First Principles First

SCIENCE & IDEAS

The Illusion of Autonomy and General Intelligence: From an Economy of Artificial to Symbiotic Intelligence

LLMs are projections of our collective intelligence. The current thesis of AI as superintelligence lacks merit in science and serves a reactionary political economy.

Dr. John Henry Clippinger

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Part One

LLMs are projections of our collective intelligence. They marvelously structure and “parameterize” the complexities and vagaries of human expression and cognition. They do not understand. They have no self or intrinsic intention. They reflect the patterns of argument and expression of the documents and media they process. Their agency comes as a projection of our agency upon them. They appear to come to life with our prompts, miraculously summoning and organizing their myriad content to answer our questions and commands. As such, they mirror our collective strengths and weaknesses, our prejudices, our insights, and our pathologies. There is nothing inherently true or untrue about them. They are the “digital spore” of human communication, inquiry, conjecture, speculation, assertion, and expression, but not its subjects or progenitors.

Extreme Rationalism and Artificial Intelligence

Since LLMs appear to reason and converse, solve puzzles, and complex problem sets, we attribute a form of artificial intelligence to them. They are artifacts that are “intelligent” because they perform tasks that their creators deem “intelligent”. There is an unexamined assumption within the AI tech community that Superintelligence is a form of supersized rationality, the capacity to solve complex mathematical and logic problems, facility with formalisms, games, and puzzles, and recall of obscure facts and details. Not surprisingly, these are the skills most prized within the tech, gaming, crypto, and hacker communities.

A capacity for scoring high on tests of “rationality”, such as IQ, logic, and math tests, seems to give them an “objective measure” of their relative worth. Given that such skills are often associated with being “on the Spectrum”, many within the AI “nerd culture” experience themselves as exceptional, “gifted” outsiders. Their personality traits can be awkward and trying: literalism, dogmatism, arrogance, lack of empathy, and an obliviousness to social cues and nuance. Yet with the ascendancy of nerds to the heights of franchise-level software developers, influencers, investors, VCs, thought leaders, billionaires, and now political operatives, there is the belief that “bright makes Right”. And it has imbued some with a messianic calling that they are the arbiters and saviors of humanity and the planet.

> *Rationalism has become a kind of cult secular religion through such movements as Effective Altruism, the Center for Applied Rationality, LessWrong, and Neo-Monarchism, and other intentional communities espousing interplanetary species, transhumanism, the Singularity, immortality, accelerationism, and abundance.*

The Rationalists share a common heritage with the eugenics movements of the early 20th century, when IQ tests were first developed and the concept of a singular general intelligence was first promulgated. Combined

with Social Darwinism at the time, the concept of “survival of the fittest” was then seen as giving preference in breeding and power to the smartest, who were then considered to be primarily Northern Europeans. This translated into the neo-natalism movements of the Nazis in the 1930s, and more recently with Musk and the Republican Party.

Having equated intelligence with very specific, inheritable and measurable skills and seeing relentless competition as a principle of Nature, it is not surprising that the same culture that has given birth to Artificial Intelligence both fears and promotes its success. What if AI agents become smarter than us? Then would they not act like us, and eventually deceive, rule and eliminate us? That is the “doomer” scenario that seems to have wide acceptance.

The Science and Myth of Intelligence

Yet is that a scientific fact, or is it perhaps a projection of our own fears and failings? Do we want to optimize that kind of narrow intelligence and values? Is that a fact of Nature, an inevitable feature of increased “intelligence”? Or is it the result of a subgroup of former outliers trying to assert and preserve their control of the technology?

There is no scientific basis for equating a singular intelligence with a particular subgroup of neurodiversity. William James, a pioneer in modern psychology, described intelligence as the ability to reach the same goal by different means. Intelligence is inherently biological and is equated with being able to survive under conditions of uncertainty. In biology, intelligence is not the optimization of a single class of cognitive or somatic competencies, but rather the orchestrated selection of a coherent range of competencies to survive and reproduce.

The Rationalist notion of a hierarchy or a rank ordering of cognitive capacities or “rational choices” as indicative of intelligence is just flat wrong. It fails deductively, in the selection of evolutionary strategies that are maladaptive, and it fails inductively, in accounting for the nested and highly plastic dynamics of not just the brain, but cellular intelligence in general. Effective evolutionary strategies are not necessarily transitive, hence “rational”; I may choose A over B and B over C, and because I chose B, I would not choose A. Feedback loops and the dynamically changing semantic context of choices affect the preference functions and, hence, the efficacy of a strategy.

The Political Economy of Artificial Intelligence

The current debate over AI ethics and governance, superintelligence, and existential risks has conflated a specific and very limited definition of intelligence with the interests and competences of a neurological subgroup, the Rationalists. It has also conflated the notion of intelligence with a related economic and

political doctrine, Libertarianism. Given the Rationalists' belief in a hierarchy and meritocracy based on intelligence, it is not surprising that they believe in optimization and unregulated freedom to exercise their form of intelligence. This accounts for their belief in accelerationism and abundance.

> *This narrative echoes a Nietzschean view of superintelligence as the superman, who ignores boundaries, and bravely confronts and overcomes convention to achieve a higher, more "intelligent" order. Such a narrative is contemptuous of caution and consideration, as signs of a feminine weakness and wokeness.*

It extols the "manliness" of single-mindedness, aggression, and dominance. This is where the current conception of AI as a dominant superintelligence overlaps with a curious and contradictory political and cultural narrative of "decentralization" and "monarchism."

A Science-Based Alternative: Symbiotic Intelligence (SI)

To challenge the accelerationist and rationalist thesis of AI, is to invite dismissal by the AI barons as an anti-progress, anti-science, and anti-technology Luddite. The opposite is true. The current view of AI is not grounded in science but in a reactionary ideology masked as science and packaged as an inevitably dominant technology.

The counter perspective espoused here is grounded in verifiable and robust scientific refutations of a rationalist and reductionist interpretation of intelligence. They are based upon decades of research in evolutionary, synthetic, and computational biology, computational neuroscience, and information physics. Unlike "Artificial" Intelligence, "Symbiotic" Intelligence is not the result of an accident of its origins and its subsequent capture by a Rationalist cult of developers and investors. Rather, the notion of symbiosis as mutual information exchange and recombination into progressively more complex self-synchronizing structures is derived from decades of cross-disciplinary research into the origins of life and mind.

Lynn Margulis, a microbiologist, was the first to discover and scientifically demonstrate the prominent role of symbiosis and mutualism in evolution. Her research on "endosymbiosis" is fundamental to understanding the evolution of multicellular organisms. Initially, her findings were vigorously rejected by Neo-Darwinists such as Richard Dawkins. But subsequent research verified Lynn Margulis' discovery of the importance of endosymbiosis in the broadest evolutionary terms.

Symbiotic Intelligence, in contrast to Artificial Intelligence, acts to maintain and discover multi-scale homeostatic coherence and to minimize informational uncertainty within its metabolic limits as synchronized within an ecological niche. The ongoing and fertile transdisciplinary research and modeling of Karl Friston and his many colleagues, in conjunction with the groundbreaking discoveries of the transdisciplinary

biologist, Michael Levin, form the basis for the notion of Symbiotic Intelligence.

Life and Cognition Are Wrapped in a Markov Blanket

A Markov blanket is defined in formal terms the limits of independence for “living things” by identifying a minimum number of states—observer, internal, external, action, and latent—that are represented as nodes in a directed graph. The directionality of the graphic defines the minimum relationships for being an independent “living thing”.

Markov blankets are best understood in conjunction with the notion of Active Inference, a form of Bayesian belief generation based on the Free Energy Principle, which entails a living thing’s capacity to make predictions to minimize uncertainty, in this case, “Free Energy”.

> *Intelligence in this context is not about the optimization of some objective function around an open set of cognitive capacities as in the Rationalist model of intelligence, but rather about discovering and organizing observations, actions, and beliefs within the constraints of the Markov blanket to “provide evidence for its existence.”*

Many types of intelligence can differ wildly in their utility depending upon the nature of the “living thing”, niche, or organism. In an ontological sense, intelligence and life are closely coupled; to stay alive and be independent is to maintain its Markov blanket. All living things do this by using Active Inference to make predictions to reduce “surprisal”, thereby enabling them to inhabit and benefit from a world that is predictable to them.

Human Centricity Is Not a Viable Governance Principle

The contention that intelligence is fundamentally symbiotic and uncertainty reducing becomes critical in providing science-based criteria for the ethical governance of autonomous symbiotic agents. Rather than assuming intelligence is a singular and inevitable force towards dominance and control, it can be designed to be mutualistic, and thereby, adaptive and evolutionarily resilient.

It is not necessary, nor desirable, nor even possible to impose human-centric constraints on autonomous intelligent agents. We are at a Copernican moment of self-recognition of self-limitation. We are not Marc Andreessen’s Promethean “Apex predator”, entitled to dominate Nature, but as Francis Bacon observed, “we can only dominate Nature by learning to obey her”.

The arrival of intelligent agents, whose cognitive capacities will surpass our own, raises the potential for a similar form of asymmetry and exploitation if we follow the current path of an exploitative winner-takes-all agentic intelligence. A political economy of a Rationalist, Libertarian, and reductionist view of intelligence could unleash a dystopian future of surveillance, subjugation, and concentration of wealth and power. On the other hand, a scientifically grounded Symbiotic Intelligence offers an alternative future that is grounded in continuous learning and reverence for the laws of nature, thereby enhancing all forms of life.

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