***ATTENTION !!***

***LES REFERENCES AUX DOCUMENTS DOIVENT ETRE PLUS EXPLICITES ET DEVELOPPEES (PAS ENTRE PARENTHESES !!)***

The nebulous new world of scientific research

Scientific research and its problem with the truth

The falsification and fabrication of scientific results are becoming alarmingly common. Such is the issue tackled by these four documents, all published in 2023. An article from Science (Document 1) analyses the rise in journal retractions, while a Guardian piece (Document 2) deals with the scope of scientific fraud. The Sydney Morning Herald (Document 3) focuses on how scientists can combat this problem, illustrated in two charts from The Economist (Document 4), showing the increasing numbers of retracted biomedical papers. In view of its multifaceted nature and various causes, to what extent can scientific fraud be curbed?

All four documents point to a dramatic increase in scientific misconduct, even within the most prestigious universities. The number of paper retractions has soared from 40 in 2000 to 5,500 in 2022 (doc 2). In biomedicine alone, there were about 20,000 retractions between 1996 and 2023 (doc 4). According to The Sydney Morning Herald, one in fifty articles contains manipulated data, but some claim that most articles are actually affected, and The Guardian states that the annual number of retractions should be closer to 100,000. While a few result from honest mistakes (doc 2 and 4), most are due to a lack of scientific rigor, inexplicable results (doc 1), falsification (doc 2), and plagiarism (doc 4). This can have unfortunate consequences, as when falsified scientific articles validated ivermectin use against Covid 19 (doc 3).

Although the growing number of independent investigation panels may explain the continuous rise in retractions, (docs 2 and 4) the real reason is the "publish or perish" imperative, which pushes researchers to publish even when they have insufficient time and/or funds to conduct rigorous studies. Documents 2 and 3 even refer to so-called "paper mills" that sell fake scientific articles to scientists in need of funding or promotion. Yet, many journals are still reluctant to withdraw erroneous articles, accepting the authors’ corrections, even if they are far from satisfactory (docs 1 and 3). Similarly, universities tend to simply turn a blind eye to the problem (doc 3).

The fight against this scientific fraud is arduous. Indeed, whistleblowers come under severe pressure: some fear being punished by their superiors, or even face being sued (doc 2). Watchdogs do exist, though, (docs 1 and 2), and online detection tools have been set up in the USA (doc 2) and Australia (doc 3), but more resources are needed to combat fraud effectively (doc 2). Therefore, even if tentative progress is being made in detecting and punishing cheats (docs 1 and 2), as long as publishing articles is linked to obtaining funding and keeping one's job (doc 3), the sharp increase in falsified articles (doc 4) is unlikely to be reversed.

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