

Mathematical proletarianization

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Since the [Navier-Stokes drama](#), the mathematical community and the general population are stupefied by results obtained by LLMs. Of course, it was already the case with other famous conjectures claimed by tech companies. Some people are prophetizing the death of human mathematics, vanquished by the god-machine.

These assertions are excessive and heavily criticised for their naivety and the obvious corporate interests. Some critics¹ (but not all) even dare to talk about ecological issues and the concentration of power. But in my opinion, one philosophical point is missing. To twist Duminil-Copin's very insightful post² : AI doesn't empower us, it **proletarianizes** us.

1 Proletarianization?

My point here is not to spread Marxist propaganda, but to invoke a concept from the philosopher of technology [Bernard Stiegler](#).³ Carry on, you'll see how it's relevant.

The initial Marxist definition of [proletarianization](#) is the downfall of artisans to proletarians through [deskilling](#). The former are inducing their personal art in their crafts, where the latter are just another cheap cog in the industrial machine. In the Manifesto, they predicted that it will someday affect "*all classes of the population [...] because their specialised skills are rendered worthless by new methods of production*". Is it our time?

Bernard Stiegler took the concept further: [stieglarian proletarianization](#) is the general dispossession of knowledge, not only manual but also social and theoretical. It generates alienated existences and unsustainable futures.

2 Examples

Here's a few examples to make it clearer:

- GPS makes people unable to navigate by themselves.⁴ Drivers often obey the machine's indications without even looking at signs. Even taxi drivers are concerned⁵ and might soon be all automated.

¹Like the [Association for Human Mathematics](#)

²[Care for a little more AI?](#), Hugo Duminil-Copin, Proofs and Prompts, Aug 30, 2026

³And incidentally, my uncle.

⁴[Habitual use of GPS negatively impacts spatial memory during self-guided navigation](#), Louisa Dahmani and Véronique D. Bohbot, Scientific Reports, 2020

⁵[The co-evolution of taxi drivers and their in-car navigation systems](#), Fabien Girardin and Josep Blat, Pervasive and Mobile Computing, Volume 6, Issue 4, 2010

- Consumer society proletarianizes desires since TV channels and recommendation algorithms are “*selling available human brain time to Coca-cola*”,⁶ preventing people to develop their own tastes, and wiping out local cultures with mass media.
- LLMs proletarianize intellectual faculties. Models used by the vast majority of people are black-boxes owned by dubious corporations. They are fantastic oracles with encyclopedic knowledge and light-speed abilities (much faster than our brains!), sustained by the biggest investments ever. Their success is of course understandable, but its *disruptive* launch leaves no time to develop an hygiene of practice. This marketing strategy has dramatic effects : studies show a “significant threat to higher-order cognitive skills”,⁷ leading in extreme cases to *AI psychosis*. Even highly educated people (us!) are deskilled.⁸ This is the proletarianization of theoretical skills.⁹

3 Mathematics aren’t proletarianizable

The point of mathematics is to achieve understanding, based on proofs and collective debate. It’s a peer-to-peer community, even at the time of Euclid. A *common* knowledge, built and curated through millennia. It’s based on transparency and cannot contain black-boxes; even if not every mathematician (certainly not me) knows all the axioms from set theory, it’s still possible to learn them.

As Duminil-Copin said, the mathematical activity is not reducible to solving problems. To quote him : “*The richness of what emerges from repeated attempts, failures, detours, and encounters is extraordinary.*” By asking a powerful machine to crack a problem for us (even petty computations), we delegate this process and become, little by little, mathematical proletarians.

4 Formalization detour

To illustrate my point, I’d like to talk about mathematical formalization. I’ve got a few friends involved in the proof assistant Lean, and they are desperate about the direction taken by the community. Their initial goal was, like Bourbaki, to formalize mathematics in a way that makes it globally understandable. This technological tool (it would be impossible with books) allows to see how theorems depend on their hypothesis, and it’s a whole field of research to implement statements in a rigorous and clearer way. The goal definitely wasn’t to create an oracle which eats a paper and spits out YES/NO.

Take for instance the formalization of Fermat last theorem (FLT). Kevin Buzzard (FLT expert and Lean veteran) got a five year £1M grant to formalize the modern (insightful) proof, not to check its veracity but to understand it better. This project involves many people, including PhD students, who are learning a lot. But on September 2026, Anthropic announced their autoformalization of another proof of FLT, done by a swarm of AI agents in 11 days (and probably an enormous amount of money). However their proof isn’t instructive at all. It is utterly unrealistic to read it, since it represents “*over 13.4 million lines of code and takes nearly 20 times as long to compile as*

⁶From “*available brain time*” to “*assisted brain time*” Denis Cristol, Sept 9, 2026

⁷AI-overdependence and human cognitive decline: Hazards, evidence, and mitigation strategies, Fakhroddin Noor-behbahani and Kiemute Oyibo, Computers in Human Behavior Reports, Volume 22, May 2026

⁸Is AI ruining our skills? Early results are in — and they’re not good, Mariana Lenharo, Nature, 18 June 2026

⁹To dive deeper, here’s an interview (in French, sorry) from Bernard Stiegler’s coworker, Anne Alombert : *L’IA générative et la prolétarianisation de la pensée*, Libre à lire, 10-11-2025

Lean's mathematics library". Buzzard says that maths wise, it "*tells us essentially nothing*".¹⁰ This reminds me some words of Poincaré : "*Science is built up with facts, as a house is with stones. But a collection of facts is no more a science than a heap of stones is a house.*"¹¹

5 Historical detour

Let's try to put things in perspective. We need to remember that even if it wasn't cracking Millennium problems, people announced "the end of theory" when big data arrived.¹² Did it stand the test of time ? Not a bit, as databases are already big enough to contain spurious correlations.¹³ Other example : Wikipedia *vs* Grokipedia. Wikipedia is the paragon of deproletarizing technology, since everyone can contribute, it is democratic and entirely transparent. AI enthusiasts proclaimed that Grok's generated encyclopedia (which types faster than all wikipedians combined) would be more complete and "neutral" than what Musk calls "Wikipedia"... Again it's a failure. Sure, the quantity of articles is impressive, and technically speaking it's a prowess (even if its plundering Wikipedia). But a careful reader will see that the content are full of hallucinations (sometimes hard to spot), and the bias towards Musk political views is well documented. Anyway, the project is dead since April 2026.¹⁴

These proletarianizing tools are dangerous for society. They erode science quality and our relationship with truth. One last example: 2008 financial crisis was caused by the heavy use of complex mathematical models, which for a time poured magical money in the market, but were also dangerous black-boxes. Even Alan Greenspan, the famed chairman of the Fed, admitted that no one understood the technology.¹⁵ Today's AI might be a worse ticking bomb, as it permeates the intimacy of our lives.

6 Will we continue scientific research?

Now back to the maths. We're in mid September 2026 and many people are seduced by the seemingly indomitable force of AI models. Everyone is constantly talking about it, from unknown PhD students to famous professors. So is it true? Will we become button-pushers, operating the cogs of the god-machine? Or will we even be unnecessary for that, replaced by AI swarms?

For the reasons explained above, I don't believe it for a second. The AI push isn't sustainable. It's a PR move from companies and they spend with no limit (estimation of many millions of dollars for Navier-Stokes), but it won't last when the hype dies down. Also, it overall *enshittifies* research by overflowing arXiv and our brains with slop, preventing truly singular concepts to emerge. It might converge, like the ergodic theorem says, to a boring average. But in the meantime it will have, to quote Duminil-Copin again, "*nuked the mathematical landscape, making it increasingly difficult to inhabit after each blast.*"

¹⁰ *FLT: Anthropic has beaten me to it*, Kevin Buzzard, September 4, 2026

¹¹ *Science and Hypothesis*, Henri Poincaré, 1901

¹² *The End of Theory: The Data Deluge Makes the Scientific Method Obsolete*, Chris Anderson, Wired, Jun 23, 2008

¹³ According to Ramsey theory and ergodic theory used in *The Deluge of Spurious Correlations in Big Data*. Calude, C.S., Longo, G. Found Sci 22, 595–612 (2017).

¹⁴ And it started in late October 2025. See *Grokipedia Stopped Reviewing Edits in April. It Didn't Tell Anyone.*, Renée DiResta and Ronald Robertson, Lawfare, August 5, 2026

¹⁵ This is why Bernard Stiegler calls him, paradoxically, a proletarian. See *The Legend of Saint Alan: Larnaudie and Stiegler in the Oversight Committee Room.*, Calum Watt. French Cultural Studies, 2020, 31 (3), pp.173-184.

To conclude, I'd like to recall Grothendieck's 1972 conference "*Will we continue scientific research?*".¹⁶ AI wasn't on the calendar, but he was already criticising the lack of ethical considerations from some colleagues, namely when collaborating with the military-industrial complex. He was also denouncing the damaging impact of productivism and elitism on mathematicians. He wasn't calling for stopping research, but to operate a shift. This was a necessity for him, otherwise apocalyptic wars and ecological collapse will stop everything in a much grimmer way. His words resonate with our time : "*The development of algebraic geometry will come to a halt, like everything else, if our species were to become extinct in the coming decades—a possibility that seems increasingly likely today.*"¹⁷

Instead of dooming over the news and consider quitting, we should collectively seize the moment to answer Grothendieck's question. It is high time for imposing better mathematical values, where insights are shared even if they don't lead to an immediate breakthrough, where we take care of the community and stop unhealthy behaviors (publish or perish, questionable ethics). Where we step out of our ivory towers, look around and accept our social responsibilities. This doesn't mean rejecting AI altogether, there can be good (non-naive) use of this revolutionary tool. Bernard Stiegler would maybe call it a *pharmakon*, a remedy and a poison. But if we don't want to end up in Richard Schwartz's nightmare,¹⁸ we must embrace the role of mathematics: **deproletarizing** ourselves. No one can do it for us.

PS: I apologize for my English, it's not my mother-tongue. For obvious reasons, I didn't ask an AI to reformulate my prose. Instead I sent it to some friends, whom I thank for their feedback.

¹⁶English translation by Peio Borthelle.

¹⁷*Travaux de Heisouké Hironaka sur la résolution des singularités*, Alexandre Grothendieck, Actes du Congrès International des Mathématiciens (Nice, 1970), 1971, p. 7 to 9

¹⁸*The Fate of the Riemann Hypothesis*, Richard Schwartz, Aug 7, 2026 (right on time!)