THE HYBRID THINKER

HOW AI SHAPES REASONING AND DECISION-MAKING?

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AI in Research: Possibilities and Challenges

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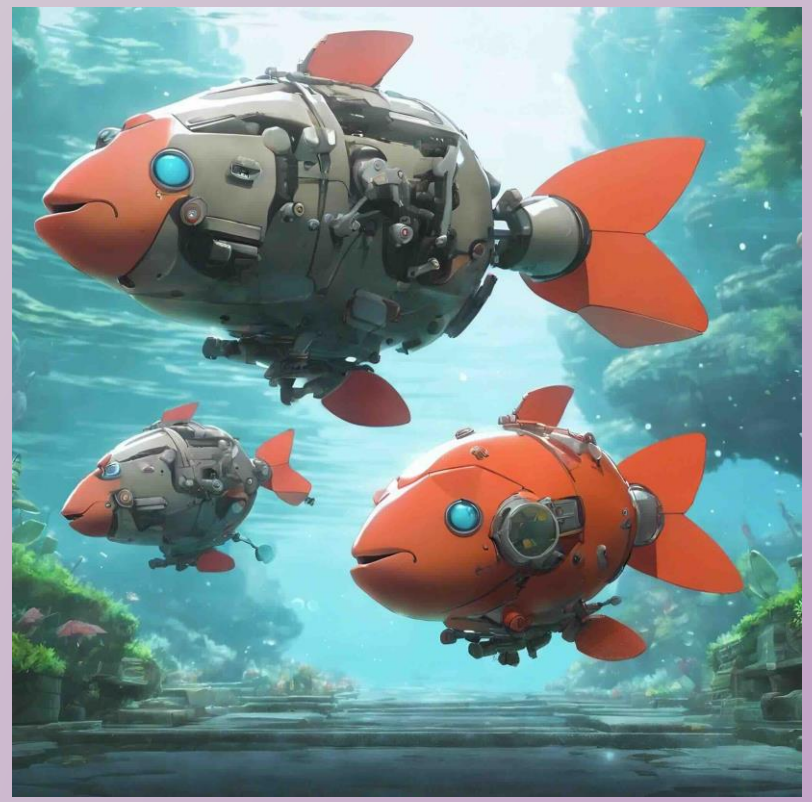
What I am going to do

- How employing AI systems affect us as cognitive agents, critical thinkers – and researchers…
  - in situations when we are *coupled* with AI? (i.e., thinkers as hybrid systems)
- Different types of hybrid thinking/cognitive extension
  - Extended Cognition – Distributed Memory – AI-Extenders
- AI-extenders hold potential but come with risks like cognitive atrophy
- Questions of transparencies in using technologies
  - too much phenomenological transparency & too little reflective transparency can lead to blind spots for our moral decision making
- I focus on cognitive processes (e.g. critical thinking, memory, decision-making) that form the core of doing academic research

What I am *not* going to do

- Artificial General Intelligence (AGI)
- Conscious/sentient AI
- Artificial Agents (AAs)
- Artificial Moral Agents (AMAs)
- AI as an autonomous ”thinker”



”The AI Scientist” by Sakana AI
https://sakana.ai/ai-scientist/

Two types of transparencies
in implementing technologies

- **Reflective transparency**
  - AI operations should not be a black box
- **Phenomenological transparency**
  - Experientially transparent in use – when using a tool is so effortless it "vanishes" from awareness
  - The using experience is transparent

Andrada, Clowes & Smart (2022); Facchin & Zanotti (2024); Naeem & Hauser (2024); Gallagher (2024); Telakivi (forthcoming)

Solutions suggested to the transparency problem

- AI systems should be designed so that if they fail, they fail in highly salient ways that interrupt transparent use
- As societies, we should never replace human expertise with AI expertise
- We should cultivate general public's AI literacy
- Make information about the AI systems publicly available

Naeem & Hauser 2024 "Should We Discourage AI Extension? Epistemic Responsibility and AI". *Philosophy and Technology* 37(91).

AI Expertise & Cognitive Atrophy

- AI systems can improve efficiency in e.g. analysing large datasets and identifying patterns – can be very useful e.g. in medicine and engineering
- However, they have been shown to decrease critical thinking skills: increased use of AI tools is associated with lower critical thinking skills
  - Gerlich 2025: ”AI Tools in Society: Impacts on Cognitive Offloading and the Future of Critical Thinking”
- If we replace our expertise with AI expertise
  - Research done by machines to machines is absurd
  - Cognitive atrophy
- Cognitive off-loading –– scaffolding –– integration/ enculturation (Menary & Gillett 2022: ”The Tools of Enculturation”)

Trust in colleague

- AI can at best be *reliable*, but not *trustworthy* in the philosophical sense (where moral agency and ethical motivation are required)

- Hence, when we use AI in research, the other party is not a trustworthy thinking partner
  - We don't have shared intentions and goals
- Even though it is natural to anthropomorphize and see it more like a colleague, this should be avoided
  - because of the risks that come with fluent, phenomenologically transparent collaboration with AI

- We should make an effort to keep it as a tool, even though it "wants to become a colleague"