhile, is now understood as an unintentional, entangled process[30]. Humans are not only the agents but also the subjects of transformation through domestication[31], which unfolds in the *domus*—the shared interspecies space of habitation. The *domus* is a place where humans, animals, and plants live together in daily proximity, within which rhythms become hybridized. The agents of the domus—human and more-than-human—tune and shape each other's rhythms.

Only certain species were domesticated, presumably those better suited to the proximity and rhythms of human life. Domestication is above all a progressive shift in the modality of relating to more-than-human beings. Where hunter-gatherers engaged in relationships of revelation—of discovery—domestication introduces dynamics of control and induction, whereby the movements

[29] Scott and Demoule, *Homo domesticus*.
[30] Stépanoff and Vigne, *Hybrid Communities*.
[31] Stépanoff and Vigne.

of more-than-humans are directed and constrained, rather than observed and followed. Similarly, human movement becomes constrained and induced by the necessities of sedentarization.

Humans and more-than-humans are thus transformed through domestication, and their rhythms hybridized, within a dynamic of social elaboration that increasingly privileges human-constructed time over ecosystemic rhythms.

Resources are no longer freely provided by the environment; their availability must now be anticipated and organized within the annual seasonal cycle. This anticipation is managed collectively, and its projection materialized in ritual forms. Time thus becomes social, and the social becomes time—because it can no longer be experienced as simple presence, whether to other members of the group, now too numerous, or to environmental resources, whose availability is deferred.

The beginnings of human time organization appear here as mechanisms of regulation and social formation—constituting a form of behavioral self-domestication. These mechanisms aim to structure and regulate agents' practices, both social and productive, through emerging normative frameworks. This marks a second, more elaborate form of desynchronization from ecosystemic rhythms: the range of temporal references is now narrowed, and if not outright dominated, then at least redirected.

These are the first steps in the progressive desynchronization of human and non-human temporal patterns, and in the emergence of social time as dominant over ecosystemic temporalities.

Conclusion

To conclude, the Anthropocene calls for a new narrative of time—one in which time is no longer a human prerogative nor an unlimited neutral backdrop but is understood in terms of its inter-agentivity and its limits. The time of human history ends not with the extinction of life or of the planet, but when the Earth is no longer habitable for the species—a moment that may not be far off, so long as we continue to treat the ecosystem as a stock of resources to be depleted at the current pace.

It is crucial to revalue ecosystemic time, in order to imagine alternative temporal representations and practices coherent with it—so that we might learn to live with the Anthropocene. This revaluation might also help alleviate the temporal suffering that grows as the social pressure of time increases, and with it the disjunction between time as it is lived in practice and the representations that govern it.

What is needed is a renewed coherence between ecosystemic and social time.

Revaluing ecosystemic time means attending to its rhythms—those of the living, human and more-than-human, revealed by chronobiology—as well as to the rhythms of human attention, studied by chronopsychology. These rhythms bring to light another kind of time: a scientifically observable, concrete time, but also one that we can feel and experience through attunement to our own rhythms and those of the world around us.

At the individual level, this revaluation calls for a reorientation of attention. In light of temporal limits, we must define what matters, where we give our attention, and how we choose to spend our time.

At the very least, we must learn—again—to love the time that remains.

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