Relational Expertise: What Machines Can't Know

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How can regulation research contribute to safer care for all?

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Artificial Intelligence and Jobs

NOV 03, 00:50

Elon Musk tells Rishi Sunak AI will render all jobs obsolete

Anna Gross in London and Hannah Murphy in San Francisco

Rishi Sunak, UK prime minister, and Elon Musk at the UK AI Safety Summit, which Musk says 'will go down in history as being very important' © Bloomberg

“Doctors in particular aren’t likely to graciously concede control of their patients’ treatment to synthetic intellects. But eventually, when outcomes demonstrate that this is the better option, patients will demand to see the attentive robot, not the overworked doctor, for a fraction of the fee, just as many people would now rather have an ATM than a human teller count out their cash.”

Kaplan 2015

Technological Forecasting and Social Change

Volume 114, January 2017, Pages 254-280

The future of e susceptible are computerisatio

Carl Benedikt Frey [a], Michae

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The Economist

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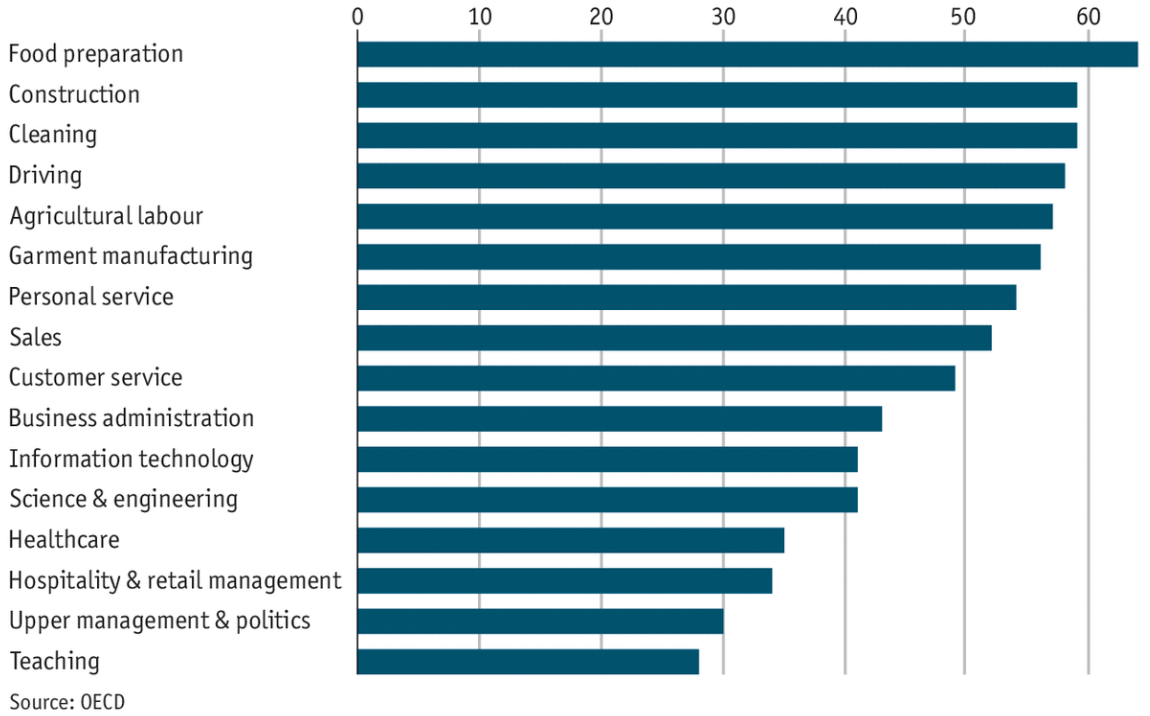
A study jobs are automa

Automated for the people

Automation risk by job type, %



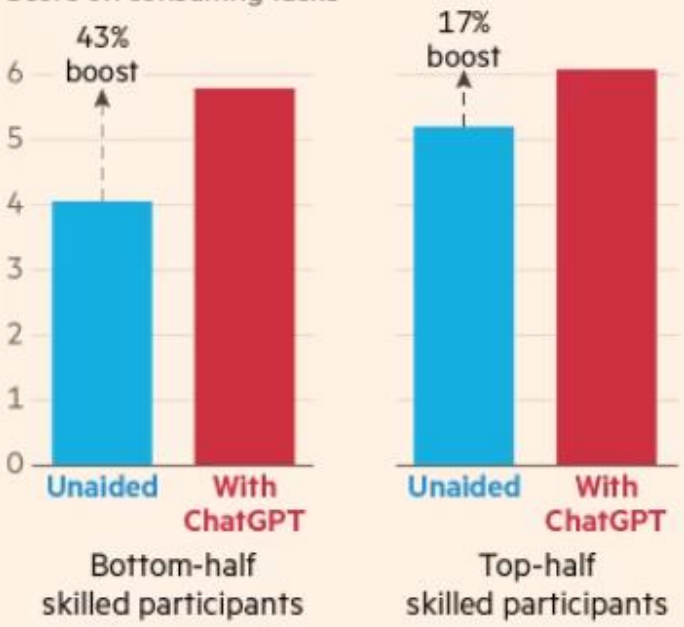
Source: OECD

Economist.com

Generative AI

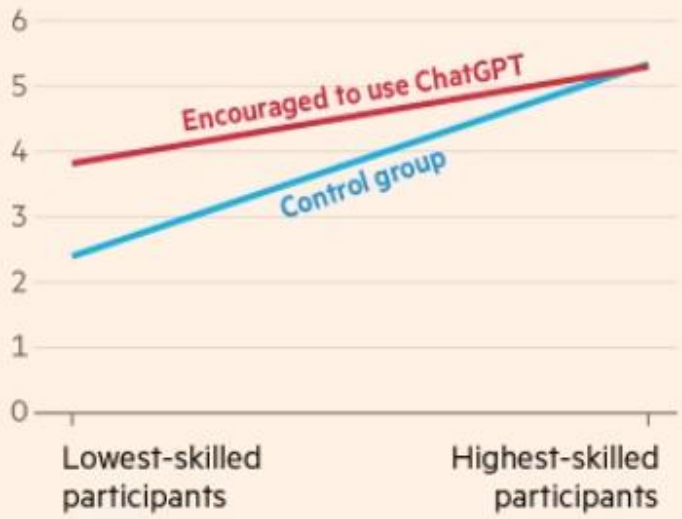
In high-skilled white-collar occupations, generative AI levels the playing field, boosting performance the most for less-skilled workers

Impact of using ChatGPT on performance, among 758 Boston Consulting Group staff



Source: *Navigating the Jagged Technological Frontier: Field Experimental Evidence of the Effects of AI on Knowledge Worker Productivity and Quality (Dell'Acque et al, 2023)*

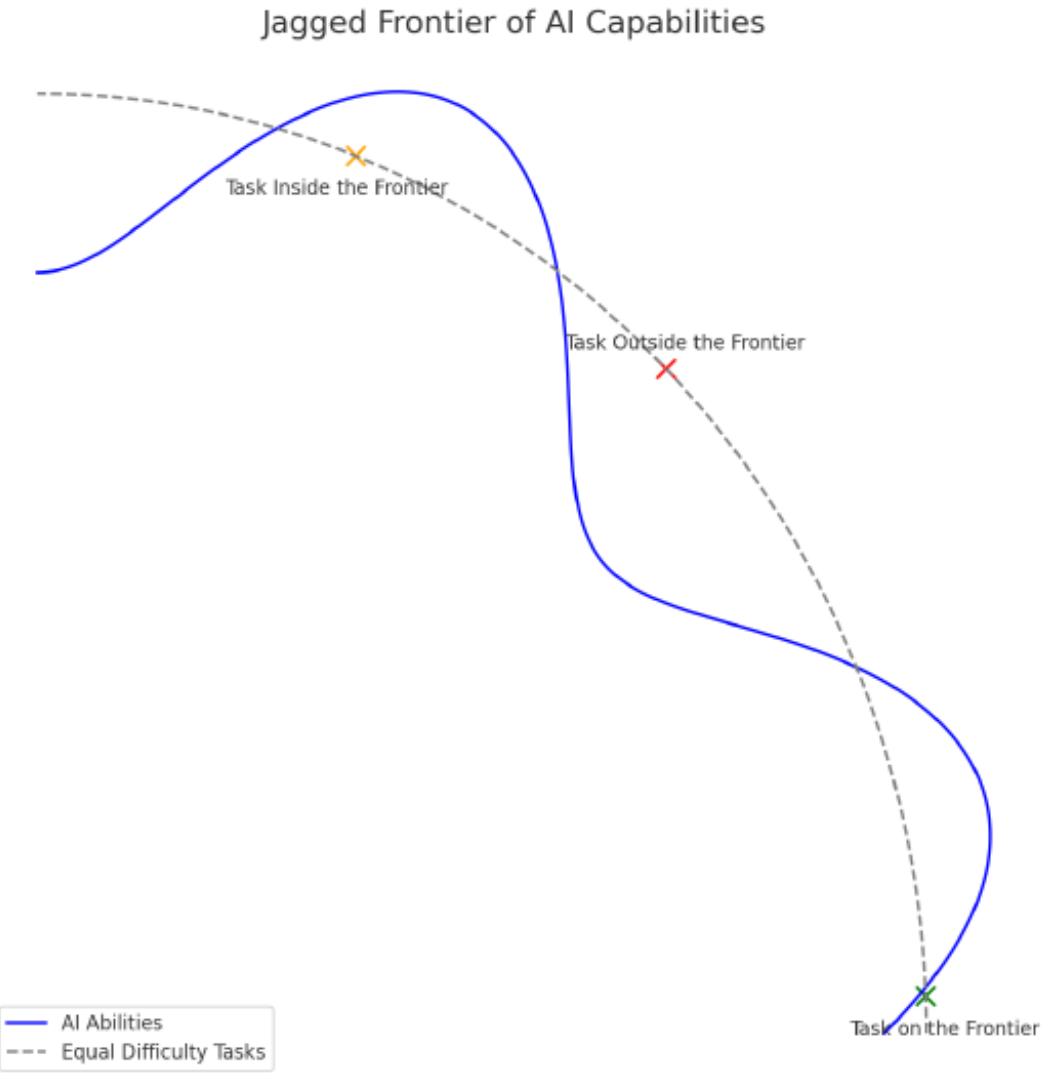
Impact of being encouraged to use ChatGPT on performance in professional writing tasks*



*Writing press releases, reports, analysis plans, and delicate emails

Source: *Experimental Evidence on the Productivity Effects of Generative Artificial Intelligence (Noy et al, 2023)*

Figure 1: **The Jagged AI Frontier**



Different Technologies, Same Patterns

FORECASTS AND DISCOURSE

- Draw on a substantialist understanding of expertise.
  - expertise is conceptualized as an intellectual possession, a mental achievement, or a cognitive state.
  - Examined as independent of and extractible from the people, places, processes, and objects

EMPIRICAL STUDIES OF PROFESSIONAL WORK

Expertise is more accurately conceptualized as relationally constituted.

- Expertise is generated, applied, and recognized within and through interactions
- Poses particular challenges for the design, development, and use of AI technologies

Expertise is *Generated* Relationally

- Knowledge and know-how is generated in daily interaction
  - Expertise about how work is accomplished through inter-professional collaboration.
  - Expertise about the broader socio-economic, organizational, technological, regulatory system in which work takes place.

Opacity

- Resides in ties and links among actors, making it unamenable to capture, abstraction, reproduction, or replication.

- Inputs into AI technologies - including data, abstract rules, and professional guidance - omit this expertise.

Expertise is *Applied* Relationally

- Knowledge and know-how is applied in relation to particular cases
  - Diagnosis and treatment occur in interaction with patients and families in a context.
  - To be understood, trusted, and heeded it must be adjusted and leveraged in relation to the patient.

Translation

- Expertise increases in appropriateness and effectiveness when it is applied with consideration for the recipient or audience.
- The outcomes and recommendations of AI technologies are not adjusted to the needs and sensibilities of those advised, treated, and served.

Expertise is *Recognized* Relationally

- Knowledge and know-how is observed and valued within an ecology
  - Patients are served by an ecology of experts who are distinct yet interdependent.
  - Training, licensing, certification, and professional associations verify and signal expertise.
  - Patients' acceptance and trust creates recognition.

Accountability

- Members of a profession are individually and collectively accountable, formally or informally, for the advice and treatment even when based on automated outcomes.

- The outcomes and recommendations of AI technologies require explanation and verification by members of professions.

Implications of Relational Expertise

1. Relational expertise will continue to resist technological efforts to emulate and reproduce it.

2. Observing and valuing relational expertise within a profession is crucial for regulating professions' interactions with AI.

3. Professions need proactive strategies for developing and "domesticating" AI technologies, including regulation.

4. New roles around technology should be encouraged to develop within the profession.

Thank you