

Neganthropy and the New Organological Configuration: Stiegler's Neganthropocene

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Abstract

This article explores Bernard Stiegler's concept of the Neganthropocene, which integrates thermodynamic principles with philosophical discourse to address the entropic challenges of the Anthropocene. Stiegler proposes 'neganthropy,' a transformative process transcending biological and informational constraints, fostering a sophisticated, self-aware, and culturally enriched human existence. By emphasizing the intergenerational transmission of knowledge and culture, Stiegler underscores the pivotal role of human agency in perpetuating the evolution of consciousness. The article delves into Stiegler's notion of 'neganthropic différance,' which reconfigures human experience and cognition, and examines the implications of this concept for economic, educational, and socio-cultural systems. Through a synthesis of Stiegler's neganthropy with Heidegger's and Derrida's ideas on entropy and *différance*, the article advocates for a reimagining of human agency, responsibility, and the ethical dimensions of technological development. This perspective calls for a holistic approach to fostering environments that prioritize creativity, critical thinking, and collective well-being, ultimately promoting sustainable and meaningful existence in the technological epoch.

Key Words: *Neganthropocene, entropy, organology, différance, technology, negentropy*

The concept of Neganthropocene, as proposed by Stiegler, draws upon thermodynamics. It is an intriguing perspective that connects human activity and its impact on the environment to the laws of energy and entropy. "conceptualizes the logic of pharmacology as one of detoxification by mobilizing negative entropy; hence negentropy is applied to all the processes of becoming that have a broad sweep: physico-chemical, vital, psychic, social, technical, and noetic" (Jagodzinski 153). The term "neganthropic," as employed by Stiegler, expounds a transcendence beyond the entropic confines of biological processes. It encapsulates the notion that the evolutionary trajectory leading to the development of advanced neural structures and behavioral plasticity does more than merely preserve genetic information.

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It fosters an epistemic and desiderative capacity within the psyche, distinguishing it from mere survival mechanisms. This emergent form of *différance*, distinct from genetic and neural conservation, engenders a dynamic interplay of knowledge and desire, facilitating a progression toward a sophisticated, self-aware, and culturally enriched existence, thus aligning with Stiegler's conception of human evolution as inherently 'neganthropic.'

Stiegler's idea of 'neganthropic' *différance* denotes a transformative process that innovatively reconfigures human experience and cognition, surpassing the confines of genetic and neural mechanisms. This concept facilitates the intergenerational transmission of knowledge and culture, engendering a cumulative advancement of human intellect and desire. Central to the emergence of a sophisticated psychic apparatus, capable of reflective thought and intentionality, 'neganthropic' underscores the pivotal role of human agency. It implies a dynamic interplay between the individual and their socio-cultural context, where knowledge and desire are perpetually reconstituted through engagement with external realities. This interaction perpetuates the evolution of human consciousness, characterized by an ever-deepening self and world comprehension.¹ Neganthropy transcends the *différance* effected by the dual operations of technical thermodynamics on biological thermodynamics. It fundamentally addresses the differential nature of infinite knowledge, which operates through extensive circuits of transindividuation, defying reduction to the informational entropy of finite, calculable signals. The localization intrinsic to the formation of neganthropic biological systems—whether at cellular, organismal, ecosystemic, or biospheric scales—embodies the biological economy of vital *différance*. However, the localizations of noetic or neganthropic *différance* are anchored in an aboriginal default of origin, encompassing infinite processes of idiomatization across diverse forms, thus perpetuating the evolution of consciousness (Ross 29).

Economically, any system necessitates the circulation, conservation, and expenditure of energy within a defined locality. In the bioeconomic circuits of vital *différance*, akin to the function of a steam engine, physical energy is harnessed and utilized, aiming for negentropic

¹ This transformative process underscores the ecological significance of human agency in shaping not only cultural and intellectual advancements but also our environmental footprint. By facilitating the intergenerational transmission of knowledge and values, 'neganthropic' *différance* enables a reflective reconfiguration of human actions and their consequences on the planet. This dynamic interplay between humans and their socio-cultural contexts is crucial for fostering an evolved consciousness that can address the challenges of ecological sustainability and resilience in the Anthropocene.

efficiency in the pursuit of subsistence, inevitably generating waste and necessitating replenishment (See Rosch 1101 ff.).² Contrariwise, the circuits of desire within the libidinal economies of neganthropological *différance* exhibit a unique characteristic: under optimal conditions, the expenditure of energy through work, which is not inherently opposed to play, as both can be transformative, can result in an augmentation of that energy. This increase is propelled by the potential of such work to envisage new future possibilities. The libidinal economy underscores the tangled connections between entities, paralleling the notion that mediated critiques often overlook the true complexity of the neganthropocene (Cole 77). Such critiques fail to grasp the intricate interplay of ecological, social, and economic factors that define this epoch, missing the profound intricacies involved.³

Stiegler's exploration of 'neganthropy' delineates a departure from conventional interpretations of entropy and negentropy by introducing a dimension of *différance* that surpasses biological and informational paradigms. This dimension is pivotal in understanding the complex interplay between technical and biological evolution and the resultant psychic apparatus engaged in epistemic and desirous activities. The formation of neganthropic *différance* encompasses not merely the preservation and transformation of energy but also the dynamic processes of idiomatization that drive cultural and intellectual evolution. This advanced perspective illuminates the intricate relationship between energy expenditure, knowledge transmission, and the perpetual evolution of human consciousness within the broader socio-cultural milieu.

² The comparison of bioeconomic circuits of vital *différance* to the functioning of a steam engine offers a compelling metaphor for understanding the economic systems governing the circulation, conservation, and expenditure of energy within a defined locality. Both systems aim for negentropic efficiency, striving to maintain order and sustain life while contending with the inevitable production of waste and the need for continual replenishment. However, this analogy also highlights critical limitations. Unlike the closed and mechanistic processes of a steam engine, biological and economic systems are inherently more complex and dynamic, influenced by myriad unpredictable factors such as ecological variability, social dynamics, and technological advancements. The emphasis on efficiency may overshadow the importance of adaptability and resilience, crucial for navigating the uncertainties of real-world systems. Moreover, the notion of "waste" in biological and economic contexts is nuanced; what is deemed waste in one process can be a resource in another, reflecting the intricate interdependencies within ecosystems and economies. This critical perspective urges a rethinking of bioeconomic strategies, advocating for a holistic approach that balances efficiency with sustainability, innovation, and equitable resource distribution.

³ The assumption of "optimal conditions" under which energy augmentation occurs warrants scrutiny. Such conditions are rarely uniformly available across different socio-economic and cultural contexts, leading to disparities in how this transformative potential is accessed and actualized. Additionally, the intricate balance between work and play is often disrupted in contemporary economies, where work can become exploitative and alienating, detracting from its transformative capacity.

Neganthropic *différance* is deeply entwined with the broader philosophical discourse concerning the nature of knowledge, desire, and the human condition. It suggests that human agency, through its interaction with socio-cultural and technical milieus, continuously reconfigures and transcends the limitations imposed by biological and informational constraints. This reconfiguration promotes an ongoing evolution of human consciousness, marked by an ever-deepening comprehension of self and world. Within this framework, addressing the Anthropocene fundamentally involves reimagining the governance of economic and educational systems to support the coherence and integration of exorganological entities. This requires acknowledging the limitations of algorithmic governance and embracing the transformative potential of neganthropic *différance*. Such an approach enables the envisioning and realization of a future where human and technical evolution are harmoniously integrated, fostering the perpetual growth of knowledge and desire.

The neganthropological function of reason, therefore, inherently encompasses the capacity to engender bifurcations that transcend mere probabilistic outcomes, including those deemed highly improbable. Singular events—such as the advent of life (organic or endosomatic organogenesis), the emergence of humanity (organological or exosomatic organogenesis), or epochal transformations like 'saving the world' amidst the erosion of our temporalizational capacities—cannot be adequately captured through probabilistic analysis alone, which fails to account for their inherent singularity. In this context, the form of reason required to confront the convergence of systemic limits surpasses the constraints of scientific objectivity, necessitating a broader epistemic and ethical engagement.

“Neganthropy is Stiegeler’s neologism for negentropy specific to human life; the generation of more order (complexity) to stave off disintegration (death). Negentropy is all about potential noetic wealth. The Neganthropocene is Stiegler’s vision as to how to turn things around with a new organological configuration of a new planetary culture; there needs to be a pharmacological reinvention and reappropriation of the media that constitutes the digital noosphere” (Jagodzinski 153). In the realm of noetic existence, these processes of concrescence, though involving localized systems, manifest as idiomatization processes that Stiegler terms localized technicizations. These processes are dualistically anthropizations and neganthropizations. Within noetic locality, neganthropic *différance* arises through

exosomatization, which deviates from and defers not only the law of entropy but also the law of anthropy. This deviation mitigates the toxicity inherent in the pharmacological condition, thereby structuring and ordering locality within the broader framework of universal becoming, yet counter to its current.⁴

Neganthropy, when considered through the lens of organological perspective, delineates the intricate interplay between individual, collective, and technical spheres of existence. This interplay necessitates a form of reasoning and action that transcends conventional scientific paradigms, embracing performative and incomplete dimensions that align with the transductive processes of individuation. Stiegler conceptualizes the reorganization and transformation of humanity under the influence of technological evolution through the lens of a general organology. In the ek-sistent individuation process of humans, three interrelated organ systems are invariably implicated, co-individuating and co-evolving in a dynamic transductive relationship. This relationship implies that these systems, psychic or psychosomatic organs, social organizations, and technical organs, derive their identities and functions through their mutual articulation and interdependence. Thus, their existence and essence are contingent upon their interactions and connections with one another (Lemmens 18). The integration of technical and psychic dimensions underscores the necessity for a holistic approach that considers the inherent singularity and improbability of transformative events. The implications of such a perspective are profound, extending beyond the mere theoretical constructs to practical applications in addressing the existential threats posed by the Anthropocene. The convergence of systemic limits necessitates a reevaluation of the economic and educational frameworks that govern human and technical evolution. By recognizing the performative and incomplete nature of concrescence, it becomes possible to foster environments that support the transformative potential of neganthropic différance. Neganthropy challenges traditional dichotomies between nature and technology, suggesting a symbiotic relationship wherein human agency and technical

⁴ Technicization refers to the way technologies become integrated and localized within specific cultural contexts, influencing and being influenced by human activities (Stiegler, *Technics and Time*). Exosomatization, on the other hand, involves the externalization of functions typically performed by biological organisms, leading to new forms of organization and differentiation that challenge traditional laws of entropy and anthropy. This framework suggests a dynamic interplay between human agency and technological mediation, offering pathways to mitigate the negative aspects of technological advancement while enhancing creative potential and cultural evolution (Stiegler, *Automatic Society*)

evolution coalesce to transcend entropic limitations. This perspective aligns with the broader philosophical discourse on the nature of knowledge, desire, and the human condition, positing that human consciousness is inherently dynamic and capable of continuous evolution through engagement with socio-cultural and technical milieus.

Neganthropocene represents a profound challenge: to develop a performative response commensurate with the systemic crises emerging from contemporary processes of concrecence. The looming threat of de-noetization underscores the urgency of this endeavor, invoking Whitehead's notion of the 'urge to knowledge'. This paradigm shift necessitates a reevaluation of knowledge as the supreme value, requiring substantial investment in processes of de-proletarianization and re-noetization. Crucially, these processes must not eschew calculative approaches but must steadfastly resist reducing knowledge to the mere calculable data favored by algorithmic governance, transhumanist ideology, and the data-driven economies of platform capitalism.⁵ In a neganthropological framework, truth is reconceived as the potential not only to stabilize and transindividuate forms of knowledge but also to create new bifurcatory pathways through exosomatization. Stiegler's invocation of the Neganthropocene calls us to embrace the necessity of the 'urge beyond', reminding us that such a bifurcation extends beyond the realms of adequate information, understanding, faculties of knowledge, or even the domains of desire, technical solutions, willpower, and hope. Fundamentally, it is a matter of care – an improbable form of courage. This courage is not necessarily manifested through overt revolutionary actions such as barricades or the seizure of governmental or corporate power. Instead, it embodies a form of revolutionary courage that is suspensive, interruptive, fateful, unavoidable, indeterminate, and calls for a conversion of our collective gaze, especially at this critical juncture. This revolutionary courage demands a profound rethinking of our engagement with the world. It requires us to measure up to the excessiveness of the revolutionary situation in which we find ourselves in the twenty-first century. This situation is characterized by a fundamental suspension and interruption of established norms and practices, compelling us to confront the

⁵ Drawing on Whitehead's 'urge to knowledge,' Stiegler argues for a paradigm shift that places the highest value on knowledge, advocating for substantial investments in de-proletarianization and re-noetization. These processes aim to reclaim and reconstitute the human capacity for critical thinking and creative engagement, countering the reductive tendencies of algorithmic governance, transhumanism, and platform capitalism, which tend to commodify and instrumentalize knowledge as mere data

indeterminacies and unavoidable realities of our time. It necessitates a transformative shift in our collective consciousness, a reorientation of our existential priorities, and an unwavering commitment to nurturing the conditions for sustainable and meaningful existence.

Integrating Heidegger's perspective with contemporary discussions on entropy and negentropy, particularly in the context of Stiegler's work, offers a richer understanding of our current technological epoch. Neganthropocene, characterized by a struggle against entropic tendencies through processes of re-noetization and care, intersects with Heidegger's concerns about the enframing (*Gestell*) nature of modern technology. Heidegger warns of a world where technology enframes beings as mere resources, stripping them of their inherent worth and leading to a calculative thinking that impoverishes our engagement with the world.⁶ Stiegler's emphasis on re-noetization can be seen as an effort to counteract this enframing, advocating for a technological engagement that enriches rather than depletes our noetic capacities. The philosophical synthesis prompts a reimagining of human agency and responsibility in the technological age. It urges a rethinking of our relationship with technology, not as passive consumers or mere operators but as active participants in the co-creation of our technological realities. Such a perspective emphasizes the ethical dimensions of technological development, calling for a mode of existence where technology serves to enhance human flourishing rather than undermine it. This necessitates a profound shift in our educational systems, economic structures, and cultural practices, fostering environments that prioritize creativity, critical thinking, and collective well-being. The reengagement with Heidegger and Derrida in the context of entropy and *différance* invites us to reconsider the temporal dimensions of existence. Heidegger's notion of temporality, particularly his distinction between authentic and inauthentic modes of being-toward-death, intersects with the entropic trajectories that characterize modern life. Inauthentic existence, marked by a forgetfulness of being and a preoccupation with the superficial, parallels the entropic dissolution of meaning in a hyper-technologized world. Authentic temporality, on the other hand, involves a resolute confrontation with finitude and a

⁶ Heidegger's exploration of technology delves into its ontological essence, distinguishing it from mere technological artifacts or concrete manifestations. He posits that technology fundamentally shapes our understanding of being, influencing how entities present themselves within our experiential reality (Heidegger, *The Question Concerning Technology*).

commitment to meaningful engagement with the world, offering a pathway towards negentropic forms of living that resist the homogenizing tendencies of technological enframing.

“We are noetic beings to the extent that we weave psychic secondary retentions on the framework of collective secondary retentions, constituted from psychic and collective preindividual funds: we individuate ourselves by exteriorizing the protentions contained within these retentional funds, hidden as ‘potentials’ that are ‘concretized’ and ‘actualized’ through being transindividuated” (Stiegler, *Neganthropocene* 34). As noetic beings, our existence is predicated on the intricate interplay of psychic and collective secondary retentions, both of which are anchored in preindividual psychic and collective funds. This dynamic process of individuation unfolds through the externalization of protentions latent within these retentional reserves. These potentials are concretized and actualized via transindividuation, a process that highlights the interdependence of individual and collective consciousness. From an organological standpoint, the arrangement of these psychic and collective retentions and protentions is facilitated by tertiary retentions, artificial retentional organs. The distinct characteristics of these tertiary retentions give rise to unique protentional possibilities, which, in turn, shape the transindividuation processes that metastabilize new attentional forms. These forms constitute the horizons of our expectations, wills, and desires within each new retentional epoch.⁷ Organological perspective also embodies a pharmacological dimension, as tertiary retentions simultaneously enable and obstruct individuation. “A new *pharmakon* carries new possibilities of psychic and collective individuation, and it thus requires ‘therapeutic’ prescriptions – in the form of magic, then religion, then politics – therapeutic prescriptions that constitute practices of care (sacrifice, ritual, worship, deliberation and debate), practices configured by the social systems within which attentional forms emerge” (Stiegler, *Neganthropocene* 34).

The singularity of the Anthropocene as an organological epoch resides in its self-referential nature, arising from its capacity to interrogate and recognize its own genesis. This epoch is

⁷ This conceptual framework draws from Bernard Stiegler's theories on the interrelation between technology, memory, and consciousness, particularly his notions of individuation, transindividuation, and tertiary retentions. Stiegler emphasizes the transformative impact of technological artifacts on psychic and collective processes, suggesting that these externalized memories (tertiary retentions) not only preserve past experiences but also actively shape future anticipations and social dynamics. (See Stiegler *For a New Critique of Political Economy*)

characterized by a profound awareness of its inherent contradictions and the imperative to transcend its detrimental trajectories. The Anthropocene, therefore, is marked by its negative protention, a forward-looking anticipation of disaster, and the necessity to overcome its self-destructive tendencies. The pressing question it poses is how to transition from the toxic implications of the Anthropocene to a new epoch, tentatively termed the Neganthropocene, envisaged as a restorative and care-centric era. The transition is predicated on a profound 'transvaluation' of value, echoing Marx's assertion that labor time must cease to be the measure of work or labor, and consequently, exchange value must no longer be the measure of use value. In this emergent scenario, the 'value of value' itself is redefined as neganthropy. The crucial task that remains is to effectuate this transition, moving decisively towards the Neganthropocene.

The epochal shift demands a thorough reevaluation of our technological engagement. The technological infrastructures that underpin contemporary society have become dual-edged swords, both enabling and impeding individuation. Therefore, a nuanced understanding of their dual role is imperative. We must cultivate a critical organology that recognizes technology's potential to enhance our noetic capacities while also mitigating its capacity to cause harm. The transition requires us to rethink the very foundations of value, work, and human existence. The neganthropological perspective offers a pathway to this reimagined future, where the focus shifts from mere survival to the flourishing of life. This perspective underscores the importance of care, not as a peripheral concern but as a central tenet of our collective endeavor. As we navigate this transition, the principles of neganthropy must guide our actions, ensuring that we create a world where technological advancement and human flourishing go hand in hand, ushering in a new era of sustainable and equitable development.

The Neganthropocene demands a rethinking of the role of digital technology in human individuation. The current digital landscape, characterized by the pervasive influence of algorithmic governmentality, often reduces human experience to mere data points, fostering a form of proletarianization that undermines genuine individuation. To counter this, we must foster digital environments that support the dynamic and complex processes of individuation, allowing for the emergence of new and diverse forms of psychic and collective existence. It requires a profound shift in how we conceive of and interact with digital technologies. Rather than seeing them merely as tools for efficiency and control, we must recognize their potential to facilitate

new forms of life and thought. This involves creating digital infrastructures that are open, participatory, and capable of supporting the rich and varied experiences that constitute human life. The current model of platform capitalism, which prioritizes profit over human flourishing, must be replaced with an economic system that values and promotes neganthropic investments. This entails investing in technologies and infrastructures that enhance life, foster individuation, and counteract the entropic forces that threaten human existence.

The profound transformation we are undergoing is distinguished by the rapidity of its effects and their global reach. “Big data” epitomizes this vast transformation, propelling globalized consumerism toward the eradication of all forms of knowledge, be it *savoir vivre* (knowledge of how to live), *savoir faire* (know-how), or *savoir conceptualiser* (knowledge of how to think).⁸ The Anthropocene, or more aptly, the Entropocene, is an era characterized by the massive generation of entropy. This phenomenon is intrinsically linked to the liquidation and automatization of knowledge, transforming it into a set of closed, entropic systems. Genuine knowledge, by contrast, is inherently an open system, perpetually capable of dis-automatization and the generation of negentropy.

Manual labor, which engenders negentropy and knowledge as Hegel explored through the concept of Knecht, was gradually supplanted in the nineteenth century by proletarianized labor. This form of labor, subjugated to machinery, is inherently entropic, not merely due to its reliance on fossil fuels, but also because of the standardization of operational sequences and the resultant erosion of knowledge among employees (See Thomas 158). “The Anthropocene is unsustainable: it is a massive and high-speed process of destruction operating on a planetary scale, and its current direction must be reversed” (Stiegler, *Neganthropocene* 52). The essential

⁸ Big data refers to the vast volumes of data generated at high velocity from a wide variety of sources, including social media, sensors, transactions, and more. This data, characterized by its sheer size and complexity, exceeds the capabilities of traditional data-processing tools and requires advanced methods for storage, analysis, and visualization. Big data has revolutionized numerous fields by enabling deeper insights and more accurate predictions through the application of machine learning algorithms and data analytics. In business, it drives decisions by uncovering patterns and trends that were previously undetectable, leading to enhanced efficiency and innovation. However, the rise of big data also raises significant concerns regarding privacy, security, and the ethical use of information. As companies and governments increasingly rely on big data, the potential for misuse and the erosion of individual privacy grow. Furthermore, the reliance on automated data processing and algorithmic decision-making can lead to biased outcomes if the underlying data or models are flawed. Thus, while big data holds the promise of transformative advancements, it also necessitates careful consideration of its broader societal implications.

challenge of the Anthropocene is thus the pursuit of the Neganthropocene, a quest to discover a path that extricates us from this colossal impasse. To reorganize the economy within the Neganthropocene, it is imperative to implement new criteria grounded in the capacity for dis-automatization. This task involves the revival of what Amartya Sen terms capabilities, which are central to human development and the individuation of humankind. These capabilities must be reanimated and fostered to counter the deleterious effects of hyper-proletarianization and systemic automatization. The Neganthropocene calls for a comprehensive reevaluation of our economic and social structures, aiming to cultivate and leverage human potential in ways that enhance negentropy and resist the entropic tendencies of the current paradigm. The reorganization of economic systems in the Neganthropocene should involve a shift from a focus on consumption and growth to one of sustainability and well-being. This includes rethinking metrics of economic success to encompass environmental health, social equity, and individual fulfillment. Policies and practices that support sustainable development, regenerative economies, and circular systems will be crucial in mitigating the entropic effects of the Anthropocene.

If there is to be a future (*avenir*) as opposed to merely a becoming (*devenir*), the value of tomorrow will hinge on the constitutive negentropy within the emergent economy of the Neganthropocene. The practical and functional differentiation between becoming and future must underpin the evaluative criteria of this economy, which is essential to overcoming the systemic entropy characteristic of the Anthropocene.⁹ “For such an economy, the practical and

⁹ In philosophical discourse, the terms *avenir* and *devenir* convey distinct temporal and existential concepts. *Avenir*, derived from the French verb *venir* (to come), translates to "future" and denotes an anticipated time or state yet to unfold. It embodies the potential and possibilities that lie ahead, suggesting a horizon of hope and aspiration. *Avenir* implies a directional, purposeful progression towards a more desirable state, often underpinned by deliberate action and conscious planning. Conversely, *devenir*, from the French verb *devenir* (to become), translates to "becoming." This term captures the processual nature of existence and change, emphasizing continuous transformation and evolution. In philosophical contexts, *devenir* highlights the flux and fluidity of being, where entities are perpetually in a state of becoming rather than reaching a fixed end. This concept is central to the works of philosophers like Heraclitus, who posited that change is the fundamental essence of the universe, and Deleuze, who explored the dynamics of becoming in relation to identity and difference. The practical and functional differentiation between *avenir* and *devenir* is crucial in evaluating the emergent economy of the Neganthropocene. This new epoch, characterized by the generation of negentropy (negative entropy) as opposed to the systemic entropy of the Anthropocene, hinges on fostering conditions that sustain and enhance life. *Avenir*, with its emphasis on a purposeful and directed future, aligns with the goals of the Neganthropocene, which seeks to cultivate an environment where potentialities are realized and systemic disorder is mitigated. In contrast, *devenir* represents the inherent dynamism and adaptability required to navigate and transform the present

functional differentiation between becoming and future must form its criteria of evaluation – only in so doing will it be possible to overcome the systemic entropy in which the Anthropocene consists” ((Stiegler, *Neganthropocene* 53). This economy necessitates a paradigmatic shift from anthropology to neganthropology, grounded in the framework of general organology and pharmacology. The *pharmakon*, understood as the artefact, is the precondition for hominization, representing an organogenesis of artefactual organs and organizations. However, it inherently generates both entropy and negentropy, posing a continual threat to hominization. The future economy, therefore, must prioritize the development and maintenance of negentropic systems. This involves fostering environments that promote creativity, innovation, and the continuous transformation of knowledge. Educational systems should emphasize critical thinking, adaptability, and the integration of diverse forms of knowledge, ensuring that individuals are equipped to navigate and contribute to a rapidly changing world. The shift from an entropic to a negentropic economy requires rethinking economic and social structures to prioritize sustainability, resilience, and well-being. This involves moving beyond traditional metrics of economic success, such as GDP, to incorporate measures of social and environmental health. Policies and practices should support regenerative economic models that enhance ecological balance and social equity.

An open, negentropic system, by its very nature, is fundamentally local and characterized by relative sustainability, or finitude. All that is negentropic—whether idiom, tool, institution, market, or desire, is inevitably subject to decay.

In an idiotext tendencies compose, tendencies that are highly pharmacological, that is, both entropic and negentropic, and, in this way, they constitute a dynamic wherein figures or motives emerge that are protentions, that is, differences that separate future from becoming and thereby allow this separation to be perpetuated. These are the motives and figures through which knowledge is woven as the circuits of transindividuation that form both within a generation and between the generations. (Stiegler, *Neganthropocene* 55)

Within an idiotext, tendencies emerge as both entropic and negentropic, composing a dynamic where figures or motives, termed protentions, differentiate future from becoming, perpetuating

conditions towards a more sustainable and vibrant future. This interplay between the two concepts underscores the importance of balancing continuity and change in the pursuit of a thriving, negentropic world.

this separation. These motives and figures are the mechanisms through which knowledge is woven into transindividuation circuits, forming within and between generations.

Reason, understood as a quasi-causal power to bifurcate and produce necessary order, aligns with Whitehead's definition of reason, which strives to make life better, counteracting life's entropic tendencies. Lévi-Strauss's perspective neglects that life, as negentropy, is always produced from entropy and leads back to it, as Freud and Blanchot discussed. Technical life amplifies negentropy, producing hyperbolic entropy and accelerating differentiations and indifferenciations. This detour of technical life embodies desire as the power to infinitize. Contrary to Lévi-Strauss's implication, humanity does not possess an inherently entropic essence that destroys a negentropic nature. Life, organic or artificial, intensifies entropic processes while locally producing negentropic order. Derrida's concept of *différance*, related to negentropy, involves economy and detour, forming retentions and protentions that transform through tertiary retentions.

Humans, as organological beings, are negentropic on two levels: organic (biological reproduction) and artificial (technical differentiation). Artifices, while ephemeral, can infinitize, projecting recipients into an infinite protention of an ever-coming promise, transcending undifferentiated becoming. Stiegler's emphasis on organological negentropy accelerates entropic processes, but this misunderstands my point. The politics of speed, in relation to thermodynamic physics and biology, involves knowing how human evolution, as described by Leroi-Gourhan, either increases or reduces entropy. The concept of idiotext aims to understand this dynamic as a problem, not just a question. In the exceptional and unsustainable Anthropocene, adopting the organological condition directed towards negentropy is crucial. This adoption can transform technological vectors' speed, crucial in a digital world where speed reaches two-thirds of light's velocity. Such a commitment to negentropy can disengage us from the Anthropocene, committing us to the Neganthropocene.¹⁰ The hyperbolic negentropy of organological becoming

¹⁰ The interplay of organological negentropy and the politics of speed is central to understanding the dynamics of human evolution in the context of thermodynamic physics and biology. Philosopher Bernard Stiegler's concept of organological negentropy explores how technological systems and human organs co-evolve to produce negentropy, or negative entropy, which fosters order and complexity. However, Stiegler's emphasis on negentropy can sometimes inadvertently accelerate entropic processes, misunderstanding the broader implications of speed in the digital age. The politics of speed, particularly in relation to thermodynamic physics and biology, examines how human evolution, as described by anthropologist André Leroi-Gourhan, either increases or reduces entropy. Leroi-

can transform acceleration into a future that defers and differs from becoming, as Derrida's *différance* suggests. This future, driven by desire as a factor of individuation and integration, can establish a negentropic and neganthropic trajectory.

“Organological beings are capable of purposefully organizing the negentropic and organological works that we are referring to here as neganthropic” (Stiegler, *Neganthropocene* 59). Organological beings, with their intrinsic capability to organize negentropic and organo-logical endeavors, embody what can be termed as neganthropic. The manner in which they orchestrate this dual organization, both psychic and social, determines whether they will expedite entropic release or defer it. This deferment, characterized by *différance*, aligns with Simondon's conceptualization of individuation as a process, echoing Whitehead's metaphysical frameworks. Stiegler's proposition embraces a neganthropological project construed as care, thus constituting an economy. This economic framework of care transcends the mere anthropological transformation of the world, moving beyond the Cartesian dictum of 'masters and possessors of nature.' Instead, it encapsulates a pharmacological epistemology, forming the foundation of neganthropology, which is pivotal for the advent of the Neganthropocene. This approach resonates with Canguilhem's perspective on the function of biology as a comprehension of life within technical life and Whitehead's view of reason within a speculative cosmology.

It is imperative to identify and elucidate the 'negative externalities' emanating from the 'neganthropy' inherent in anthropized milieus. However, this does not entail nullifying neganthropy. Rather, it involves transitioning from anthropization to

Gourhan's work highlights the role of technological and biological evolution in managing entropy. Within this framework, the concept of "idiotext" arises to address the dynamic of entropy as a problem rather than merely a question. The idiotext seeks to understand the multifaceted interactions between technology, biology, and entropy. In the exceptional and unsustainable era of the Anthropocene, characterized by significant human impact on the Earth's geology and ecosystems, adopting the organological condition aimed at generating negentropy becomes crucial. This adoption entails directing technological developments towards enhancing order and sustainability. In a digital world where the speed of information transmission approaches two-thirds of the speed of light, managing these technological vectors' speed is paramount. A commitment to negentropy involves transforming these technological vectors to reduce systemic entropy and foster a sustainable future. By focusing on negentropy, we can potentially disengage from the entropic tendencies of the Anthropocene and commit to the Neganthropocene. The Neganthropocene represents an epoch where human activities are geared towards reducing entropy, promoting sustainability, and fostering a more balanced and orderly relationship with the environment. This shift requires a profound rethinking of our technological practices and their impacts on both human and ecological systems, emphasizing the need for a sustainable and negentropic future.

neganthropization by fostering a positive pharmacology, one as ephemeral as life itself, perpetually carried forward by becoming. This care constitutes the essence of neganthropology, a dimension Lévi-Strauss overlooked by disregarding and intentionally censoring Leroi-Gourhan's insights. The neglect is rooted in Lévi-Straussian anthropology's foundational repression of organology, a concept emphasized by Leroi-Gourhan. Lévi-Strauss's framework fails to address the neganthropological questions that transcend conventional anthropology. This organological repression parallels Georges Bataille's notion of *dépense* (expenditure). According to Bataille, any discourse predicated on the fundamental value of 'usefulness' is inherently flawed and avoids addressing essential questions about human societies. Bataille contends there is no definitive criterion for determining what is useful to humanity. Every loss, in sanctifying and sacralizing, acknowledges a primordial deficiency predating any ontological state. This primordial default constitutes noetic intermittence, capable of speculative projection within a cosmic totality understood neganthropologically. This entails the knowledge and capability to initiate bifurcations within entropy (Stiegler, *Neganthropocene* 58-60).

Noetic bifurcation, or quasi-causal bifurcation, emerges from a cosmic potlatch, a process that annihilates numerous differences and orders while projecting substantial difference onto a different plane. This projection establishes another 'order of magnitude' amidst the *kosmos*'s inherent disorder. Without such projections from the unknown, the *kosmos* would degenerate into a universe devoid of singularity. Expenditure, although a social function, often leads to an agonistic and ostensibly antisocial act of separation. The affluent consume the impoverished's losses, generating categories of degradation and abjection that perpetuate slavery. This legacy of the sumptuary world has transmogrified in the modern era into the relegation of slavery to the proletariat. In this proletarianized context, the affluent's expenditure becomes sterile. Capitalist endeavors to assist the proletariat merely highlight their incapacity to fully engage in a sumptuary process. Consequently, the rich man's pleasure, derived from the poor man's loss, gradually dissipates, yielding an apathetic indifference.

Our question is the future – of work, of knowledge and of everything this entails and generates, that is, everything – insofar as it is not soluble into becoming. That it is not soluble means nothing other than the fact that it cannot be dissolved and (re)solved without this dissolution being also its disappearance, that is, ours. This possible dissolution in fact is what is not possible in law: we do not have the right to just accept this and submit to it. (Stiegler, *Neganthropocene* 61)

Lévi-Strauss fails to differentiate between, on one hand, that which remains radically indeterminate due to its constitutive improbability and inherent futurity, and, on the other, that which is statistically probable and thus determinable. Despite his familiarity with philosophical discourses asserting the supra-causality of freedom and will within and preceding nature, Lévi-Strauss ultimately perceives these as entropic forces accelerating worldly decay, devoid of any potential for generating new differences through deferral and differentiation. This perspective aligns with the nihilism presaged by Nietzsche decades prior. Stiegler rejects the Lévi-Straussian viewpoint, as it implies dissolving ourselves into becoming, thus negating any promise of a future for our descendants. Lévi-Strauss's reasoning hinges on a philosophical tradition that represses the neganthropological dimension of the noetic soul and the essence of human being, which is the transition from organic to organological existence. His anthropology, construed as entropology, neglects the negentropy produced by the technical form of life described by Canguilhem, typifying the noetic soul whose intermittent noesis generates human works.

Noetic endeavors, as intermittent fruits of *noesis*, induce bifurcations and singular differences within becoming, irreducible to deterministic laws and embodying quasi-causal freedom – encompassing intellectual, ethical, and aesthetic liberty. Schelling's insights are pertinent here. However, these noetic works also produce *pharmaka* that can turn against their creators, explaining how the Enlightenment could engender its opposite. The denial epitomizes the nihilism of those unable to conceive the nihilism wrought by absolutist computational capitalism – a capitalism bereft of mind and spirit, exacerbated by its severance from religious origins, the dissolution of belief into calculable trust, and the theoretical destruction inflicted by supercomputing and 'big data' correlationism. The spiritual void in capitalism leads to the total proletarianization of the intellect. Resisting this fact to reestablish a lawful state requires recognizing the pharmacological situation and prescribing therapeutic interventions to forge a new epoch of knowledge. Lévi-Strauss's discourse, fundamentally nihilistic and despairing, lacks lucidity and rationality. True rationality resists mere becoming, maintaining the unity of freedom's dimensions, which constitute the improbable horizon of all legitimate ends within a 'kingdom of ends' that is the plane of interpretation of 'consistences.' These consistences, as Whitehead notes, do not exist but are conceived as ideals, not realized in fact but in imagination, guiding the transition from fact to law and enabling the realization of negentropy through

novelty. Whitehead posits reason as an organ emphasizing novelty, providing the judgment by which ideas transition to purposes and subsequently to facts. This rational organ enables the realization of law as negentropy, guiding the self-discipline of history's originaive elements. This discipline, absent in Lévi-Strauss's entropology, is crucial.

The future, then, is predicated on fostering noetic and organological development, resisting nihilistic dissolution into becoming. This involves recognizing the intermittent and improbable nature of noetic works, their potential for generating difference, and their role in perpetuating negentropic processes. By embracing the rational organ's emphasis on novelty and self-discipline, we can navigate the transition from fact to law, ensuring the realization of a neganthropological future. The neganthropological perspective emphasizes the interplay between technical forms of life, noetic creativity, and the overarching necessity of fostering conditions conducive to negentropic development. This necessitates a reevaluation of philosophical traditions that have historically repressed these dimensions, advocating for a renewed focus on the noetic soul and its potential for generating new orders of magnitude within becoming.

The augmentation and enhancement of the human brain – undertaken by arranging so-called neurotechnological prosthetic pathways, such as cerebral implants, in combination with neurochemical pathways, so as to optimize neural performance and conceived in direct relation to these additional units – is a new stage in the history of noetic life and of the organological augmentation and transformation that has, ever since the beginning of hominization, occurred continuously. (Stiegler, *Neganthropocene* 76)

The brain, like many human organs, has always engaged in organological self-augmentation and transformation, a process intrinsic to noetic life as inherently technical, enabling the realization of dreams. Distinct from other organs, the brain's enhancement is achievable through internal processes of disorganization (defunctionalizations) and reorganization (refunctionalizations), interacting with external organs. These processes mirror what Freud described as defunctionalizations and refunctionalizations of the sensorimotor system. The true novelty of this organological transformation—this endosomatization of the exosomatic—lies in the integration of tertiary retentions (technical artefacts materializing knowledge, memory, and spatialized time), produced industrially and standardized, into the brain, an organ of primary and secondary retentions. The neuroindustry raises broader questions about managing exosomatization

according to market selection criteria, where exosomatization typifies the technical form of life emerging with hominization.

Noesis represents a specific instance of life's negentropic process, particularly in its inseparable relationship to exosomatization, forming a neganthropology that contends with the ambiguous nature of exosomatic artificial organs. These organs, as *pharmaka*, enable both new neganthropic forms and substantial entropy increases. Presently, the latter predominates, particularly regarding threats to biodiversity and the emergent concern with neurotechnology's impact on noodiversity. Investigating the stakes, politics, and economics of neuroindustry necessitates rational and reasonable inquiry into neuroindustrial reason and cerebral justice. This justice transcends degraded notions of human rights, instead emphasizing the coherence of reason. Such coherence underpins economic rationality, informing a new critique of political economy. This critique addresses the highly entropic state inaugurated by the Anthropocene, marked by generalized proletarianization, leading to the current biodiversity crisis, which also threatens noodiversity as the foundation of noesis and any potential neganthropological bifurcation. Any neuropolitics and neuroindustry must fundamentally aim to enhance conditions of rationality. This enhancement is contingent upon a broadly distributed cerebral organology, shaped by the interactions between noetic brains and the exosomatic systems that support them, thereby forming social organizations. These interactions govern the relationships between psychosomatic and artificial organs, all constituting the objects of general organology.

The critical question is whether these processes of psychic and collective individuation signify a new regime of individuation or merely represent new instances of psychic and collective individuation. If the former is true, this new regime of individuation would add a fourth possibility to Simondon's three described regimes: the physical individuation of entropic becoming (embodied in the crystal), the vital individuation of the living through negentropic organogenesis, and the psychic and social individuation occurring in anthropological exosomatization. If indeed a new regime of individuation is emerging, it suggests a wide diversity of potential arrangements, leading to new types of noo-organisms and mega-noo-organisms. These could range from the digital anthill, described in *Symbolic Misery* before the rise of the digital network, to more organically integrated technological entities, like the 'cyborgian' figures in "The Terminator." This imagination must stem from a noetic dream,

realizable through sufficient rationality and contingent political, economic, and ecological forces, which could alternatively devolve into a nightmare. Imagining these possibilities is essential to ensure that the new stage of exosomatization, culminating in a second, industrial endosomatization, leads to diverse territorialized forms. These diversifications could be linguistic, religious, architectural, culinary, and anthropophysical, organized via new organological arrangements, forming a fourth regime of individuation. This regime would create new forms of the noetic social body, territorialized but not necessarily sedentary, akin to the symbiotic relationship within human intestines, which host bacteria vital for survival. Thus, we must constitute an eco-neuro-geopolitics focused on the emergence of a new noesis, not driven by the struggle for life or existence but by the struggle for consistence after the fulfillment of nihilism, as Nietzsche foresaw. This struggle is against the entropic forces of market-driven exosomatization, which the transhumanist project embodies. Instead, it is a struggle for the generalized enhancement of noetic potential at all organic and organological levels, essential for new noetic organisms. These are the stakes of neganthropology, emphasizing noodiversity as the critical issue in the coming decades, necessitating a noopolitics to operate within the neuroindustry.¹¹

¹¹ The proposed regime envisions the creation of new forms of the noetic social body—structures of collective intelligence and consciousness—territorialized but not necessarily sedentary, resembling the symbiotic relationship found in human intestines, where bacteria crucial for survival coexist with their host. This analogy highlights the need for a dynamic, interconnected social body that supports and is supported by its constituent parts. In this context, the concept of eco-neuro-geopolitics emerges, advocating for the development of a new noesis (intellectual and intuitive understanding) driven not by the traditional struggle for life or existence but by the struggle for consistence. This notion aligns with Friedrich Nietzsche's vision of the post-nihilistic era, where humanity must seek new values and meanings after the "death of God" and the fulfillment of nihilism. The struggle for consistence involves resisting the entropic forces of market-driven exosomatization—the process by which human functions are increasingly outsourced to technological devices and systems, epitomized by the transhumanist project, which aims to enhance human capabilities through technology. Instead, the focus should be on the generalized enhancement of noetic potential across all organic and organological levels, fostering the development of new noetic organisms. This approach emphasizes the importance of neganthropology, a discipline that seeks to understand and counteract the entropic tendencies of contemporary society, particularly those driven by market forces and technological exosomatization. Neganthropology prioritizes noodiversity, the diversity of forms of knowledge and modes of thinking, as a critical issue for the coming decades. To address this, a noopolitics must be established to operate within the neuroindustry, guiding the development and application of neurotechnologies in ways that enhance noetic potential and support the emergence of new, dynamic forms of collective intelligence.

Tertiary retention, an organogenetic rather than anthropological phenomenon, engenders organological and pharmacological exosomatization, posing a neganthropological problem centered on the *pharmakon*, which encapsulates exosomatization. The core issue lies with noesis, which must always confront the potential for non-human constitution, a challenge acknowledged by Plato and Aristotle through their references to divinity. Noesis must perpetually envision and combat the specter of de-noetized humanity, an ever-imminent threat intensified today. The possibility of de-noetization is intrinsic to noesis, establishing the foundational challenge noesis must face—an affront that gave birth to philosophy through its resistance to sophistic stupidity, a theme Deleuze revisits from Nietzsche. Transhumanism, embodying nihilism's culmination, constitutes a de-noetization project, wherein noetic dis-interiorization (proletarianization) manifests through delegating noetic functions to analytical artifacts and optimized interfaces, as exemplified by advanced implants for fighter pilots. From this perspective, transhumanism epitomizes entropic extremity, the zenith of proletarianization. The noetization of life, an exteriorization process, did not originate with humanity and may not end with it. Nonetheless, noesis appears to commence with humanity's promise and risks extinction alongside humanity unless humankind acknowledges itself as the promise of Neganthropos, the architect of the Neganthropocene.

We enter the era of cybernetic governance, a period dominated by digital networks, conceived initially by Norbert Wiener around 1950 as a science of control. At its core, governance entails the act of steering, akin to controlling the rudder. A rudder, or *gouvernail*, functions as an organ within a larger artificial organ, such as a boat, enabling navigation and direction. Unlike a biological organism composed of interdependent organs, a boat does not self-reproduce and requires a human operator capable of using and directing it. This distinction underscores Aristotle's differentiation between biological organisms and artifacts like boats. Throughout history, boats evolved into ships with crews, where the person steering—the captain or governor, commands through the rudder, directing various functions of the ship, be it sails or engines. Plato's analogy in *The Republic* draws on the governance of a ship to illustrate principles of good governance for a city, viewing the city as a macrocosm of its citizens. The governance paradigm must transcend historical and ideological boundaries to address contemporary socio-economic and technological disruptions effectively. This necessitates a

philosophical inquiry into the evolving relationship between humans, technology, and governance—guided by critical reflections on historical precedents, ethical imperatives, and future possibilities in the context of planetary exorganisms.

The concept of governance extends beyond maritime operations. It encompasses the broader evolution of human societies characterized by exosomatization—the externalization of cognitive and physical functions through tools and technology. This transformation, described by Leroi-Gourhan, marks a departure from biological constraints towards artificial and technical organogenesis, influencing human history and prehistory alike. In the contemporary context, governance faces unprecedented challenges amidst rapid exosomatization, often termed the Anthropocene. This epoch denotes a profound disruption since 1993, manifesting as an accelerated technological revolution—particularly in cybernetics, automation, and artificial intelligence. These innovations redefine decision-making processes and socio-economic structures, posing significant implications for employment and global economies.

To navigate these complexities, governance must adapt beyond conventional frameworks, embracing regional reconfigurations and local pacts to foster contributory societies. This approach is exemplified in experimental initiatives like those in Plaine Commune, Paris, advocating for a contributory economy aligned with the emergent Neganthropocene—a concept reflecting a critical reevaluation of humanity's historical trajectory and future possibilities. Central to this discourse is the notion of exosomatization transforming the biosphere through technical individuation, as described by Heidegger and others. This transformation challenges traditional notions of governance, demanding a nuanced understanding of technological impacts on societal structures and environmental sustainability. The rise of smart cities epitomizes this evolution towards digital urbanity, emphasizing functional intelligence and the data economy. Yet, the transition from automatic to intelligent cities raises fundamental questions about urban governance's role in fostering sustainable development amidst global challenges and systemic uncertainties.

The earliest instances of externalizing mental contents emerged during the Upper Paleolithic era, followed by the establishment of sedentary settlements in the Neolithic period. This progression continued with the rise of great empires and the initial formations of urban areas, marking significant milestones in the development of archive, memory, and representation

functions. These historical antecedents hold implications for contemporary urbanization, viewed primarily through the lens of urban morphogenesis and exosomatization, encompassing diverse exosomatic exorganisms such as malls or specific functional architectures. Urban concentrations are also intricately regulated by grammatization processes, originating from the Upper Paleolithic and evolving alongside various forms of writing and urbanization. This evolution encompasses the development of grammars within specific urban contexts, eventually culminating in digital writing practices of the nineteenth and twentieth centuries (Derrida, 1967).

In the twenty-first century, capitalism has evolved in a manner that starkly validates Marx's hypotheses articulated in the *Grundrisse* concerning (1) automation, (2) the transformation of knowledge within the economy, and (3) corresponding shifts in the concept of value. Marx's earlier conceptual framework lacked definitive terms to comprehensively analyze these developments until the advent of contemporary technological and informational transformations embedded within today's fixed capital structures. Firstly, capitalism embodies an epistēmē, manifested in the fixed capital of a reticulated production apparatus. This epistēmē integrates diverse functions—from calculation and statistics to simulation and logistics—underpinning a hegemonic reconfiguration of societal instruments and operations. Information, operationalized through computational technologies, acts as the linchpin ('allagmatic' operator) of this epistēmē, assimilating all exchanges within social and psychic life into market calculations. This computational framework, rooted in a cognitivist paradigm, perpetuates generalized proletarianization—a pervasive process reducing individuals and their functions to automated components.

Despite its prominence, the cognitivist epistēmē paradoxically engenders an anti-epistēmē by dissolving knowledge into calculative processes, epitomizing an era of 'post-truth' and nihilism. This absolute non-knowledge, ingrained in fixed capital, correlates with entropy, necessitating a critical reassessment informed by a revised Hegelian dialectic—an approach advocating for a 'transvaluation' akin to a pharmacological critique. This epoch coincides with the Anthropocene's trajectory, now approaching limits due to its disruptive acceleration, thereby revealing itself as an Entropocene. The rise of algorithms supplants traditional knowledge with competencies adaptable to systemic tasks, further catalyzing the automation of fixed capital and precipitating the decline of traditional employment structures. Creative destruction, a hallmark

of this era, erodes established forms of knowledge essential for sustaining life's technical aspects. This erosion not only accelerates entropy within technical systems but also disrupts social frameworks and their attendant forms of care and knowledge cultivation.

The Entropocene thus denotes a critical phase in the Anthropocene's trajectory, characterized by the systemic short-circuiting of social systems and deliberative processes essential for knowledge and care provisioning. In this existential context, capitalism confronts inherent contradictions and entropic tensions amplified by its computational evolution, culminating in various social regressions globally. To transcend this entropic impasse, a decisive leap is imperative towards what is termed the Neganthropocene—an epoch requiring a fundamental reconfiguration of *epistēmē* and *tekhnē* relations. This necessitates an ontological reevaluation of industrial technology, transforming fixed capital into informational and computational structures aligned with shareholder profitability imperatives. Central to this critique is a reevaluation of information theory, challenging its reductionist stance on knowledge as calculable signals. Knowledge, construed as a generator of improbable bifurcations, remains indispensable within a universe conceived as an ongoing process fostering localities that defer entropy's ascent. The producer, in this context, extends beyond traditional definitions to encompass exosomatic beings producing artefacts that engender both negentropic potentials and entropic risks. This nuanced perspective calls for a neganthropology—a discipline rethinking entropy, negentropy, and anti-entropy from an exosomatic vantage point. Overcoming computational capitalism's anthropic tendencies necessitates reconstituting an *epistēmē* capable of fostering new forms of knowledge inherent to neganthropology. This entails critiquing and reimagining data and network architectures to advance organological innovations conducive to mitigating anthropic inclinations while amplifying neganthropological potentialities.

The recent advancements in probabilistic mathematics applied to the data economy have facilitated the emergence of what is now termed neo-computationalist cognitivism. This paradigm shift is exemplified by the development of reticulated artificial intelligence, which I will scrutinize through the lens of artificial stupidity at the Pompidou Centre in December. This concept builds upon Alvesson and Spicer's notion of 'functional stupidity,' characterizing the prevailing condition within cognitive capitalism. Artificial automated stupidity represents the culmination of computational capitalism, characterized by thorough algorithmic and reticulated

processes. Within this framework, the imposition of 'post-truth' signifies a generalized de-noetization—an unfolding eschatology steeped in the consequences of widespread proletarianization. This epoch has recently been dubbed the Trumpocene in media discourse, highlighting its contemporary sociopolitical manifestations (Stiegler, *Neganthropocene* 143).

Recent developments in the realm of computational and informational capitalism, termed cognitive capitalism by Antonio Negri and others, represent a pivotal evolution shaped by the digital transformation of hyperindustrial society. This digital metamorphosis marks the latest phase in a process of grammatization that demands meticulous examination. The advent of generalized digitalization, catalyzed notably by the inception of the World Wide Web in 1993, has established what Simondon identified as an associated milieu. There are contributory practices initiated as early as 1983 with the emergence of 'free software' in the context of the internet. These practices disrupt the traditional opposition between design, production, and consumption inherent in industrial economies, thus fostering a form of de-proletarianization. Concepts such as 'bottom-up' innovation and 'open innovation' emerge, ushering in new forms of 'living labor' and positive externalities such as wikis and the social web. These developments occur outside the traditional framework of production analyzed by Marx and Engels. On the other hand, the technogeographic associated milieu demands functional integration of all human resources, leading to an extreme and pervasive proletarianization. This process reduces all activities to information chains amenable to algorithmic treatment at immense speeds, globally facilitated by intensive computing, machine learning, and reticulated artificial intelligence. This phenomenon represents a stark inversion of the contributory practices mentioned earlier, resembling Marx's description in the unpublished sixth chapter of *Capital* (1863–66), where 'contributor' might replace 'worker':

The inversion of relations, characterized by primary and secondary retentions and protentions versus tertiary retentions and protentions, mirrors the effects of a new *pharmakon*. The organization of fixed capital has grown more complex and opaque, as significant portions have been 'privatized' through consumer items like smartphones. This restructuring on a global scale in the Entropocene era aligns with a biospherical infrastructure, often referred to as soft or fluid capital. To transcend this Entropocene phase, a detailed analysis of the pharmacological nature of fixed capital is imperative. This capital has become highly adaptable and malleable,

characterized by its hypercentralization via cloud computing and its widespread distribution through exosomatic organs like smartphones. The concept of the *pharmakon*, originating in ancient Greek philosophy, underscores the paradox of proletarianization as disindividuation. Knowledge necessitates exteriorization and spatialization through what Derrida termed *différance*—a process integral to noetic flows composed of primary and secondary retentions and protentions. For interiorization to occur, Hegel posited two 'moments': apprenticeship or learning, and noesis or the initiation of new cognitive processes. This interiorization forms a circuit of transindividuation, essential for understanding contemporary economic transformations and their impact on societal structures. Capitalism's viability, especially in its industrial form, hinges on its ability to progressively control economic functions—design, production, logistics, and consumption—through computational technologies. This control is enabled by a protean grammatization process relying on hypomnesic tertiary retentions of literal, mechanical, analogue, and digital forms. Marx's insights in *The Communist Manifesto* and the *Grundrisse* illuminate the path to understanding the consequences of automation and fixed capital's structural dynamics. They anticipate a crisis that only a revolution in labor relations could resolve, paving the way for discussions on exosomatization and neganthropology as essential for moving beyond the Entropocene.

Cognitive capitalism (Boutang 2011, Fumagalli and Lucarelli 2008) embodies these dual realities: On one hand, digital tertiary retention as the *epistēmē* of capital and an anti-*epistēmē* due to its role in hyper-control and generalized proletarianization, undermining knowledge. On the other hand, as a *pharmakon* with the potential to invert this state through establishing new economic laws that revalorize work and value. The relationship between individuals and the means of production, whether material or immaterial, profoundly shapes the technical and political aspects of class composition. This dynamic elucidates the concept's role in understanding specific historical manifestations of the capitalist-labor antagonism. Through this lens, the re-appropriation of cognitive dimensions by labor becomes pivotal in explaining the resurgence of tensions within production's social organization post-Fordism. The crisis of Fordism marks a shift where social cooperation in labor increasingly operates autonomously from traditional capitalist functions of organizing and controlling production. This transformation underscores a broader trend where the productive process evolves beyond

previous frameworks, reflecting a reconfiguration of power dynamics and the emergence of new forms of class struggle. The evolving landscape highlights labor's capacity to assert influence over the cognitive aspects of production, thus reshaping the socio-economic terrain and challenging established hierarchies within capitalist structures.

In contemporary discourse, the concept of cognitive capitalism, advanced notably by Negri and others, signifies a transformative phase within hyperindustrial society, driven by digitalization and computational technologies. This paradigm shift marks a departure from traditional industrial economies, characterized by a dual movement: on one hand, contributory practices disrupting conventional production-consumption dichotomies, and on the other, a pervasive proletarianization facilitated by digital and technological integration, epitomized by intensive computing and artificial intelligence. Negri (1991) critiques Marx's alignment of the proletariat with the *Knecht* (servant), arguing that the Knecht, through labor, generates knowledge surpassing the master (*Herrschaft*). This challenges conventional proletarian categorization, positing instead that it is the bourgeoisie, historically evolving from artisan backgrounds, that initiates revolutionary change. Marx's adherence to a dialectical understanding of *Herrschaft* und *Knechtschaft* (master and slave dialectic), Negri argues, confines Marxist theory within a limiting framework, insufficiently accounting for the complexities of modern technological transformations (See Macdonald 86ff.).¹²

Negri advances the concept of de-proletarianization, advocating for a transformative shift away from traditional notions of proletarian identity and labor relations. He proposes a reconceptualization wherein individuals transcend their roles as mere laborers, gaining autonomy and creativity in shaping their economic and social lives. Negri critiques the capitalist framework that reduces individuals to a commodified workforce, advocating instead for forms of collective resistance and self-organization that challenge hierarchical structures. By promoting de-proletarianization, Negri envisions a society where individuals assert agency over their labor and

¹² Negri's critique of Marx challenges the traditional alignment of the proletariat with the *Knecht* (servant) by proposing that labor empowers the Knecht to surpass the *Herrschaft* (master) in generating knowledge. This reinterpretation questions conventional proletarian categorizations and asserts that revolutionary potential lies not solely within the proletariat but also within an evolving bourgeoisie, historically rooted in artisanal backgrounds. Negri critiques Marx's dialectical framework of *Herrschaft* und *Knechtschaft* (master and slave dialectic), arguing that it inadequately addresses the complexities of contemporary technological advancements and their transformative potential within socio-economic structures.

lives, fostering conditions conducive to broader social transformation and emancipation from exploitative economic systems. Negri advocates for de-proletarianization through a contributory inversion, drawing from Deleuzian and Nietzschean concepts of quasi-causal appropriation. This approach seeks to invert the hypomnesic tertiary retentions—literal, mechanical, analogical, and digital—integral to contemporary digital infrastructure.¹³ Such inversion aims to reconstitute a new age of noesis, wherein cognitive processes are externalized and transformed through exosomatic technologies, aligning with Kantian and Whiteheadian perspectives on reason and knowledge formation. Practically, efforts towards de-proletarianization are exemplified in initiatives like those in Seine-Saint-Denis, emphasizing valorization of work beyond traditional Keynesian employment paradigms.¹⁴ Keynesian employment paradigms revolve around the belief that government intervention in the economy, particularly through fiscal policy, can mitigate unemployment and stabilize economic fluctuations. Rooted in the theories of John Maynard Keynes, these paradigms emphasize the role of aggregate demand in driving economic activity and employment levels. By advocating for active government spending during economic downturns to stimulate demand and create jobs, Keynesian economics seeks to achieve full employment and smooth economic cycles. It contrasts with classical economic theories that prioritize market mechanisms and minimal government intervention, positioning Keynesianism as a framework to address systemic unemployment and promote macroeconomic stability. These efforts reflect a critical reassessment of economic structures in light of Marx's early anticipation of evolving capitalist dynamics, particularly evident in his reflections on the implications of automation.

¹³ In advocating for de-proletarianization through contributory inversion, Negri draws upon Deleuzian and Nietzschean concepts to propose a reversal of the hypomnesic tertiary retentions inherent in contemporary digital infrastructure—namely, the literal, mechanical, analogical, and digital forms of memory. This approach seeks to redefine and subvert established modes of technological and economic organization, emphasizing a transformative inversion that liberates individuals from passive roles within capitalist frameworks. By appropriating quasi-causal mechanisms, Negri aims to empower individuals to assert agency over their labor and societal contributions, envisioning a path towards greater autonomy and collective empowerment.

¹⁴ The proposed inversion seeks to inaugurate an era characterized by heightened cognitive processes externalized and transfigured via exosomatic technologies, resonating with Kantian and Whiteheadian doctrines on rationality and the genesis of knowledge. In practical terms, endeavors towards de-proletarianization, as evidenced by initiatives in locales such as Seine-Saint-Denis, underscore a reevaluation of labor that transcends conventional Keynesian models of employment. These efforts emphasize the revalorization of labor, promoting a paradigm wherein work acquires significance beyond its economic utility, fostering socio-economic environments conducive to individual autonomy, creativity, and collective agency in the face of prevailing capitalist structures.

In his essay on “The Appropriation of Fixed Capital,” Negri posits an argument advocating the critical examination of technology within the context of social upheavals and as pivotal to envisioning alternatives to capitalism. He dismisses the deterministic outlook on technology and the pessimistic perspectives surrounding its implications. Negri draws upon Marx’s explication of technology in both the *Grundrisse* and *Capital*, employing a comparable lens to analyze digital technologies. To reconfigure the architectural foundations of contemporary digital capitalism, Negri proposes a reconstruction rooted in new epistemic and epistemological frameworks. This necessitates revisiting classical economic analyses by figures such as Adam Smith and Marx through the lens of Georgescu-Roegen’s “biophysical comprehension of economic process” (Cavalcanti 59).¹⁵ “The commonist expropriation of the expropriators entails the transformation of capitalist technologies into common technologies of commoning, commonly owned and controlled technologies that foster the common good” (Fuchs 218). The goal is to redefine value and invest in the Neganthropocene, an era characterized not just by negentropy but by neganthropy, where technologies mitigate anthropic effects and enhance knowledge generation. Negri underscores the imperative of overcoming metaphysical dichotomies inherent in dialectical thinking. He proposes an “affirmative reversal,” aligning with Nietzschean concepts, to transcend the oppositional logic of negative and positive. This philosophical stance challenges the nihilistic tendencies inherent in computational capitalism, which tends towards levelling and averaging effects that undermine neganthropic potentials essential for navigating beyond the Entropocene. The project of de-proletarianization advocates for a resurgence of knowledge production within a contributory economy. This approach acknowledges the provisional and pharmacological nature of knowledge, continually shaped by technological advancements and societal dynamics. It calls for a reconceptualization of fixed capital and the general intellect, critiquing Marx’s foundational work for its oversight of tertiary retentions crucial to understanding contemporary economic formation

¹⁵ Georgescu-Roegen’s ecological economics underscores the finite capacity of natural resources and critiques the unsustainability inherent in perpetual economic growth. He calls for a departure from conventional economic models that often neglect ecological realities, advocating instead for an integrative approach that embeds ecological principles within economic frameworks. Central to his discourse is the concept of entropy, which underscores the irreversible depletion of natural resources and underscores the critical need for ecological equilibrium to ensure long-term sustainability (See Weber 2019).

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