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# What is "important"?

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## Abstract

The use of the word "important" in scientific publications is growing. Scientists are invited to avoid it when writing scientific articles. Editors and reviewers, as well, should also pay attention.

## Keywords

scientific publication, rigour, terminology, important

In an editorial published in this journal (This vo Kientza, 2023a), the question of the use of adjectives and adverbs was discussed. Here, we focus on a particular adjective: "important". The Figure 1, from *PubMed* (2024), shows that the annual number of occurrences of this word has been increasing in scientific articles since the 18<sup>th</sup> century. Of course, one gets a more precise idea of the evolution by dividing the annual number of occurrences by the annual number of articles published in a year (Figure 2), but the recent evolution of this ratio confirms the impression that the word "important" is spreading. This

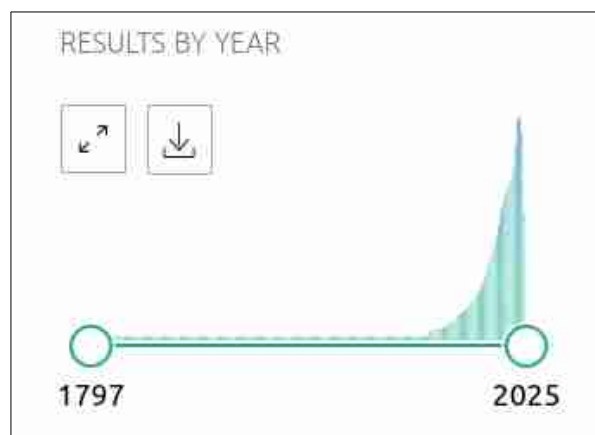


Figure 1. The number of articles with the word "important" since the 18<sup>th</sup> century.

observation invites all scientists to question themselves before writing the word "important". We assert that the quality of scientific journals would also increase if publishers, editors and reviewers also chase this word in the articles for which they are responsible.

The recent increase in the annual number of

Opinion

occurrences of the word "important" in scientific titles, abstracts or texts is spectacular (exponential, with a fit  $\exp(1.0000002108371 t)$ ), despite the fact that it was not established that the science of today has made any more "important" progress than in the past: the increase in uses of the word "important" reveals both less strict writing of scientific articles and less rigorous publishing, which ultimately allows texts to be published in which the word "important" abounds.

What does this word mean? For the Latin *importare*, there was the idea of "being of consequence"... so if the word can be legitimate for some past facts (the consequences of which we can eventually see - assuming we can attribute a single cause to a fact), who can predict the future? Who can say that a discovery will be truly seminal?

Let us look at some examples, in descending chronological order, again using *PubMed*. In the latest abstracts (to date: 7 August 2024), we find:

1. "Given the importance of vascularization in nerve regeneration": here, we know that nerve regeneration only occurs if there is vascularization, so that it is less a matter of ongoing importance, rather than an absolute condition. The formulation given here is therefore inappropriate.

2. "Monoamines and amino acids are important types of neurotransmitters": Neurotransmitters are divided into several categories: monoamines, endorphins, amino acids and various compounds. Does the word "important" here refer to a functional, vital essentiality, or to a higher frequency? And if monoamines and amino acids are numerically predominant in a list of neurotransmitters, are they so in terms numbers of possibilities or of quantities of molecules of neurotransmitters? We can see that, to say the least, the word "important" is ambiguous here, which is contrary to the necessary precision required in scientific texts.

3. "MicroRNAs (miR) are small, non-coding RNAs that negatively regulate gene expression at the transcriptional and translational levels and play important roles in multiple physiological

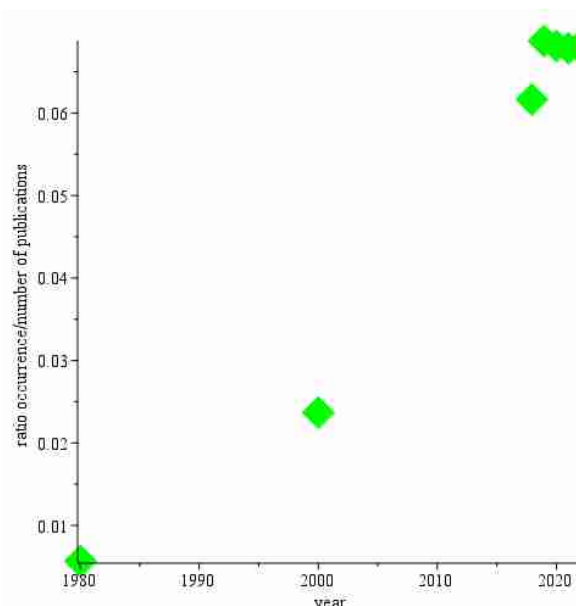


Figure 2. The frequency of the word "important" in scientific publications for the 40 past years (data from PubMed and Web of Science, 2024).

and pathological processes": here, the word "important" is vague and provides no information, just like the word "multiple", which should have been replaced by the answer to the question "how many?", as explained in This vo Kientza (2023a).

4. "As the first immune cells to be activated after an ischemic stroke, microglia play an important immunomodulatory role in the progression of the condition": here the word "important" says nothing about the importance.

So we do not get bored, let us finish with:

5. "Grapevine (*Vitis vinifera*) is one of the most important perennial crops": for this sentence, the authors of the article were contacted, and replied with an explanation in statistical terms. For global fruit production in 2022, grape production comes after (in order) bananas, melons, apples and oranges. Wouldn't it have been more accurate to write that "world grape production is the fifth largest, in order of tonnage produced"?

In the past, the vagueness of the word "important"

Opinion

has often been highlighted. For example, Mack writes (2018): "We value concise writing because we value time. If a paper could have been written in half the words, then it is half as useful as it could have been. The "omit needless words" advice can now be put into practice for the scientific style. If you think a word is not needed, take it out and ask if accuracy, precision, or clarity were harmed. If not, leave it out."

Carraway (2009) focuses more on the topic of this article: "Something simply can't be "important" without reason, and usually it is the reason that is of interest to the reader (Dandelions are an "important" item in the diet of cottontails. Are dandelions "important" because cottontails eat more of them? Are they "important because more cottontails eat them? Are they "important" because they provide some nutritional requirements of cottontails not available in other plants? Try "Dandelions occurred more frequently than other plants in material obtained from cottontails stomachs", or "More cottontails ate dandelions than any other food item".).

Let us end with a question: when we read the word "important", the next time we come across it, let us ask ourselves what it means. We will see that we won't be able to answer the question with certainty, and if we write to the authors to ask them what they meant using the word "important", we will be helping to reduce its use. Of course, the word "important" is not the only one that could be usefully suppressed: think of "new", "green", "delicious", etc.

Recently (more precisely in 2024) an article in food science/technology included in the first page alone "enormous", "successfully", "excellent", "highly", "tremendous", "extensively", etc. (Li *et al.*, 2024): this is obviously poor scientific writing, and poor scientific publishing. But as it is not a good practice to repeat what was already published about the poor use of some adjectives and adverbs (This vo Kientza, 2023a), we do a more useful job by analysing why these words have been used.

This question was discussed by many authors, but in order to sum up a long story, Bredan (2013) can be quoted: "Generations of editors,

reviewers and readers have struggled to understand complex, exaggerated and often pompous prose that does little to enhance the reader's understanding but aims to demonstrate the scholarly prowess of the author. The causes go beyond an inadequate command of the English language: they are rooted in long-standing practices that value pretentiousness over clear communication. These practices are passed down from senior to junior scientists, which explains why scientific writing remains generally poor despite regular criticism. It will take the combined efforts of scientists, research institutions and scientific journals to achieve a marked and long-lasting improvement."

For sure, scientists have a responsibility, but also the whole system in which they work, including research institutions, which place excessive emphasis on "excellence" (Schmid, 2023), or media covering the scientific and technological activity, that sometimes highlights excessively the results they describe. But scientists who might be tempted to succumb should be careful because "Tortured phrases give away fabricated research papers" (Else, 2021).

Finally, as this article is an "opinion", I dare to make a personal proposal, which has no more rational justification than an attitude such as optimism could have, for example: it is through teaching that we can have some chance of returning to more rigorous publications.

Already, many universities offer students the opportunity to produce reports or reviews, which provide an opportunity to teach good practice in science and technology communication, and can be a chance to explain to students why words such as "important" should be avoided more often than not. Sometimes, however, students do not receive a formal course on these issues, and sometimes communication courses are given by language teachers who have no specific knowledge of scientific writing. We need to be vigilant, and produce explicit texts on these issues, hence the publication of the course by This (2019)... and this article.

Opinion

As a conclusion, let us teach how to write (This, 2016 ; This, 2023b). Let us teach how to communicate scientifically. Let us teach the history of scientific publications (This, 2020), Let us teach epistemology. Let us disseminate ethical considerations... and let us show the way, "striving for infallibility without claiming it" (Malebranche, 1712).

References:

Bredan A. 2013. Inheritance of poor writing habits, *EMBO Reports*, 14(7), 593-596.

Carraway L. 2009. Improve Scientific Writing and Avoid Perishing, *The American Midland Naturalist*, 161, 383-394. doi: 10.1674/0003-0031(2006)-155[383:ISWAAP]2.0.CO;2.

Else H. 2021. "Tortured phrases" give away fabricated research papers, *Nature*, 596, 328-329. doi: 10.1038/d41586-021-02134-0.

Li TH, Yang IQ, Lv DY, Wang GS, Guo J, Wan ZL, Yang XQ. 2024. Formation of a transparent soy protein hydrogel: Controlled thermal aggregation of protein using glutaminase, *Food Hydrocolloids*, 155, 110202.

Mack CA. 2018. *How to write a good scientific paper*, SPIE, Bellingham, Washington, USA.

Malebranche N. 1712. *La Recherche de la Vérité*, Livre Premier : Des Sens, Michel David, Paris. [https://fr.wikisource.org/wiki/De\\_la\\_recherche\\_de\\_la\\_v%C3%A9rit%C3%A9/Livre\\_I](https://fr.wikisource.org/wiki/De_la_recherche_de_la_v%C3%A9rit%C3%A9/Livre_I)

PubMed. 2024. "Important", <https://pubmed.ncbi.nlm.nih.gov/?term=important&sort=pubdate>, accessed 2024-08-07.

Schmid E. 2023. Too stressed for success: The academic epidemic, *The Oxford Scientist*, <https://oxsci.org/burnout-in-academia/>.

This H. 2016. Methodological advances in scientific publication, *Notes Académiques de l'Académie d'agriculture de France / Academic Notes of the French Academy of Agriculture*, 8, 1-26. hal-01627233

This H. 2020. L'analyse critique des manuscrits et les conseils donnés aux auteurs. A propos des publications : Klebel *et al.*, 2020, Stern and O'Shea, 2019; Sarabipour *et al.*, 2019; Inrae, 2016, *Notes Académiques de l'Académie d'agriculture / Academic Notes of the French Academy of Agriculture*, 2, 1-14.

This vo Kientza H. 2023a. Shall we get rid of adjectives and adverbs in scientific writing? Not always, *International Journal of Molecular and Physical Gastronomy*, 12, 1-5. DOI : 10.17180/ijmpg-2023-art12.

This H. 2023b. Pressentir la qualité d'un article scientifique à partir de sa forme / Sense the quality of a scientific article based on its form, *Notes Académiques de l'Académie d'agriculture de France / Academic Notes from the French Academy of Agriculture*, 16(12), 1-15. DOI: 10.58630/pubac.not.a641263.

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