

Research is about the paths we dare tread, not the destination

aka

Mick's tantrum

aka

Nietzsche wrote "God is dead", and computer scientists took that personally

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Intro

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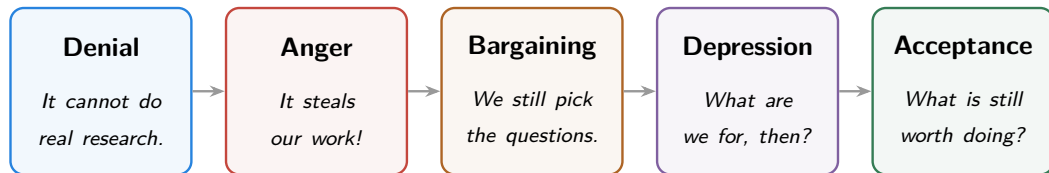
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⇨ I will try to articulate why I believe it is **necessary even if we only care about our research practice** (which, by the way, we probably should not).

Disclaimer

THE FIVE STAGES OF GRIEF

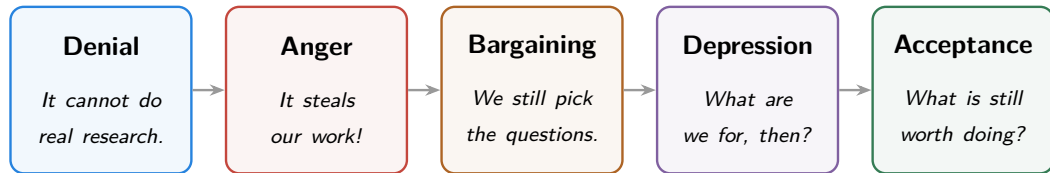
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CALLING OUT MY OWN DUPLICITY

I do use some AI, though mostly as a glorified proofreader;¹ and I am starting to teach the use of Lean + LLMs in my Bachelor's courses — *know thy enemy?*

↪ I will not cast a stone to anyone else; *we all need to find our way, me included.*

¹No AI was hurt in the preparation of this talk.

Rules of the game

RANDOM MUMBLINGS

I am going to take **strong stances in various, sometimes orthogonal, directions**. There might be some instances of:

- hyperbole,
- sarcasm,
- or even some accidental humor.

I do really believe all arguments are worth considering though.

↪ *Solely for the sake of fostering an interesting debate, obviously!*

AI: last nail in the coffin of a dying system? (1/3)

Academic research has been **ill** for a while:

- *publish or perish* ideology;
- *extreme inequality* in the means of producing quality research, with top groups / countries / topics attracting most of the funding;
- *extreme amount of publications*, paradoxically hindering scientific progress.

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- ⇒ **AI makes these issues dramatically more acute and visible, in a short time frame.**

AI: last nail in the coffin of a dying system? (2/3)

EXAMPLE: MONOPOLY OF KNOWLEDGE

In *experimental sciences*, money has always been the name of the game, as one needs costly equipment to stay in the race. Now *theoretical sciences* face the same threat: only those who can pay the tokens can keep up and drown us under AI-generated papers.

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POLITICAL AND PHILOSOPHICAL OPINION

IMHO, **modern scientists should strive to pursue the heritage of *Les Lumières***, and fight to make knowledge truly accessible to everyone — there is no point in producing knowledge by/for a caste.

↪ *Again, one can argue it was already the case to some extent.*

AI: last nail in the coffin of a dying system? (3/3)

EXPLORERS NEED UNCHARTED TERRITORIES

Humankind is inherently curious: we need some unknown to explore, and challenges to overcome, to express the full extent of our imagination. And *we usually find the most interesting discoveries on the way* — there would be no Columbus in a world of satellite imagery.

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↪ **Who will undertake daunting theoretical research when mega-corporations can and will render their work obsolete in an instant, just for a publicity stunt?**

AI is a tool — but for what and for whom? (1/2)

A LUCID ACCOUNT OF AI, TODAY

Forget about our *dream of ethical AI* for a second and let us look at the (economically-enforced) reality, right now:

- only **cyberpunk-leaning mega-corporations and authoritarian regimes** have the means to fuel cutting-edge AI (in data, power, etc);
- two main applications are **mass surveillance** and **warfare**.

AI is a tool — but for what and for whom? (2/2)

THE SHAPE OF THINGS TO COME

Public discourse is dominated by fears of seeing AI “malfunction” and kill us all; but **what if it functions pretty well and we leave it in the hands of Dr. Evil-level super-villains?**



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- ↪ *Humanity has proved time and time again that if a tool can be misused, it will be.*
- ↪ **Our knowledge makes us accountable: we do not have the luxury to be naive and neutral.**



The stuff I am not allowed to talk about — Next show @ Chalet Suisse



Dependency to
technology



Rogue Als



Transhumanism



Ecological concerns



Sovereignty



Loss of social
contacts



Uniformity



Job apocalypse

↪ **IMHO, it is our duty to try and weigh in on these issues, as citizens, and as scientists.**

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- ⇒ **Show of hands: Would you take the drugs? Promote them? Would your answer change if refusing meant losing your career?**

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Should we accept to play by rules we abhor (if we do)? Should we happily accept to cut the branch we are sitting on and lose the meaning of our vocations?

If individual refusal is unrealistic, what collective rules would make it possible?

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↪ **What is the point of going faster for the sake of it? The inherent value to humankind? Is the cost worth it and to whom?**

What if?

WHAT IF ETHICAL AI EXISTED?

Even if AI delivered correct results, cheaply, safely, and ethically, **we would still need to ask what we want research to be — and what place we want to have in it.**

↪ As such, the “AI crisis” might actually be a useful revelation of a question we should have posed earlier.

Human knowledge (1/2)

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⇒ Consider sports or arts: *(some) humans want to surpass themselves and keep dreaming.*

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- The *practice* of maths — like philosophy — is an end in itself: finding answers is often just a motivational proxy.

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⇒ **In the meantime, we can try to entertain some level of *organic science*, as we promote organic food.**

What should we do ~~tomorrow~~ today? Back to the roots (1/2)

A WAY FORWARD?

Go back to the *origins of science*, ever present in some of our grandiose titles:
PhD — Philosophiae doctor, Master of Arts, etc.

Let us be inspired by (and aspire to be?) the greatest:



Aristotle



Descartes



Pascal



Leibniz

↪ Embrace science as a whole, with a greater emphasis on the *human experience*.

↪ **We do not *have to* compete with AIs to be the better machine.**

What should we do ~~tomorrow~~ today? Back to the roots (2/2)

TAKE-HOME MESSAGE

1 Science is about the paths we dare tread, not the destination.

- ▷ We are not only *result-producing machines*; at least, we should not be. Most of our results are not *that* important anyway.
- ▷ As the French philosopher Goldman puts it: *“Y’a que les routes qui sont belles ; et peu importe où elles nous mènent.”*

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2 We need to take a bigger part in society and in the public discourse.

- ▷ *Stop hiding behind our technical lives*; they are over anyway if we do nothing.
- ▷ We have a unique edge to try and bring some light on what is happening, so *let us find a new way to be useful* to society as a whole.
- ▷ It is a civilizational choice: *we have a duty to be actors, as citizens and scientists.*

Opening the debate

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ONE QUESTION

What kind of research do we want to practice, what place should it have in society, and *what will we do to shape it?*

↪ **Thanks for bearing with me!** 😊

↪ I would be happy to discuss more; some food for thought (appetizers) in the appendix.

Appendix — Food for thought

Some (non-exhaustive) food for thought (1/2)

Interviews and panels:

- HLF Panel Discussion: AI in Mathematical Research
- Moshe Vardi — Is AI actually going to kill us all?
- Scott Aaronson — The mathocalypse, will intelligence matter anymore?

Blogs, articles and other personal opinions:

- Proofs and prompts
- Alex Kontorovich — The Shape of Math To Come
- Kevin Buzzard — To grieve, or not to grieve?
- Max Weinreich — The crisis of AI-generated mathematics
- Tasmin Chu — How we can win
- Daniel Litt — The end of mathematics
- Jeremy Avigad — What is mathematics now, and what should it be?

Some (non-exhaustive) food for thought (2/2)

Declarations and initiatives:

- The Association for Human Mathematics
- Leiden Declaration on AI and Mathematics
- `\begin{proof}`

Some data:

- Big batch of claims by OpenAI
- Largest poll of AI researchers to this date

For some philosophy and a slap in the face:

- The works of Éric Sadin.