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Talk on the future of academic publications

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The Future of Academic Publications

@Jean-Christophe Mayer, 2023

- The change of technologies for publishing and disseminating academic information is a source of fear and novel challenges for our community. This is not new, as every technological innovation is a cause for concerns. Take the invention of printing and the massification of publications that was seen as a threat by some and an advantage for others in the early modern period: [writing was a technology that had made books more exclusive, and suddenly print gave access to knowledge to new populations of readers, hence the threat for the stability of society that some saw with the advent of print, but also its actual economic consequences: some scribes—incapable of accompanying the rise of the press—lost their jobs. An entire ecosystem transformed itself and everybody did not welcome this transformation.] It is no different now. Every change of technology creates a crisis and questions have to be asked and debated to restore some sense of acceptable order or consensus.
- Pushed by the European Union and Universities, we, as academics, are forced more and more to turn to other ways of making our knowledge public than through traditional publishers.
- Thus, the encouragement, which varies from one country to the next, to make publicly funded knowledge available through open access platforms. This has advantages, as it speeds up the sharing of science and avoids replication of the same data. Yet it also has some serious weak points: pre-prints, even when approved for publication, contain mistakes and are not easily quotable; despite various open access licences to protect intellectual property, there is still the risk of plagiarism, of taking the findings of one article out of context, to construct conspiracy theories, for instance. Moreover, not every country and not every region within a nation advance at the same pace. This creates gaps between nations and accentuates inequalities between them.
- Also, because of the rush for Open Data and Open Access (some ten to fifteen years ago), some countries and universities in the Union have created too many open access platforms, which are not related to each other. This explains the current efforts to build national repositories, which would then be connected to the *European Open Science Cloud (EOSC)*, whose mission is to disseminate European knowledge, showcase it and

also give all European researchers access to the same digital tools, like, for example, super calculators. The problem here is that it is a slow process with hurdles to be overcome, as, typically, data is spread out in a flurry of repositories, which can't always operate or communicate with centralized national platforms or the *European Open Science Cloud* itself. It is thus a metadata and computer language challenge to create what the European Commission wants: a Union at the vanguard of knowledge through the European Cloud. [Plus, there are economic and political problems, not every country in the Union wishes to invest or encourage open access and some are reluctant to share their data. Finally, environmental issues appear also, as all these platforms and data farms are energy-consuming.]

- A word on the much maligned Twitter. [If we examine its internal corporate life, we discover that, from the start, Twitter has been burdened by serious internal dissent, even before Elon Musk's arrival, which, as you know, stirred a lot of discontent. It was created in 2006 and is a micro-blogging platform, where again it is easy to decontextualize information, as well as advertise and disseminate genuine knowledge through its massive network.] Should we continue to use it?, is a question one could ask. Although, one must remember that it represents a community of 395 millions users, that is has no direct competitors and that heads of states and official organisations continue communicate through it. There are, of course, other solution such as *Mastodon*, a social network divided into several self-managed decentralized communities. A young German computer engineer, Eugen Rochko, who was probably well-meaning created it. It has only 6.3 million users at the moment and although the idea of a freer decentralized structure is commendable, problems, which are not very different from those affecting Twitter, arise. Moderation is poor, or variable, according to who is in charge of these decentralized community servers. So, in both the case of Twitter and Mastodon, the main issue remains moderation, which really can only be done by a human being. [This poses the question of the control and supervision of these platforms by actual humans, which is a real problem when you have networks of this size].
- Finally, a word on Chat-GPT and its growing competitors. Having tested it for my own uses, I can say that it is much more advanced than anything Google can currently offer. Its capacity to assemble information in an apparently perfect and personalized fashion is truly amazing. The problem is that it is a source of mistakes and, sometimes, makes up the information. [For instance, I asked Chat-GPT for a list of up-to-date articles on *Hamlet's* "To be or not to be" speech. The results it gave me were spectacular and were

just what I needed. The problem is that many of the results were just fakes and the articles did not exist.] Recently, an IT scientist tried to get Chat-GPT to produce a bibliography. When the scientist pointed out that to Chat-GPT that its results could not be found, the system replied that it was because the articles sought for were behind “a pay-wall”. After a few hours of exchange between the scientist and the system, Chat-GPT recognised it had literally invented the results...

- The problem with artificial intelligence is that it is precisely *artificial* compared to human intelligence, which is not only intellectual but also emotive. Furthermore, intelligence depends on a complex neural system we barely understand at this point in time (only 3% of the brain has been seriously studied), and, of course, that it cannot be separated from the body, which has a significant say in the formation of human intelligence.
- [Thus, the current call for a stop, or a moratorium on artificial intelligence has been read by some as not prompted by the fact that machines will be capable of replacing humans, but as motivated to create an even greater publicity stunt for AI.] The truth of the matter is that AI has reached an impasse, because computer experts have not seriously teamed up with biologists yet. Until this is done, could we speak of AI resembling a form of human intelligence, but the question is, do we want this? As this poses several ethical questions.
- For those of you who have to correct essays clearly produced by Chat GPT, it is obvious that it can produce a fairly convincing thematic essay that could serve the needs of undergraduates. Nonetheless, when we move to more complex essays, where meta-analysis is required, it is incapable of producing advanced thought. So, in my experience, although it represents a threat to education, its danger is limited because its results are often flawed, as the bibliographic experiment referred to above clearly shows. The matters here are how do we tell our students that instead of conning us, they are conning themselves. One has to remember that, on the one hand, cheating is extremely annoying for instructors, but, on the other, that it deprives our students of their self-confidence in the long run. Who can really be proud on the job market of a diploma got through cheating? Cheating does not, in normal conditions, produce marketable skills. Such dishonest attitudes only increase a psychological condition known as “the impostor syndrome”, which can block individuals and/or is the source of a great deal of psychological stress. So, again, the question is, how do we make our students aware of these processes?