University of Linköping
Department of Philosophy
Spring Term 2025
Teacher: Johan Elfström

BIOCRACY

A Nietzschean Alignment: From Artificial Intelligence to Accelerated Independence

---

Hugues William Brenthone de Pingon

Handed in on August 15th, 2025
Student ID no.19960317-T852
Applied Ethics (Mphil)
Hugues.II.W.B.dePingon@gmail.com

ABSTRACT

This thesis proposes a Nietzschean alignment and transvaluation of artificial intelligence ethics through the novel framework of biocracy — aligning technological design with the strengthening of human biological capacities. Current dominant approaches in AI ethics emphasize fairness, accessibility, expediency or transhumanism, yet these frameworks fundamentally accelerate the biological degeneration of human cognition by directly insulating users from selective pressures. The erosion of those very capacities — capacities that made humans distinctive as a species and enabled the development of AI itself — will ultimately lead to human decline, subjugation or even extinction. Drawing from evolutionary theory and the philosophy of Nietzsche, I argue that AI should be designed as a complementary technology (eutech) — one that challenges users to strengthen their biological cognitive abilities and selects for them across generations — rather than as a competitive technology (dystech) that augments users with artificial cognitive abilities while diminishing and selecting against their biological ones. Through biocratic principles (adaptive challenge scaling, selective pressure implementation, and competence expiration), I advance a normative framework in which access to AI's augmenting capabilities is proportionally granted by the user's demonstrated biological competence. In this alignment, AI becomes a testing apparatus rather than a debilitating crutch — an evolutionary catalyst for human flourishing instead of decline, fostering not only survival but, above all, life-affirmation.

KEYWORDS:

AI Alignment; AI Ethics, Evolutionary Ethics, Nietzschean Ethics; Biocracy; Human Flourishing; Biological Degeneration.

It increasingly appears that humanity is
a biological bootloader for digital superintelligence.
(Musk, 2025)

TABLE OF CONTENTS

Man is a rope, tied between beast and overman — a rope over an abyss.
What is great in man is that he is a bridge and not an end.
(Nietzsche, 1883-1891/1995)

BIOCRACY

A Nietzschean Alignment: From Artificial Intelligence to Accelerated Independence

The emerging sense of competition between artificial intelligence and human biology demands nothing less than a radical reconceptualization of what we deem to be technological progress and our current moral frameworks dealing with it. Beyond mere tools for convenience, all instruments are tools of evolutionary pressure upon their users and as such this thesis confronts an uncomfortable reality: **All technologies insulating humanity from competitive struggle will accelerate their biological degeneration** (an organism's decline from higher to lesser active forms; Degenerate, 2021). Over the last 30 years, metanalyses uncovered the decline (-15%) of our deductive reasoning, inference making, argument evaluation and conclusion formation as we decreased our cognitive loads (-20%) through devices ranging from calculators to smartphones, replacing our routine mathematical, navigational, and memory tasks (George et al., 2024), while early trials on LLMs also indicate diminishing neural connectivity (Kosmyna et al., 2025).

Yet I reject the foregoing of such technology that such indications may entice, to rather **align AI's potential as a Nietzschean technology — as a multiplier of human biological flourishing**. We will instead establish an ethical imperative for AI systems designed **not to "*enhance*" us through *complacency*, but rather to *strengthen* our biological substrate through *hardship***, rewarding the greatest technological access to the greatest biological performances. Current approaches to AI ethics emphasizing fairness and accessibility (Memarian & Doleck, 2023; Hanna et al., 2024), expediency or transhumanism (Bostrom, 2005) threaten to institutionalize morbidity (defined as "unhealthiness" in Hernandez & Kim, 2022). They do so by their architecture fostering our technological enslavement or by (inadvertently) promoting our over-reliance to them, ultimately leading to their users' biological degeneration through generations. By 2027 we may already face "super[non]human" AI agents changing how we work and live (Kokotajlo et al., 2025), underscoring the urgency for biocratical ethics aiming at revaluing today's often morally oblivious (de Pingon, 2021) ethical frameworks. Such advocated morals are now threatened to be highly maladaptive under today's AI problematics. Instead, this proposed framework unites nature and technic at once by aligning technology to the strengthening and proportional rewarding of their users' trialed adaptive vigor (active bodily or mental strength or force; Merriam-Webster, 2025).

1. Introduction

Fairness ethics is often found mitigating selection bias by biasing algorithms toward equal outcomes across different groups, while Accessibility ethics aims at lowering the gate to increase the user base regardless of their physiological capacities and conditions. As such they inherently relax and fundamentally advocate for the relaxation of selective pressures via their enhancement of accessibility and equity (reducing incentives for the development and promotion of such skills, as seen through the overreliance on AI assistants). These ethical frameworks are competing against the rewarding of rights through the enforcement of trialed standards, and as such, these ethical frameworks are diametrically opposed to the mechanism of selection itself, which this thesis bases upon and throughout. This is at the core: any replacement of any human ability (i.e. a discriminating factor) by technology to provide fairer or more accessible opportunities (such as automating and biasing decision-making processes in AI-driven hiring systems) intrinsically stands against the ongoing biological development of such ability among a population. As such, they forgo measuring biological success (by selective pressures**),** for socioeconomical success (by equitable outcomes).

AI now stands itself as a selective pressure fundamentally altering the development of humans across future generations through the traits it does already replace and selects for (Crafts, 2021), highlighted by the use of AI assistance which accelerates skill decay among experts and skill development among learners — all without their user's awareness (Macnamara et al., 2024). These once-exclusive human abilities (processing vast datasets, identifying patterns, and executing tasks) are now to be partially or eventually wholly replaced by AI, therefore placing it as a pivotal element determining the evolutionary trajectory of its users. As such, AI functions, like many other tools, as a **cognitive artifact** (as coined by Norman in 1991) — an external tool extending human cognitive capacities to modify the environment in which they live through.

Yet the nature of this extension posits a critical dichotomy: cognitive artifacts may be **complementary** — *strengthening an individual's physiological abilities into greater independence by testing and stressing (developing) his skills*, as when using an abacus. Or they may be **competitive** — *augmenting an individual's physiological abilities into greater dependency by replacing or outsourcing (eroding) his skills*, as when using a calculator (Mueller & Oppenheimer, 2014). This distinction (as defined by Krakauer in 2016) frames the central inquiry of this thesis: **AI should strengthen us rather than degenerate us.**

The stakes of this inquiry are profound for they pit flourishing strength against degenerating morbidity. Complementary artifacts or *"Eutechs"* ("good" to the user's biological flourishing) are tools sharpening our mental or physical abilities — leave us more capable even in their absence, as training aids and teachers building lasting competence. Competitive artifacts or *"Dystechs"* ("bad" to the user's biological flourishing) are tools bestowing efficiency onto our mental or physical abilities — but at the cost of us becoming their appendages, debilitating crutches (making weak and infirm) through which our competence degenerates (Mueller & Oppenheimer, 2014).

The risk here is not merely one of convenience but of existential consequence: a trajectory toward biological degeneration, where the over-reliance on such technology undermines the very faculties of the people which were and will be necessary for the development of that said technology. Biological degeneration here medically refers to the physical and mental decline of an organism from a higher to a less functioning active form, a general lowering of effective power, vitality, or essential quality to an enfeebled and worsened kind or state (Degenerate, 2021). This biological degeneration is here discussed through the dysgenic selective pressures of dystechs which disfavor the reproduction of traits deemed to be characteristic to humans and essential not only for their survival but also their flourishing, that eutechs may be increasing instead.

Evidence suggests that excessive technology correlates with increased sedentary behavior, contributing to health deterioration (Owen et al., 2010), while offloading one's cognition to digital tools correlates with impaired memory and critical thinking (Firth et al., 2019). This was also previously studied in an ethical analysis highlighting how such external cognitive tools lead to their diminishment (Palermo, 2014). While such studies may be tentative of correlatives (not revealing a direct causation of biological degeneration) they at least uncover the selection against such mental traits in humans, that is, such traits becoming less relevant and attractive in populations engaging with them, lowering their proportions in future generations. The possibility of such mental atrophy through AIs (to which automation would be its technological mirror but toward physical weakening) represents a central threat to human flourishing. This situation demands an urgent ethical consideration to all of us who stand in disfavor against either

biological enslavement (**one's overreliance**: jailed by one's inabilities and dependencies and disabled when disconnected from technology) or **biological suicide** (**one's disappearance**: accepting one's inability to compete with technology and be replaced by non-organic entities we created). These are the ethical assumptions unto which this thesis grounds itself: that biological enslavement and biological suicide are to be avoided at all costs, in favor instead of a mighty affirmation of human growth against all competition or against the "passing of the flame" (of human cognition to AI).

In response to these two threats, an ethical imperative emerges out of it: AI should be developed and designed to strengthen (training — improving through suffering) its users rather than augmenting (giving — receiving without suffering) them, toward might and self-sufficiency rather than weakening and chaining them. **This imperative rejects both a passive acceptance (moral presentism) of and active resistance (neo-luddism) against technological progress**, insisting instead that AI must serve as a catalyst for human strengthening as explained below. It may be aligned with principles of beneficence and autonomy as it prioritizes technologies advancing human competitiveness, health and autonomy (Floridi & Cowls, 2019). Yet this is not merely about avoiding harm, but also about actively fortifying its uses departing from passive beneficence by demanding AI to strengthen human biological capacities. This stance champions AI as a means to sharpen our capacities throughout generations by ensuring we remain masters of our tools, but also that we remain competitive against those who would rather become their slaves for the power they provide. The ethical framework implicit here values and will explain why long-term might, strength, and survival guided toward a relentless affirmation of life — a perspective seeing the only desirable organic future as contingent on our ability to harness AI to increase ourselves biologically through time is a foremost answer to the problems exposed by AI today.

2. Argumentation

The purpose of this ethical framework is to establish a clear and pragmatic guide for the role AI could have in strengthening biological capacities of man — physical, mental, and existential — rather than his dependence on it. It prioritizes might, strength, survival, and life-affirmation, positioning AI as a tool to strengthen its users as a whole against decline and adversity from the potential threats AI may become. It is to build a case for eutechnic AIs (complementary artifacts) — philosophically Nietzschean technologies —

strengthening human capabilities through their active engagement and selecting the most capable by their access to greater features, rather than replacing their capabilities by fostering dependency or letting their selective processes unrestrained. This thesis will contrast historical examples, exploring AI's potential as an eutech, critiquing rival approaches, and emphasizing the competitive advantage of fostering and selecting biological independence in comparison to the expedient striving for short-term efficiency at all costs: accumulating cognitive debt over time and generations.

This approach is grounded in a normative commitment to human excellence and survival out of a ruthless application of evolutionary evidence. It ensures the survival not only of its own existence as a normative stance itself (otherwise selected against itself to die out in the pool of genetically discarded moral frameworks), but also a guided (life-affirming) one, beyond mere survival. As behavioral genetics underscores the heritability of cognitive and physical traits essential for human excellence and flourishing from personality to beliefs (Plomin et al., 2016), AI must select and strengthen, challenging genetic potential through rigorous challenge and selecting the best expression of vigor. It should not erode or select against this potential, diluting or degenerating these abilities within the population over generations. The discussion is grounded by careful attention to the limits of current scientific evidence by processing them through robust scientific theories, ensuring claims remain proportionate to the quality of available research.

2.1 *Defining Eutechs and Dystechs*

The foundation of this thesis rests on the contrast one may reveal between the abacus and the calculator — two tools which exemplify the divergence between complementary (eutechs) and competitive (dystechs) cognitive artifacts (Norman, 1991; Krakauer, 2016). Let's not see it as a pure dichotomy, for tools should rather be seen as having degrees of competitiveness ranging from one category to the other (Danaher, 2016).

The abacus is an ancient calculating device requiring the active mental effort and practice of its user. Research and history have demonstrated it to fit the definition of an eutech: its use enhances mathematical skills, as users develop a deeper understanding of and capacity for numerical relationships, operations, and calculations (Stigler, 1984). It does so by translating the abstraction of mathematics into visuospatial kinetic movements which can be replicated without the abacus itself after having learned it. It strengthened the user's mental abilities without supplanting them — as a teacher would by challenging his students.

The calculator may deliver speed and efficiency to its users, but does so by outsourcing their operations via automated computation. Analogous evidence of such can be found in how passive reliance on laptops is correlated to a reduction in retention and comprehension compared to active methods like handwriting (Mueller & Oppenheimer, 2014). Dystech naturally encourages a passive dependency toward it, but also forgoes the training of such abilities, and might even weaken them or their dependencies eventually. If not directly, it will in the long term, for it would select throughout generations those people without such abilities or their trainability of such ability (the ability to learn mathematics itself), which represents an invisible yet precious loss, and possibly a crucial one in relation to other abilities' dependencies.

The abacus does not compute by itself, it rather demands computation from its user. Each bead movement requires man's synaptic fire between his parietal working memory and his motor cortex, ultimately forging the necessary neural pathways through repeated learning, unlike a calculator which may instead atrophy them over time (Lima-Silva et al., 2021; Wang, 2020, George et al., 2024) even if they may allow to spend effort elsewhere. Similarly, today's machine learning systems also threaten cognitive erosion through their seductive and ease of completeness: ChatGPT's generations bypass our linguistic circuitry (Dergaa et al., 2024), AI's automated navigation may also weaken our own spatial reasoning as it was found by the use of GPS (Ishikawa et al., 2008; Dahmani & Bohbot, 2020), and Language Learning Models displace our mnemonic effort and abilities. These are not simple tools, but prosthetics — these are synthetic organs replacing our biological functions rather than training them. The ethical distinction here lies in the "friction" of their design. Complementary technologies like the abacus resist its user's mastery through a progressive complexity, forcing our own neural adaptation to them (Chen et al., 2021), while competitive technologies like calculators instead surrender our mastery through their operational simplification (Groves & Obregon, 2001).

This distinction between eutechs and dystechs will also serve as our fundamental lens to evaluate and distinguish AI's design and deployment itself. Here, this thesis asserts that AI should rather be made and used as a complementary tool, as an eutech as if emulating the abacus. That is, AI should be requiring our own active participation and selection to strengthen our abilities without creating dependence over the tool and reward us with greater access accordingly. At the same time, AI should not mimic the calculator's prosthetic tendencies to replace our effort with total automation and without any regard for performance either. Our proposal reveals a hidden path harmonizing at once both nature and technic rather than opposing them, reframing them as an indistinguishable whole working “hand-in-tool”. What only remains is the decision between a short-term strategy (dystechs providing speed and easiness) over a long-term one (eutechs providing strength and durability).

2.2 *Dangers of Dystechnic AI and Potentials of Eutechnic AI*

Let’s not forget the biological foreground that led us to the development of all these marvels of technology, for such dystechs precisely replace and erode the biological roots which were necessary for their own development. If AI ought to be aligned through encoded values and goals, this valuation is not only an argument promoting its users’ growth, survival, and flourishing, but also the AI’s own growth, survival, and flourishing itself — a co-dependent evolution which AI “itself” should therefore value.

But today’s AI exemplifies the degenerative tendencies toward morbidity among humans, as found in the most competitive dystechs one may envision or have observed. Its augmentations are not freeing humans’ cognitive ecology to engage in new, higher-order cognition as some may have in our past (Danaher, 2016), but will rather increasingly bind us through its misalignment. For example, cognitive offloading refers to a behavior where individuals rely on external tools for judgments they could make themselves by eliminating the need of an internal representation of information. It was defined by Risko & Gilbert in 2016 after exploring what mechanisms triggered them and what are the cognitive consequences of this behavior. They found correlations to a decline in decision-making skills by undermining their users’ vigilance (relying on automated aids) and eroding their cognitive autonomy in the long-term (decaying previously mastered abilities). Similarly, Kosmyn et al. (2025) showed the neural correlates of this behavioral offloading: electroencephalography (EEG) revealed a systematic scaling down of brain connectivity with the amount of external support (three groups respectively solving the tasks via their brain only, via a search engine, via an LLM). As such, the LLM users showed weaker neural connectivity and under-engagement of alpha networks (associated with internal attention and semantic processing during creative ideation) and beta networks (associated with active cognitive processing, focused attention, and sensorimotor integration). Even if these reviews and experimental studies on the long-term extent of this effect remain understudied, the selective processes induced by such

AI itself are enough to predict its degradations. Similarly, poor design determining what should be learned, in what order and how, lead AI to solve most for its users (as with students and teachers using Intelligent Tutoring Systems), taking away their agency over their learning and teaching capacities as the “AI deals with all of the[ir] cognitive demands” (Holmes et al., 2019). If improperly designed and as it is today, AI exacerbates sedentary, solitary, and offloading lifestyles and cognition (leading to atrophy) the opposite of that which created it. Excessive reliance on technology correlates with reduced physical activity as studied by Owen et al. in 2010 through sedentary behaviors occasioned by the technological workplace-and-domestic developments in transportation and communications. It also weakens cognitive function (verbal intelligence decline, grey-matter loss and attentional deficits) as brought up by Firth et al. in 2019, in how internet-related behaviors such as online gaming for weeks (in a randomized control trial) caused significant grey-matter loss, heavy media multi-taskers (chronically engaging in swift and simultaneous media streams) perform worse on task-switching and sustained-attention tests. Similarly reliance on online searching (through an internet search training week) reduced the brain-areas’ connectivity tied to long-term memory formation and retrieval. Less conclusive but interesting nonetheless for our case, Twenge & Campbell found in 2018 that screen time correlates to a reduced self-control and inability to finish tasks in U.S. adolescents (using them for more than 1 hour per day) while those using them for more than 7 hours per day were twice as likely to represent the same psychological profile. While these are correlations and might simply reveal a facet of our biological society, they might be a sign of a demographic change. Lastly, Sparrow et al. in 2011 showed people off-load the facts they expect to be able to look up later to the internet, remembering “where” rather than “what” — that is, chaining their biological capacity through an intermediary technology. This was confirmed and greatly expanded upon by Gong and Yang in 2024’s meta-analytical review where they observed similar trends while now comparing between devices, internet experience, regions, and more variables and one more decade of use.

These current findings sometime may only be correlational or indirectly related, but these are still directly indicating their selective processes against them. They expose that AI can — and currently does — sacrifice many traits that not only defined the valuation of man throughout cultures for the sake of expediency (short-term gains in efficiency), but also these same traits which enabled the creation of AI itself in the first place. This is a crucial understanding to retain in relation to these traits' strong heritability, as demonstrated through over 50 years of behavioral genetics research (Plomin et al., 2016; Polderman et al., 2015). By selecting against these traits, they will ultimately become less developed and less prevalent among us (Haworth et al., 2010; Okbay et al., 2016, Richerson & Boyd, 2005). Indeed, when looking throughout the history of technological transitions, we find a consistent pattern of skill erosion while masked under progress. This was shown throughout cognitive automations, where a degenerative feedback loop unfolds as automation leads to complacency, weakened competence maintenance, and skill loss, necessitating further reliance on technology (Rinta-Kahila et al., 2023):

1. **Tool Mastery**: Humans develop technologies requiring skill to operate (for example, navigation by sextant).
2. **Automation Creep**: Subsequent iterations of the tool reduce its operational friction (example: GPS replacing wayfinding (Ishikawa et al., 2008)).
3. **Skill Atrophy**: Biological or skill capacity diminishes through their lack of use (example: GPS reliance impairing spatial memory (Dahmani & Bohbot, 2020)).
4. **Dependency Lock-In**: Atrophied skills then necessitate permanent technological reliance to operate at previous levels (Ruginski et al., 2019).

This degeneration accelerates across cognitive domains through AI systems replacing many capacities such as synthetic memory (chatbots), synthetic reasoning (LLMs), and synthetic creativity (generative models). Each "convenience" strips a layer of biological necessity for these skills (Small et al., 2020). The ethical catastrophe emerges not from the technologies themselves as many may foresee, but from their design and deployment as degenerative crutches rather than training apparatuses. Similarly pharmacological cognitive enhancers, neural implants, and AI-assisted thinking all share the same fatal flaw: they fundamentally create dependency relationships weakening biological capacities over time (Bostrom & Sandberg, 2009).

On the other hand, AI also holds a tremendous potential to cultivate durable human strengths if designed as a eutechnic, complementary artifact. In education, AI can adapt itself to individual sociobiological learning styles — increasing their motivation to learn a subject by enacting through their interests, and by presenting the subject in the most adapted manner to his abilities. The Knowledge-Learning-Instruction framework found that adaptive instructional systems improve an individual's outcomes in problem-solving and critical thinking (Koedinger et al., 2012). And when they demand active participation — such as requiring users to solve problems independently — they lead to lasting competence (Holmes et al., 2019). Lastly, medical simulations (and other serious games) enhance practical skills (Lateef, 2010), even these may not yet be universally applicable yet. Similarly, AI can tailor its exercise programs to individual progress as it was explored on telehealth platforms (Tsiouris et al., 2018), even if they studied particular demographics in controlled settings.

These support the tentative claim that AI can — if not sharpening an individual's cognition itself — at least increase their learning efficiency by engaging users actively rather than delivering precomputed solutions, and complement human effort in building physical strength when designed to adapt rather than dictate. At least in the grand scheme and timeline of human development, AI can select for such traits within a given population to ensure a healthy maintenance of our biological competences. Understanding these possibilities, how can we operationalize AI as an evolutionary catalyst to strengthen humans? There have always been many design solutions to answer the same problem.

3. Ethical Framework

This work proposes to competitively address AI's problematics as seen above, through a radical perspectival shift on today's AI ethics — reconceptualizing technology's role in human development. This is grounded in synthesizing "*eugenerative*" principles (the physiological strengthening from lower active forms to beyond pre-established biological norms) with human evolutionary ecology (applying evolutionary theory to the study of humans via mathematical optimization). Then it is read through the distinguishing length of Norman's cognitive artifacts (1991) done by Krakauer (2016), but toward Nietzsche's life-affirming conclusions — his highest and deepest insight (Ansell-Pearson, 2007, p. xxvii) that was to him "most strictly confirmed and born out by truth and science" (as quoted in Kaufmann, 2013, p.727-729). Ultimately, all these form a newly conceived **"Biocratic" ethical framework**: embracing ethics as the harmonization of nature and technic toward increasing human life (higher active forms, power and vitality) — where technological empowerment is proportional to biological merit measured by physiological capacity.

3.1 *Beyond Fairness and Accessibility*

Current AI ethics ensuring equity through fairness metrics have ignored or disposed of crucial metrics even for their own survival: species resilience and excellence. Their moral justifications to equitable access, however appreciated, guarantee collective degeneration by forgoing care of evolutionary pressures. This might have been a possible tolerable viability (or moral necessity for the time), but it now deserves serious reconsideration under the light of our technological novelties and their physiological impacts. Forgoing this perspective would also disregard the burden imposed on future generations by lowering their own ability to thrive, which would also be counter-productive within any framework seeking to abolish suffering itself.

As we saw previously with preceding technologies acting on the same pathways of cognition, current and future AI technologies and ethics directly weaken their users or indirectly propagate demographic changes (through their enablement or population selection). These AI systems reduce our overall cognitive adaptability, vigilance, autonomy, agency, sociality, memory, self-control (Risko & Gilbert, 2016; Holmes et al., 2019; Owen et al. 2010; Firth et al., 2019; Twenge & Campbell, 2018; Sparrow et al. 2011; Gong & Yang, 2024), as well as normalizing risk aversion through their predictive safeguards (Ruginski et al., 2019), and rewarding user dependency through their addictive convenience features (Small et al., 2020). Today and throughout our future without a change in our ethical frameworks, AIs (will) actively reduce requirements for original thought or analytical rigor while fostering skill atrophy (George et al., 2024), leading to personal and generalized biological degeneration. In contrast to fairness and accessibility ethics, anthropocentric biocratical ethics prioritize the strengthening of human capabilities through competition and selective pressures, because our current alternatives (from total regulation to total deregulation) forgo the threats we have previously highlighted: the induced biological degeneracy by AIs themselves or the dominance of more pragmatic political entities using AIs for expediency (expanded upon in 4).

In contrast, this thesis envisions AIs as equivalent to drilling instructors designed for inducing adaptive stress rather than minimize hardship — mirroring how physical exercise strengthens muscles (Kramer & Erickson, 2007) — as well as select and reward greater technological access accordingly. Biological systems adapt when alternatives to adaptation are systematically removed. Biological growth (population expansion and trait complexity), whether cognitive or physical, occurs not through ease but through selective pressure — ensuring that only those who develop competency thrive. Such systems strengthening under stress clarify this model. True strengthening occurs only through technologies that force confrontation with unmodified reality, provide feedback loops punishing inadequate performance — "productive failure" (Shute & Ventura, 2013) — and withdraw support upon reaching competence thresholds. We see a parallel in medicine, where doctors such as surgeons must continually demonstrate ever-higher levels of skill (through board exams, peer reviews, and supervised practice) before they are allowed for more dangerous but useful practices. AI systems should do the same: the more users prove their competence the more they gain access to more powerful features. Drawing from this principle, our framework harnesses AI as a necessary selective filter to compete with a potential technological self-supremacy or at least those willingly degenerating themselves for short-term gains in efficiency. It rather amplifies than insulates humanity from selective forces, harmonizing technology with humanity through co-evolution.

Our framework replaces the degenerative ethics of accessibility with a strengthening (*eugenerative*) model. Here, AI actively identifies and eliminates compensatory mechanisms for biological shortcomings, creates graduated challenge environments rewarding the development of capability (Shute & Ventura, 2013), and imposes escalating performance thresholds for increased technology access. These mechanisms should create an evolutionary ratchet where genuine capability gains greater technological access. For example, a navigation AI might increasingly provide of their assistance according to the proven biological merit of its user, while inversely increasingly restraining the accesses to its features to those having to build greater competence.

3.2 *Biocratic Principles*

To operationalize these pillars, biological systems provide a model: they thrive (improve and expand themselves) under protocols of progressive overload — continuously escalating challenges matched to their current capabilities, mirroring natural selection's efficiency — protecting biological integrity through selective failure (Shute & Ventura, 2013). Accordingly, the framework requires AI systems to embed three specific mechanisms:

1. **Adaptive Challenge Scaling**: AI systems automatically increasing task complexity upon detecting its user's mastery (Shute et al., 2020), ensuring challenges scale with ability.
2. **Selective Pressure Implementation**: Algorithms reducing assistance in proportion to the user's demonstrated competence, pressuring users to adapt.
3. **Competence Expiration**: Time-based resets forcing its user's re-demonstration of their developed skills, preventing stagnation and overreliance, akin to nudge theory where it subtly guides user behavior toward desired outcomes (Hausman & Welch, 2010).

These requirements translate the design of eutechs into actionable features: Adaptive Challenge Scaling by amplifying risk when raising stakes as the user's mastery grows, Selective Pressure Implementation injects volatility when unpredictably reducing aid for the user, and Competence Expiration may reduce addiction through convenience via permanent testing. Under such mechanisms, an AI's "efficiency" could be then measured through three biological Key Performance Indicators (KPIs):

1. **Adaptive Stress Index (ASI)**: Measures the difference between user capability before/After AI exposure, either indicating strengthened biological capacity or degenerative dependency (Dergaa et al., 2024).
2. **Selective Pressure Coefficient (SPC)**: Quantifies how an AI system eliminates user inadequacies by associating their biometric feedback gradually with the accessibility to their features, escalating biological demands for their users.
3. **Obsolescence Velocity (OV)**: Rate at which the user fundamentally outgrows the AI's assistance.

These ethical imperative demands systems measuring success to do so not only by task-completion rates, but instead also by their obsolescence rates — how quickly users could discard such technological aids because of their newly developed capabilities. This approach must enshrine biological worth as proven through struggle granting rights of use accordingly. These proposed mechanisms would have to create evolutionary pressure where only genuine capability gains increased access to technological services, ensuring species resilience over artificial fairness. Through this framework, technological progress is reframed instead of autonomy, prioritizing the efficiency found in natural selection instead (Dahmani & Bohbot, 2020). The goal is not convenience, but humanity sharpened by adversity, capable of standing alone against an unmodified reality, so that through these mechanisms, AI transforms from a degenerative crutch to a training apparatus (Dehghani & Levin, 2024) — the whetstone against which humans' biological potential sharpens itself throughout generations.

This could be seen as a form of "biocracy" — a moral impediment for it — where biological systems (human users) would either pay for access to artificial competency through their metabolic outputs or be given ever-increasing rights to them accordingly — "biocratic principles". Modern AI threatens to bankrupt this evolutionary economy by offering cognition without any caloric cost and measurement of competence. A futuristic solution may be envisioned similarly to coupling AI with metabolism, where neural interface systems that tether AI access to mitochondrial output, language models requiring physical exertion for complex queries, or navigation AIs demanding increased heart rate variability for route optimization. Access to technology should be proportional to one's life-affirmation, might, survival capacity, and health — reflecting one's contribution to "civilizational" work against entropy, notably through demonstrated prosociality or even eusociality (capacity for the highest level of organization as observed by Foster & Ratnieks in 2005, notably through forms of compassion and cooperation) — which allowed for the development of fairness values themselves for example. This builds on our earlier points of eutechs as selective filters, where AI would here actually proportionally strengthen (and not augment) those of ever greater and measured biological worth through their struggle. By filtering access and allocating it accordingly we most efficiently dispense resources ensuring our competitiveness but also selecting ourselves away from biological degeneration throughout generations. This reinforces the genetic and societal hierarchy essential for human supremacy over digital dominance we will explore just below, aligning with the selective pressures outlined in the ethical framework, where the most vigorous and invigorated would earn the greatest amounts of access to AI's full power.

4. Debate and Discussion

This section aims to engage with the most crucial counterarguments to establish our proposed ethical framework for AI development. As explained earlier, our framework prioritizes the strengthening of human capabilities through AI as an eutech, challenging the most rival perspectives which would emphasize expedient efficacy at the expense of human vitality. We addressed the risks of physical, mental, and even in a sense moral degeneration in relation to the increasing competition with technology itself. Now a competitive biocratic model of AIs that would instead cultivate human resilience, independence, and power will be demonstrated. This discussion leverages scientific evidence to support our claims when relevant or possible, but also while acknowledging their own limitations, for our arguments to remain grounded and proportionate.

Nietzsche's life-affirmation, that is — to say yes in front of everything that strengthens, what accumulates strength, what justifies the feeling of vigor (1888/2009, 54) — the commitment to a person's thriving beyond mere survival, serves as our ultimate ethical standard for AI's alignment. AI must enhance its users' capacity to adapt and improve themselves not only to conquer their challenges but also to reach new heights. This framework employs a normative analysis, synthesizing ethical principles from AI literature (e.g., Floridi & Cowls, 2019), before adapting them to emphasize this human flourishing. Now the potential objections to the desirability and feasibility of such models will be confronted in the discussion below.

4.1 *Objections from Fairness and Accessibility Ethics*

This perspective might force us to reassess our prior moral systems as unfit to deal with the technological prowess of our time and its inevitable future. A reframing of our considerations at all tendencies aiming at a form of biosingularity (yearning to man's untapped biological potential) — through organic-based technologies (gene editing, gene erosion prevention, mutation load prevention, and increase in evolvability among others) — might be fundamental for humans. Such reframing would allow us not only to compete against digital and mechanical technologies, but even to improve them further. Fairness and accessibility ethics, instead, are intrinsically opposed to any such system that would openly stratify and increase users by their biological performance. Before responding it is instructive to state their most contradictory objections on their own terms:

1. **Difference Principle:** "Each person is to have an equal right to the most extensive total system of equal basic liberties compatible with a similar system of liberty for all" (Rawls, 1999, p. 266).

As such Rawls perceives the natural lottery as unjust because unearned traits would confer life-long advantages. But rewarding AI access on biological performance is more subtle, it will not induce a caste freezing existing inequalities — on the contrary, it will rather reveal the only caste more rigid than meritocracy to be the one enforced by atrophy under equal-access systems. In an AI-shaped world, biology becomes the only reliable measure of resilience (if not simply being synonymous) and any other standard such as an objection to natural lottery is becoming not only arbitrary but also morbid and morally condemnable for a society's thriving. By negating adaptability such a framework ensures artificial and morally-bounded castes, while biocratic principles ensure the steady flow of biological competence out of checks and balances with reality.

2. **Equal Basic Liberties:** "Social and economic inequalities are to be arranged so that they are to the greatest benefit of the least advantaged" (Rawls, 1999, p. 266).

Rawls argues inequalities may be justified if arranged to the greatest benefit of the least advantaged, otherwise exacerbating the disadvantages of those already worse off. Biocratic principles ensure that the least advantaged by society but best endowed by reality will have the greatest benefit in their rewarded access to higher AI technologies. They are not blunt instruments, but individualized training regimens adapted to their ways and with proportional rewarding, mimicking life itself by imposing selective pressures rather than insulating us from challenge leading to our biological degeneration. Survival and flourishing cannot subsidize under-performance but do allow access for all to be trialed and rewarded, rather than flattening requirements. That is, they prevent the development of a society where we would all become the least advantaged second-class citizens in the face of AI, as we abandoned aligning it under such biocratic principles out of moral stagnation.

3. **Capability Approach:** Sen (2009) defines capabilities as the real freedom to achieve those doings and beings that we 'have reason to value'.

Sen ascribes justice to the freedoms to achieve one has reason to value as they must be able to convert their resources into what they value. But even such freedoms, to be simply willed if not enacted, necessitate not only the preservation but also the flourishing of biological competency. Our conception of human dignity and freedoms will gradually evolve (as it has already and will continuously) in the face of novel moral struggle. Handed out static entitlement atrophying human cognition will be replaced by dignity rewarded for standing unassisted against one's biological shortcomings, similarly to Nietzsche's realizations on overcoming. That is, it is not only the bearing of hardship, but also the imposition of hardship itself upon us that is seen as the deepest source of our (self-)worth — the supreme triumph of life which through suffering bestows greatness upon our world.

> *What Belongs to Greatness.*—Who can attain to anything great if he does not feel the force and will in himself *to inflict* great pain? The ability to suffer is a small matter: in that line, weak women and even slaves often attain masterliness. But not to perish from internal distress and doubt when one inflicts great anguish and hears the cry of this anguish—that is great, that belongs to greatness. (Nietzsche 1882/1910, 325)

Only an AI aligned with our biology will secure both humanity's long-term and AI's flourishing itself (for its own sake), but more importantly, humanity's capacity to flourish.

As such, a fundamental reassessment and recategorization of what it means to be human is essential for our survival in this newly AI-shaped environment, which goes beyond the initial understanding of modern thinkers and their potential moral obliviousness, ("*unwittingly advocating for morals pertaining to a generally unquestioned consensus*", de Pingon, 2021). As such, their objections must be placed as one predominant moral strategy between post-WWII and pre-AI cultural contexts rather than universalized truths upon man and reality settled aways from the changing environment and its moral needs. The core of these objections dissolves as such moral routines — born in the post-modern industrial age yet pre-emptively questioned by Nietzsche — cannot competitively secure our biological future and affirm our flourishing under AI's novel landscape. Morality or moral routines have the intrinsic property of being an unproblematic acceptance obeyed unconsciously, which once sprouted forth as conscious solutions toward conflicted interests or rights (Swiestra & Rip, 2007), and as paraphrased:

> […] most of us will become cognizant of those moral routines solely when others disobey them, or either when those routines do not provide good enough answers for novel problem anymore, or at last when a moral dilemma develops through conflicts between those said routines, from which new technology might often be a causal link (de Pingon, 2021).

Today, AI's development isn't a problem requiring an assessment from our previous moral routines from which we derived today's ethics. Rather, it is making us cognizant of the failure of our current moral routines to answer our present problem: today's AI development uncovers our moral routine from their once self-evident attribute. Under the light of these new AI threats, our once passive moral routines are now being pressed on to be made aware of and questioned about, as AI now forces us to devise novel moral responses to answer its threats.

As such, the typical objections of discrimination, (social) discordance or dehumanization from fairness and accessibility ethics are first to be evaluated in their worth as objections through the lens of their moral bias developed in a context void of such problematics. Stripped away from their negative moral bias in their meaning, discrimination may eventually be seen, turned upside down, as a positive term such as "distinguishment" (establishing worthiness), similarly one can see discordance as "dynamism", and even dehumanization as "detachment". The point made here is not to justify their negative aspects in themselves, but rather that the use of these first terms makes any of their discussions sensitive to moral harassment. And if such proposed transvaluations induce that effect, this might also be pointed out as proof of one's previous obliviousness about one's morality, a morality now challenged by today's landscape into becoming an ethical debate. Keeping in mind these terminologies to play on an even moral field, the arguments might continue but now at least partially freed from such linguistic entanglements often stifling the discussion's purpose.

Following on this, by artificially equalizing AI outcomes without having to question the moral assumptions of such an ethical framework, Accessibility ethics may well be morally oblivious - unwittingly advocating for morals pertaining to a generally unquestioned consensus. This is problematic as through such unquestioned morals, they may charismatically persuade by an oblivious appeal to a non-questionable morality the disincentivizing of the necessary human excellence required for humans to be thriving in this new AI world, essentially dehumanizing it literally because of its obliviousness. When every user undistinguishably gorges on full AI assistance — out of fairness ethics' ambitions disregarding the users' capacity for effort and their actually expressed effort — mental atrophy will now spread unchecked. These ethical frameworks favor degenerative values in today's AI context, eroding humans' most uniquely-expressed and favored mental faculties (*as seen before: reducing cognitive adaptability, vigilance, autonomy, agency, sociality, memory, self-control, and risk-taking*). That is an actual, physical dehumanization of not only the individual, but the species as a whole and long-lasting.

Biocratic ethics do not aim at blocking accessibility and fairness ethics' most likely objections but rather seek to reframe their negativity for the essential needs the future awaiting us. That "distinguishment", "dynamism" and "detachment" are new moral foundations that may be sought for — but biocratic principles may also lead to a sense of fairness under certain lenses, of social harmony if they are aligned toward it, and of a definite humanization by its processes aimed at strengthening man in what defined him throughout sciences, eras and cultures. But nonetheless, such moral dictates and valuations are the luxury of the powerful, and the powerful will harness AI in one way or another to enforce their beliefs and pass them on through their demographic lineages and their cultural laws. Biocracy redefines Sen's highest-value freedom (2009) as the power to stand unassisted under the biological degeneration induced by AI's enslaving dependence, promoting their life-affirmation in such novel landscape by testing, renewing and expanding their abilities. This values the freedom to resist one's extinction and debilitation as a fundamental before all else, before Rawlsian liberty as a right to obliviously enforce one's unquestioned moral routines, as we rather need liberty as a biological imperative.

The possibilities currently found within humans from an individual's own capacity to the eusociality of their societies, but also potentially found in what they could become from the mechanisms found in biology and evolution — breeding and building not only the fittest but also most life-affirming individuals and societies (as these two goals might be different or even opposed) — are to be maximally exploited and upheld goals and virtues in order to compete against a world where AIs have little interest in parasitic slaves or reasons to be after the fact of their continuous debilitation. Luckily for any existence, man included, all have a bias for their own survival, however unpractical or inefficient their claims may be, as demonstrated by all living species today. As such, an eutechnic AI has an intrinsic appeal to us in comparison to a dystechnic one.

Moralities and ethical solutions that fail to abide by this life-or-death imperative will eventually die out — just as an individual or a species dies out through selection. Ultimately only those lucky and aligned with both strengthening and survival, directly or indirectly so (or even unwittingly so) and through their brain, brawn and chance, will pass on their genes and laws as per the laws discovered by behavioral genetics (Plomin et al., 2016). Heritable traits — from cognition to beliefs or even politics (in varying degrees) — will be selected in populations through their technologies, ensuring since the fire and still every day, that the fittest lineages thrive. But the fittest isn't the only aim of biocratic principle, it also seeks life-affirmation, for fitness alone has often little desirability when the environment itself selects for traits so alienating or simplifying from what made the preciousness and uniqueness of a given species. Earlier, we established that dystechs erode such defining traits of humans, diluting the population's capability for them over generations. Alternative moral solutions must compete in this new arena created by AI, and societies clinging to dystech-dependent moralities will weaken and ultimately disappear or become so estranged not be called human anymore, while those embracing eutechnic and biocratical principles will forge themselves further, by mastering both nature and technology as one.

4.2 *Objections from Expediency and Transhumanist Ethics*

Ethical failure lies not in technology itself, but in deployment philosophies that prioritize temporary expediency over permanent capability. The fundamental rival approach to biocracy in AI design is the prioritization of expediency over vitality (term used here to simplify the synthesis of strength, survival, and life-affirmation as a single term). Expediency strives to achieve their goals at any long-term costs, while Transhumanism in its greatest overreach seeks to replace man with a more efficient "being" altogether, transcending their biological limitations (passing on the flame on intelligence). Their application leads to a dangerous illusion of competence masking fundamental biological decline as shown through current AI ethics emphasizing fairness and equitable access (Floridi & Cowls, 2019; Mitchell et al. 2021), or a blindness to man's yet untapped biological potential, as exemplified by transhumanist ethics advocating for radical enhancement even if leading to full biological dependency, subjugation or extinction (Bostrom, 2005).

Fully automated AIs have a clear advantage in today's world; they cut costs immediately by replacing human labor, reducing expenses for companies (from writing reports to managing logistics in seconds rather than hours or days without lifting a finger). Today's AI is cheaper, faster, and easier, an undoubtfully powerful draw in a market ruled by quarterly profits. History backs this up as shortcuts often win initially, but as with the Roman Empire's or even the Agricultural Neolithic Revolution's reliance on slave labor to boost their efficiency, it eroded the people's capacities, setting the stage for decline, unable to support the system which gave birth to them. AI as a technology once again replacing our fundamental capacities for profits may lead us to a similar path, a new slavery free of the squandering of modern morality, seducing us with convenience once again, while still weakening us. AI must be our sparring partner, not our nursemaid.

But for now at least, biological systems do exhibit superior capabilities compared to AI (and robotics) across several domains, including self-healing, reproduction, energy efficiency, and emotional capacity, and may therefore still have a fundamental edge over them for some time (until they may not). To give some examples of the competitiveness of biological organisms: They are much more efficient in their self-healing capacities (via cellular regeneration, Eming et al., 2014) while technology still typically relies on external stimuli to start repairing itself if it does (such as heat or light, Islam et al., 2023). Following, biological systems evidently can reproduce but also adapt efficiently as explored through the mechanisms of natural selection (Futuyma, 2017) while AI still requires intervention from humans to provide for their updates and improvements (Bengio et al., 2021), not yet having the equivalent of evolutionary algorithms or meta-learning capabilities. This is a similar pattern that was found regarding energy efficiency, where the human brain only directly requires 20 watts of power (Attwell & Laughlin, 2001) through their biological systems, which is still today much less than the energy demands of AI systems which rely on more external power sources (Strubell et al., 2019). Finally, biological systems process emotions and what many call consciousness (Barrett, 2017) whereas AI can only simulate emotional responses without experiencing them (Poria et al., 2019) assuming such consciousness. These biological advantages highlight their adaptability and efficiency over our current technological systems — which may be reassessed when they are truly challenged — but as such should be taken into consideration when comparing both elements to one another.

Similarly, prioritizing human training over automation (mental or physical) reduces long-term reliance on technological maintenance and offers a higher return on investment (ROI) through a skilled, adaptable, and social workforce, instead of decreasing labor participation and straining economic systems (Acemoglu & Restrepo, 2018). Indeed, by 2026 AI-driven productivity gains are projected to increase equity markets by 30% even if AI agents would also be displacing tens of thousands of entry-level roles at the same time (Kokotajlo et al., 2025). While speculative about AI today (models depending on specific labor market conditions), human capital development typically mitigates the observed productivity paradox (implementation lags) of technological progress (Brynjolfsson et al., 2018). Economies over automatizing without upskilling their workforce may face stagnation and unrest, building a house of cards while dominating the sales charts.

This ethical standpoint assumes human progress lies in minimizing efforts toward a dominance in ugliness rather than maximizing inner potential capacity for a supremacy in beauty. This is a premise that risks producing a populace less capable of independent decision-making, a tactic of demoralization often used against one's enemy, but here applied to ourselves out of a careless lust, even if justified out of the eternal competition for power which ennobles the winners of life. Instead, another counterargument to the altar of expediency, is that the future is for those who manage to best use the grandeur of AI's capacities rather than passively or carelessly submit to it; a transvaluation of short-termness as the end-be-all of all valuation must be taken into consideration of its long-term consequences. Being limited from accessing a powerful technology might be frustrating, but understandable if done so for reasons leading to even greater supremacy against a valid threat — such capacity for impulse control as the building block of civilizational growth. An aesthetic argument is indeed also made here and the appeal to taste is estimated as an honest, fair and valid necessity — for what kind of man is desired to be begotten throughout our societies now that we hold the reins of our own evolution in much more impactful manners?

What would be this "civilization" or "progress" — words held dear to many — if its only ultimate outcomes and grandest productions in their latest stages, be hordes of sapless (without vigor) rotting (decaying in skills) slaves (physiologically dependent), crowning their ruling abstractions (AIs) which they cannot even fathom anymore? Would we truly see ourselves as the grand winners or rather, alike to the deep-sea male anglerfish which reduced itself as a living testicle — its absolute minimum to spread himself over time — and as Nietzsche sympathized, as a shameful laughingstock of incompetence coming out of a slow fallout we once called man, now dreadfully incapable to even assess themselves as such because of it?

> Whether it be hedonism, pessimism, utilitarianism, or eudaemonism, all those modes of thinking which measure the worth of things according to PLEASURE and PAIN, that is, according to accompanying circumstances and secondary considerations, are plausible modes of thought and naivetes, which every one conscious of CREATIVE powers and an artist's conscience will look down upon with scorn, though not without sympathy. Sympathy for you!—to be sure, that is not sympathy as you understand it: it is not sympathy for social "distress," for "society" with its sick and misfortuned, for the hereditarily vicious and defective

> who lie on the ground around us; still less is it sympathy for the grumbling, vexed, revolutionary slave-classes who strive after power—they call it "freedom." We see how MAN dwarfs himself, how YOU dwarf him! and there are moments when we view YOUR sympathy with an indescribable anguish, when we resist it,—when we regard your seriousness as more dangerous than any kind of levity. You want, if possible—and there is not a more foolish "if possible"—TO DO AWAY WITH SUFFERING; and we?—it really seems that WE would rather have it increased and made worse than it has ever been! Well-being, as you understand it—is certainly not a goal; it seems to us an END; a condition which at once renders man ludicrous and contemptible—and makes his destruction DESIRABLE! (Nietzsche, 1886/1909-1913)

Would such ethical frameworks seeking to abolish suffering be worthy enough in their assumptions and visions to outcompete the weights they imposed on their future generations by forgoing everyday principles of nature in exchange for their moral dreams?

> The discipline of suffering, of GREAT suffering—know ye not that it is only THIS discipline that has produced all the elevations of humanity hitherto? The tension of soul in misfortune which communicates to it its energy, its shuddering in view of rack and ruin, its inventiveness and bravery in undergoing, enduring, interpreting, and exploiting misfortune, and whatever depth, mystery, disguise, spirit, artifice, or greatness has been bestowed upon the soul—has it not been bestowed through suffering, through the discipline of great suffering? […] Do ye not understand what our REVERSE sympathy applies to, when it resists your sympathy as the worst of all pampering and enervation? (Nietzsche, 1886/1909-1913)

> To those human beings who are of any concern to me I wish suffering, desolation, sickness, ill-treatment, indignities — I wish that they should not remain unfamiliar with profound self-contempt, the torture of self-mistrust, the wretchedness of the vanquished: I have no pity for them, because I wish them the only thing that can prove today whether one is worth anything or not — that one endures. (Nietzsche, 1888/2009, 910)

Instead, let us align and design AI to be the forge of our vitality, than our comfortable deathbed.

5. Conclusion

We resolve together by drawing from Nietzsche's conclusions, while honoring his provocative and evocative rhetoric, to reflect the normative urgency of our human-driven biocratic framework grounded in our preceding analysis. We reimagined AI's ethical role while underscoring the existential stakes of fostering human strengthening over technological dependency.

As such, we presented a compelling case to reimagine AI's role in human development in relation to morally oblivious ethical frameworks prioritizing fairness and accessibility at the expense of human vitality. We now face a pivotal moment in history: AI's proliferation under today's ethical alignments rhymes with human degeneration, eroding our capabilities through dependency and atrophy. Nietzsche envisioned man as a rope over an abyss tied between beast and overman, we see this abyss as our risk of failing to evolve out of nihilism. Today, will we morally evolve and align AI toward life-affirmation for our own and AI's sake? Will we transvaluate our previous morals?

We have envisioned a new valuation, distinguishing eutechs from dystechs, forgoing false dichotomies dividing nature and technic. Aligning and designing AI to raise us against our own degeneration instead — finally seizing the reins of technology rather than being yoked by them out of lust for their immediate rewards and a blindness to man's untapped biological potential. This thesis argues that AI should not be a dystechnic cradle pampering us but an eutechnic forge provoking us through three biocratic principles: adaptive challenge scaling, selective pressure implementation reducing assistance as competence grows, and competence expiration ensuring skill persistence through re-demonstration. These principles merge nature and technic as eutechs, increasing our evolvability toward growth while enhancing us by earning the rights to their power proportionally to our biological capacity against itself.

The risks of current AI technologies — whether ethically restrained or not — are clear: biological degeneration through addictive dependency and capacity erosion. By adopting this new ethical framework outlined herein, biocratically-aligned AIs would guide humans toward their own flourishing and empowerment while also outcompeting alternatives — by fostering our individual growth and collective resilience while also smiling at any future technological progress and prowess rather than fearing them. This is a decree to flourish beyond mere survival — to rise through mastery as humans sovereign over machines rather than their "slaves" through dependence, now-extinct “genitors” through replacement, or “savages” through rejection. As we look at the stars, it is a survival and lifeful imperative to prioritize Artificial Intelligence systems toward human Accelerated Independence, especially affirming our commitment to a more capable — alive — humanity beyond subsistence, forged in the crucible of challenge and ready to reach beyond whichever future we create for ourselves.

References

1. Acemoglu, D., & Restrepo, P. (2018). The race between man and machine: Implications of technology for growth, factor shares, and employment. American Economic Review, 108(6), 1488-1542. https://doi.org/10.1257/aer.20160696
2. Ansell-Pearson, K. (2007). Foreword. In F. Nietzsche, *On the genealogy of morality* (C. Diethe, Trans., pp. xiii–xxxii). Cambridge University Press.
3. Attwell, D., & Laughlin, S. B. (2001). An energy budget for signaling in the grey matter of the brain. Journal of Cerebral Blood Flow & Metabolism, 21(10), 1133–1145. https://doi.org/10.1097/00004647-200110000-00001
4. Barrett, L. F. (2017). The theory of constructed emotion: An active inference account of interoception and categorization. Social Cognitive and Affective Neuroscience, 12(1), 1–23. https://doi.org/10.1093/scan/nsx060
5. Bengio, Y., Lecun, Y., & Hinton, G. (2021). Deep learning for AI. Communications of the ACM, 64(7), 58–65. https://doi.org/10.1145/3448250
6. Bostrom, N. (2005). Transhumanist values. Journal of Philosophical Research, 30(Supplement), 3-14. https://doi.org/10.5840/jpr_2005_26
7. Bostrom, N., & Sandberg, A. (2009). Cognitive enhancement: Methods, ethics, regulatory challenges. Science and Engineering Ethics, 15(3), 311–341. https://doi.org/10.1007/s11948-009-9142-5
8. Brynjolfsson, E., Rock, D., & Syverson, C. (2018). Artificial intelligence and the modern productivity paradox: A clash of expectations and statistics. NBER Working Paper No. 24001. https://doi.org/10.3386/w24001
9. Crafts, N. (2021). Artificial intelligence as a general-purpose technology: An historical perspective. Oxford Review of Economic Policy, 36(Supplement_1), S1-S17. https://doi.org/10.1093/oxrep/graa012
10. Dahmani, L., & Bohbot, V. (2020). Habitual use of GPS negatively impacts spatial memory during self-guided navigation. Scientific Reports, 10(1), 6310. https://doi.org/10.1038/s41598-020-62877-0
11. Danaher, J. (2016, September 18). *Competitive cognitive artifacts and the demise of humanity: A philosophical analysis*. Philosophical Disquisitions. https://philosophicaldisquisitions.blogspot.com/2016/09/competitive-cognitive-artifacts-and.html
12. Degenerate. (2021, March 11). In *Biology Online Dictionary*. Biology Online. Retrieved April 22, 2025, from https://www.biologyonline.com/dictionary/degenerate
13. Dehghani, N. & Levin, M. (2024). Bio-inspired AI: Integrating biological complexity into artificial intelligence. arXiv preprint arXiv:2411.15243. https://arxiv.org/html/2411.15243v1
14. de Pingon, H. W. B. (2021). Evaluation of morality as a factor of creativity in futures studies (Master's thesis). Available from eLABa (S 003, L02, L07).

15. Dergaa, I., Ben Saad, H., et al. (2024). From tools to threats: A reflection on the impact of artificial-intelligence chatbots on cognitive health. Frontiers in Psychology, 15, Article 1259845. https://doi.org/10.3389/fpsyg.2024.1259845

16. Eming, S. A., Martin, P., & Tomic-Canic, M. (2014). Wound repair and regeneration: Mechanisms, signaling, and translation. Science Translational Medicine, 6(265), 265sr6. https://doi.org/10.1126/scitranslmed.3009337

17. Firth, J., Torous, J., Stubbs, B., et al. (2019). The “online brain”: How the Internet may be changing our cognition. World Psychiatry, 18(2), 119-129. https://doi.org/10.1002/wps.20617

18. Floridi, L., & Cowls, J. (2019). A unified framework of five principles for AI in society. Harvard Data Science Review, 1(1). https://doi.org/10.1162/99608f92.8cd550d1

19. Foster, K. R., & Ratnieks, F. L. W. (2005). A new eusocial vertebrate? *Trends in Ecology & Evolution, 20*(7), 363–364. https://doi.org/10.1016/j.tree.2005.05.005

20. Futuyma, D. J. (2017). Evolutionary biology today and the call for an extended synthesis. Interface Focus, 7(5), 20160145. https://doi.org/10.1098/rsfs.2016.0145

21. George, A. S., Baskar, T., & Srikaanth, P. B. (2024). The erosion of cognitive skills in the technological age: How reliance on technology impacts critical thinking, problem-solving, and creativity. Partners Universal Innovative Research Publication, 2(3), 147-163. https://doi.org/10.5281/zenodo.11671150

22. Groves, S., & Obregon, D. (2001). Graphic calculators as thinking tools for senior secondary mathematics students. Australian Association for Research in Education Conference. https://www.aare.edu.au/data/publications/2001/gro01638.pdf

23. Gong, C., & Yang, Y. (2024). Google effects on memory: A meta-analytical review of the media effects of intensive Internet search behavior. *Frontiers in Public Health, 12*, Article 1332030. https://doi.org/10.3389/fpubh.2024.1332030

24. Hanna, M. G., Pantanowitz, L., Jackson, B., Palmer, O., Visweswaran, S., Pantanowitz, J., Deebajah, M., & Rashidi, H. H. (2024). Ethical and Bias Considerations in Artificial Intelligence/Machine Learning. Modern Pathology, 37(10), 100686. https://doi.org/10.1016/j.modpat.2024.100686

25. Hausman, D. M., & Welch, B. (2010). To nudge or not to nudge. Journal of Political Philosophy, 18(1), 123-136. 10.1111/j.1467-9760.2009.00351.x

26. Haworth, C. M. A., Wright, M. J., Luciano, M., Martin, N. G., de Geus, E. J. C., van Beijsterveldt, C. E. M., Bartels, M., Posthuma, D., Boomsma, D. I., Davis, O. S. P., Kovas, Y., Corley, R. P., DeFries, J. C., Hewitt, J. K., Olson, R. K., Rhea, S.-A., Wadsworth, S. J., Iacono, W. G., McGue, M., ... Plomin, R. (2010). The heritability of general cognitive ability increases linearly from childhood to young adulthood. Molecular Psychiatry, 15(11), 1112–1120. https://doi.org/10.1038/mp.2009.55

27. Hernandez, J. B. R., & Kim, P. Y. (2022, October 3). Epidemiology morbidity and mortality. In *StatPearls*. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK547668/

28. Holmes, W., Bialik, M., & Fadel, C. (2019). Artificial intelligence in education: Promises and implications for teaching and learning. Center for Curriculum Redesign.

29. Ishikawa, T., Fujiwara, H., Imai, O., & Okabe, A. (2008). Wayfinding with a GPS-based mobile navigation system: A comparison with maps and direct experience. Journal of Environmental Psychology, 28(1), 74–82. https://doi.org/10.1016/j.jenvp.2007.09.002

30. Islam, Md. A., Talukder, L., Al, Md. F., Sarker, S. K., Muyeen, S. M., Das, P., Hasan, Md. M., Das, S. K., Islam, Md. M., Islam, Md. R., Moyeen, S. I., Badal, F. R., Ahamed, Md. H., & Abhi, S. H. (2023). A review on self-healing featured Soft Robotics. Frontiers in Robotics and AI, 10. https://doi.org/10.3389/frobt.2023.1202584

31. Kaufmann, W. (2013). *Nietzsche: Philosopher, psychologist, Antichrist*. Princeton University Press.

32. Koedinger, K. R., Corbett, A. T., & Perfetti, C. (2012). The Knowledge-Learning-Instruction framework: Bridging the science-practice chasm to enhance robust student learning. Cognitive Science, 37(7), 1235-1278. https://doi.org/10.1111/j.1551-6709.2012.01245.x

33. Kokotajlo, D., Alexander, S., Larsen, T., Lifland, E., & Dean, R. (2025, April 3). *AI 2027: A scenario for superhuman AI through 2027* [White paper]. AI 2027. Retrieved from https://ai-2027.com/

34. Kosmyna, N., Hauptmann, E., Yuan, Y. T., Situ, J., Liao, X.-H., Beresnitzky, A. V., Braunstein, I., & Maes, P. (2025). Your brain on ChatGPT: Accumulation of cognitive debt when using an AI assistant for essay writing task. *arXiv*. https://doi.org/10.48550/arXiv.2506.08872

35. Kramer, A. F., & Erickson, K. I. (2007). Capitalizing on cortical plasticity: Influence of physical activity on cognition and brain function. Trends in Cognitive Sciences, 11(8), 342–348. https://doi.org/10.1016/j.tics.2007.06.009

36. Krakauer, D. (2016, September 5). Will A.I. harm us? Better to ask how we'll reckon with our hybrid nature. *Nautilus*. https://nautil.us/will-ai-harm-us-better-to-ask-how-well-reckon-with-our-hybrid-nature-236098/

37. Lateef, F. (2010). Simulation-based learning: Just like the real thing. Journal of Emergencies, Trauma, and Shock, 3(4), 348-352. https://doi.org/10.4103/0974-2700.70743

38. Lima-Silva, T., de Castro Barbosa, M., et al. (2021). Cognitive training using the abacus: A literature review study on the benefits for different age groups. Dementia & Neuropsychologia, 15(2), 159–168. https://doi.org/10.1590/1980-57642021dn15-020014

39. Macnamara, B. N., Berber, I., Cavusoglu, M. C., et al. (2024). Does using artificial intelligence assistance accelerate skill decay and hinder skill

development without performers' awareness? Cognitive Research: Principles and Implications, 9, 46. https://doi.org/10.1186/s41235-024-00572-8

40. Memarian, B., & Doleck, T. (2023). Fairness, Accountability, Transparency, and Ethics (FATE) in Artificial Intelligence (AI) and higher education: A systematic review. Computers and AI in Education, 5, 100152. https://doi.org/10.1016/j.caeai.2023.100152
41. Merriam-Webster. (2025, April 19). *Vigor*. In *Merriam-Webster.com dictionary*. Retrieved April 22, 2025, from https://www.merriam-webster.com/dictionary/vigor
42. Mitchell, S., Potash, E., Barocas, S., D'Amour, A., & Lum, K. (2021). Algorithmic fairness: Choices, assumptions, and definitions. Annual Review of Statistics and Its Application, 8, 141-163. https://doi.org/10.1146/annurev-statistics-042720-125902
43. Mueller, P. A., & Oppenheimer, D. M. (2014). The pen is mightier than the keyboard: Advantages of longhand over laptop note taking. Psychological Science, 25(6), 1159-1168. https://doi.org/10.1177/0956797614524581
44. Musk, E. [@elonmusk]. (2025, April 2). As I mentioned several years ago, it increasingly appears that humanity is a biological bootloader for digital superintelligence [Tweet]. X. https://x.com/elonmusk/status/1907335494607753668
45. Nietzsche, F. W. (1882/1910). *The joyful wisdom (La gaya scienza)* (T. Common, Trans.; P. V. Cohn & M. D. Petre, Poetry Trans.). T. N. Foulis. Project Gutenberg. https://www.gutenberg.org/files/52881/52881-h/52881-h.htm
46. Nietzsche, F. W. (1883-1891/1995). Thus spoke Zarathustra: A book for all and none (W. Kaufmann, Trans.). Modern Library.
47. Nietzsche, F. W. (1886/1909-1913). *Beyond good and evil* (H. Zimmern, Trans.). The Complete Works of Friedrich Nietzsche. Project Gutenberg. https://www.gutenberg.org/files/4363/4363-h/4363-h.htm
48. Nietzsche, F. W. (1887-1888/2009). *The will to power* [PDF]. Department of Philosophy, University of California, Santa Cruz. Retrieved March 02, 2025, from https://philosophy.ucsc.edu/news-events/colloquia-conferences/will_to_power-nietzsche.pdf
49. Norman, D. A. (1991). Cognitive artifacts. In J. M. Carroll (Ed.), *Designing interaction: Psychology at the human–computer interface* (pp. 17–38). Cambridge University Press. Retrieved from https://www.researchgate.net/publication/213799289_Cognitive_Artifacts
50. Okbay, A., Beauchamp, J. P., Fontana, M. A., Lee, J. J., Pers, T. H., Rietveld, C. A., Turley, P., Chen, G.-B., Emilsson, V., Meddens, S. F. W., Oskarsson, S., Pickrell, J. K., Thom, K., Timshel, P., de Vlaming, R., Abdellaoui, A., Ahluwalia, T. S., Bacelis, J., Baumbach, C., ... Benjamin, D. J. (2016). Genome-wide association study identifies 74 loci associated with educational attainment. Nature, 533(7604), 539–542. https://doi.org/10.1038/nature17671

51. Owen, N., Healy, G. N., Matthews, C. E., & Dunstan, D. W. (2010). Too much sitting: The population health science of sedentary behavior. Exercise and Sport Sciences Reviews, 38(3), 105-113. https://doi.org/10.1097/JES.0b013e3181e373a2

52. Palermos, S. O. (2014). Loops, constitution, and cognitive extension. Cognitive Systems Research, 27, 25-41. https://doi.org/10.1016/j.cogsys.2013.04.002

53. Plomin, R., DeFries, J. C., Knopik, V. S., & Neiderhiser, J. M. (2016). Top 10 replicated findings from behavioral genetics. Perspectives on Psychological Science, 11(1), 3-23. https://doi.org/10.1177/1745691615617439

54. Polderman, T. J. C., Benyamin, B., de Leeuw, C. A., Sullivan, P. F., van Bochoven, A., Visscher, P. M., & Posthuma, D. (2015). Meta-analysis of the heritability of human traits based on fifty years of twin studies. Nature Genetics, 47(7), 702–709. https://doi.org/10.1038/ng.3285

55. Poria, S., Majumder, N., Mihalcea, R., & Hovy, E. (2019). Emotion recognition in conversation: Research challenges, datasets, and recent advances. IEEE Access, 8, 100943–100959. https://doi.org/10.48550/arXiv.1905.02947

56. Rawls, J. (1999). *A theory of justice: Revised edition*. Cambridge, MA: Harvard University Press.

57. Richerson, P. J., & Boyd, R. (2005). Not by genes alone: How culture transformed human evolution. University of Chicago Press. https://press.uchicago.edu/ucp/books/book/chicago/N/bo3615170.html

58. Rinta-Kahila, T., Penttinen, E., Salovaara, A., Soliman, W., & Ruissalo, J. (2023). The vicious circles of skill erosion: A case study of cognitive automation. Journal of the Association for Information Systems, 24(5), 1378-1412. https://doi.org/10.17705/1jais.00829

59. Risko, E. F., & Gilbert, S. J. (2016). Cognitive offloading. Trends in Cognitive Sciences, 20(9), 676-688. https://doi.org/10.1016/j.tics.2016.07.002

60. Ruginski, I. T., Creem-Regehr, S. H., Stefanucci, J. K., & Cashdan, E. (2019). GPS use negatively affects environmental learning through spatial transformation abilities. Journal of Environmental Psychology, 64, 12–20. https://doi.org/10.1016/j.jenvp.2019.05.001

61. Sen, A. (2009). *The idea of justice*. London, UK: Allen Lane.

62. Shute, V. J., & Ventura, M. (2013). Stealth Assessment: Measuring and Supporting Learning in Video Games. Cambridge, MA: MIT Press. https://doi.org/10.7551/mitpress/9589.001.0001

63. Shute, V. J., Rahimi, S., Smith, G., Ke, F., Almond, R., Dai, C.-P., Kamikabeya, R., Liu, Z., Yang, X., & Sun, C. (2020). Maximizing learning without sacrificing the fun: stealth assessment, adaptivity, and learning supports in educational games. Journal of Computer Assisted Learning, 36(4), 485-499. https://doi.org/10.1111/jcal.12473

64. Small, G. W., Lee, J., Kaufman, A., et al. (2020). Brain health consequences of digital technology use. Dialogues in Clinical Neuroscience, 22(2), 179–187. https://doi.org/10.31887/DCNS.2020.22.2/gsmall

65. Sparrow, B., Liu, J., & Wegner, D. M. (2011). Google effects on memory: Cognitive consequences of having information at our fingertips. Science, 333(6043), 776-778. https://doi.org/10.1126/science.1207745

66. Stigler, J. W. (1984). "Mental abacus": The effect of abacus training on Chinese children's mental calculation. Cognitive Psychology, 16(2), 145-176. https://doi.org/10.1016/0010-0285(84)90006-9

67. Strubell, E., Ganesh, A., & McCallum, A. (2019). Energy and policy considerations for deep learning in NLP. arXiv preprint arXiv:1906.02243. https://doi.org/10.48550/arXiv.1906.02243

68. Swierstra, T., & Rip, A. (2007). Nano-ethics as NEST-ethics: Patterns of Moral Argumentation About New and Emerging Science and Technology. *NanoEthics*, *1*(1), 3-20. https://doi.org/10.1007/s11569-007-0005-8

69. Tsiouris, K. M., Gatsios, D., Tsakanikas, V. D., & Fotiadis, D. I. (2018). Designing interoperable telehealth platforms: Bridging IoT devices with cloud infrastructures. Enterprise Information Systems, 12(8-9), 1194-1213. https://doi.org/10.1080/17517575.2020.1759146

70. Twenge, J. M., & Campbell, W. K. (2018). Associations between screen time and lower psychological well-being among children and adolescents: Evidence from a population-based study. Preventive Medicine Reports, 12, 271-283. https://doi.org/10.1016/j.pmedr.2018.10.003

71. Wang, C. (2020). A review of the effects of abacus training on cognitive functions and neural systems in humans. Frontiers in Neuroscience, 14, Article 913. https://doi.org/10.3389/fnins.2020.00913