Beyond Science: AI Models, Genetic Privacy, Research Under Siege, and the Future of Expertise

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This paper presents JOSHA's curated synthesis of recent scientific, technological, and socio-political articles offering readers a comprehensive overview of key debates and emerging insights across disciplines. Topics range from biological aging patterns, data privacy risks in the context of genetic information and corporate bankruptcy, and the socio-cultural framing of large AI models, to policy-driven tensions between science and governance. Additionally, the collection explores challenges in fostering deep-tech entrepreneurship among PhDs, novel immunological findings on food tolerance, and reflections on societal dynamics in Germany. The compilation also includes critical analysis of artificial intelligence's role in education, law, and academic institutions, as well as discussions on AI's potential in countering misinformation. By providing concise summaries and critical perspectives, this summary aims to facilitate interdisciplinary dialogue and support scholars, policymakers, and practitioners in navigating complex contemporary issues at the intersection of science, technology, society, and governance.

Keywords: Large AI Models; Genetic data privacy; Science policy and funding; Academic entrepreneurship.

1. Do We Age Steadily, or in Bursts?

By Mohana Ravindranath

Recent scientific research suggests that aging may not be a continuous, linear process, but rather one marked by sudden shifts during certain life stages. By studying molecular markers like proteins and DNA changes in blood, researchers have found evidence that people experience accelerated aging around their mid-40s and again in their 60s. These changes are often linked to metabolism, muscle function, and immune system decline, explaining common age-related challenges such as processing alcohol or susceptibility to illness. While still in early stages, this research also explores how lifestyle factors and life events, like illness or trauma, can impact aging. Ongoing research aims to clarify these processes to improve health and extend the years of healthy living.

This article was previously published in The New York Times on March 6, 2025.

Read the full article here

2. Bankruptcy, Genetic Information, and Privacy — Selling Personal Information

By Sara Gerke *et al*

23andMe, a major direct-to-consumer genetic-testing company, is facing the possibility of bankruptcy, raising concerns about the fate of its vast database of sensitive genetic and customer-reported data. If the company goes bankrupt, this data may be sold to the highest bidder, potentially compromising the privacy of millions of customers. The United States lacks a comprehensive federal privacy law, and 23andMe is not governed by health privacy regulations like HIPAA. While the company provides some customer protections through its privacy policies, including the right to opt out of data storage and limits on sharing personal information, these protections are not absolute, especially in the event of bankruptcy or a corporate sale. Such cases could result in personal data being transferred to new entities with different privacy terms. Federal bankruptcy law offers some safeguards, such as the involvement of privacy ombudspersons and regulatory oversight, but these protections remain limited. Stronger federal privacy regulations, similar to the European Union's GDPR, or expansions to existing U.S. laws like GINA or HIPAA, could better protect consumer data in cases of corporate distress or bankruptcy.

This article was previously published in The New England Journal of Medicine, Volume 392, Issue 10, on March 1, 2025.

Read the full article here

3. Large AI models are cultural and social technologies

By Henry Farrell *et al*

Large AI models are presented not as autonomous intelligent agents, but fundamentally as cultural and social technologies. These models combine characteristics of past information technologies, such as writing and the internet, with social technologies, such as markets and bureaucracies, enabling new ways of accessing and reorganizing human information. Rather than focusing on a hypothetical general artificial intelligence, the discussion should focus on the social and cultural impacts of these technologies, analogous to those of earlier innovations such as the printing press. Understanding AI models as cultural and social technologies can better guide the debate, research and policies related to their development and consequences.

This article was previously published in Science, Volume 387, Issue 6739, on March 13, 2025.

Read the full article here

4. News at a glance

By Science News Staff

The March 13, 2025, edition of Science highlights significant policy changes and funding cuts in U.S. science under the Trump administration, sparking widespread protests and concerns about the future of scientific research. Thousands of scientists demonstrated against what they perceive as anti-science policies, particularly funding cuts affecting research on vaccine hesitancy, which align with the views of vaccine skeptic Robert F. Kennedy Jr., the Secretary of Health and Human Services. The administration also cut $400 million in grants and contracts to Columbia University, citing its response to anti-Israel protests, raising concerns over political interference in academic funding. Efforts to terminate senior NIH scientists were temporarily blocked, and a federal judge halted a proposed reduction in overhead payments to universities. Scientists receiving federal funds were required

to disclose affiliations with communist governments and pledge opposition to Christian persecution. Several advisory panels for agencies such as the U.S. Census Bureau and the Department of Agriculture were dismantled, limiting independent scientific input. Internationally, Japan's ruling party moved to increase government control over the national science council, while a Russian university excellence initiative was linked to a rise in research misconduct. Additionally, studies revealed that ocean acidification is reducing phytoplankton productivity, NASA is shutting down instruments on the Voyager probes to conserve energy, and these developments collectively underscore growing tensions between science and politics in the U.S., raising concerns about academic freedom, research integrity, and government influence on scientific priorities.

This article was previously published in Science, Volume 387, Issue 6739, on March 13, 2025.

Read the full article here

5. Support PhDs building deep-tech ventures

By Theo Diamandis *et al*

PhDs in STEM face significant challenges in turning their research into deep-tech ventures due to a lack of tailored support systems. Existing entrepreneurship programs primarily cater to fast-paced software startups and fail to address the complexities of commercializing scientific discoveries, which involve high technical, regulatory, and production risks. A comprehensive support system is needed across three key phases: early-stage curiosity, where researchers develop entrepreneurial skills and network; serious project exploration during the PhD, where they assess market opportunities and receive structured guidance; and post-graduation spin-out creation, where fellowships provide financial support, infrastructure, and industry connections. Scalable initiatives are crucial to ensuring that thousands of scientist-entrepreneurs can transition their discoveries into real-world applications, strengthening innovation and economic impact

This article was previously published in Science, Volume 387, Issue 6739, on March 13, 2025.

Read the full article here

6. Identification of antigen-presenting cell–T cell interactions driving immune responses to food.

By Maria Cecilia Campos Canesso *et al*

This study investigates how different antigen-presenting cell (APC) subsets regulate immune responses to food antigens in the gut. Using the LIPSTIC method, researchers identified that at steady state, cDC1s and Rorγt+ APCs promote the differentiation of regulatory T cells (pTregs), essential for oral tolerance. However, helminth infections, particularly Strongyloides venezuelensis, disrupt this balance by reducing tolerogenic APCs and increasing inflammatory cDC2s, which do not present dietary antigens. This shift leads to impaired pTreg generation and a breakdown of oral tolerance. The findings highlight a compartmentalized system where distinct APC subsets handle dietary and pathogen-derived antigens, preventing inappropriate immune responses to food even during strong immune reactions. This study is important because it reveals how specific antigen-presenting cells regulate immune tolerance to food, providing insights that could help develop new treatments for food allergies and inflammatory bowel diseases.

This article was previously published in Science, Volume 387, Issue 6739, on December 19, 2024.

Read the full article here

7. Deutschland, eine Gesellschaft der Neider - Germany, a society of envious people.

By Ralph Bollman

The writer expresses concern about the complexity of the current German political system, particularly the challenge of satisfying the needs of all sectors of society. In other words, any government attempting to draft an agenda along with its respective funding must contend with complaints from those who would prioritize different values and problems. At the same time, the writer highlights how Germany's current financial stability—where economic crises and structural economic problems are not yet evident—leads to a lower prioritization of economic sector issues in favor of an ideological agenda.

This article was previously published in Frankfurter Allgemeine Zeitung, on March 7th, 2025.

Read the full article here

While the author's analysis is valid, it is important to remember that this characteristic is not only one of democracy's burdens but also one of its most important and essential qualities. The creation of governments that aim to meet the broadest social needs is crucial, as is fostering a social dialogue where political agendas and the public funding of such initiatives remain transparent, generating a constructive discussion in the state (Tóth Martínez, 2025, from JOSHA).

8. Künstlerische Intelligenz in Forschung, Lehre und Hochschule - Artistic intelligence in research, teaching and higher education

By M., Löwisch *et al*

In the last years, especially after the appearance of OpenAI resources, this technology has revolutionized our reality. Just as Heckmann and Rachut highlight, even though AI entered our lives, it is not so clear that our social structure was prepared for it. They highlight the necessity of adapting our frameworks to the new reality which different AI systems offer. This contribution attempts to do this from the German legal, economic, scientific, and social context.

The book begins by attempting to clarify the theoretical framework from which the reader should approach the concept itself. From there on, the book explores the introduction of AI into the legal system and how the judicial context has to be adapted to this new technology. The editors put an important emphasis on education, reflecting on the institutions, teachers, and students. Also, the effect of AI on property rights is studied, offering very interesting solutions to the problem. AI in the academic context is another engaging aspect of the concept which is discussed. And last but not least, the book takes a look at how AI can be introduced in various fields. Each of the articles is written by experts in their fields, offering valuable points of view on the topics.

The book is a very important contribution to the perception of AI and the creation of a theoretical framework from which one can approach AI. As they highlight, the role of institutions of knowledge is now to understand how AI can be introduced in their

respective fields and then find a method to communicate it to society in order to create a relationship between humans and machines which is beneficial to us.

This article was previously published in Duncker & Humblot, Volume 72, 2025.2

Read the full article here

9. The Problem with AI Dialogue at Scale

By Thomas H. Costello *et al*

In their latest article, Costello et al. (2025) add another very interesting perspective to the ongoing dialogue, which was initiated by their 2024 article, where they proposed the use of AI programs to combat conspiracy theories. In this article they pondered the claims made by Nabavi et al. (2025). From their epistemological perspective, they argued that the AI program should be designed with a focus on the individual rather than the socio-cultural context from which they come. Instead of relying on a "trusted messenger," they emphasized the importance of truth and logical argumentation. Lastly, they clarified that the main objective of their study was not the practical application of their AI model, but rather to explore how a properly designed AI system can combat conspiracy theories instead of propagating them.

This article was previously published in Science, Volume 387, Issue 6739, on March 13, 2025.

Read the full article here

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