*Editorial article*

**Scientific writing for biomedical journal**

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Short tile: Scientific writing

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I will address the crucial aspects of writing a scientific article and, equally important, selecting an appropriate target journal for submission and subsequent follow-up until successful publication. Additionally, I will explore various interconnected topics such as scientometrics, predatory journals, plagiarism, and altmetrics. It is essential that scientific data be not only described but also interpreted and elucidated. This article draws upon my lecture “How to write a scientific article and how to interact with editors and reviewers. A Personal Experience of the Author/Reviewer/Editor” that I delivered on multiple occasions in the last decade. This paper reflects my personal insights and is informed by my extensive experience as an active author and reviewer, and since 2008, as an editor for various multidisciplinary and specialized journals in the domains of infectious microbiology and evolutionary genetics.

**1. Choice of journal and metrics**

If the journal is medical, you should present more medical data and show more medical interest and impact of your work. The scope and level of a journal should be considered. Some journals do not accept some kind of descriptive articles, some do not accept (or only exceptionally) case reports. Short notes and Letters to the Editor are sometimes easier to publish and one can put a lot of information in the online supplement.

Consider the time from acceptance to publication online first (or print version, if it matters for you). Some journals accept routine (but scientifically sound) articles with only small advances. Sometimes it is directly stated in their editorial policy that *impact and novelty are not mandatory*. However academic editors and reviewers are scientists. They may be more critical than journal policy requires.

Consider the acceptance rate and be realistic: In international journals, papers are frequently rejected without review if the journal acceptance rate is <30%. It does not necessarily depend on the size of the journal, printed or online only. Some online journals (Nature Communications, eLife) keep very high standards and can reject papers without review if the global impact, technical level, and general interest are not sufficient.

The best journals are happy to receive a high number of submissions. In this way, they can select the best papers (after rigorous peer-review). When you choose the journal, think about what *you* think and feel about your study and conclusions. Do you want your papers to be known to many and perceived as high-level research? If yes, try the top journal first.

Payment of page charges (payment per one printed page, and thus calculated after the article is accepted) or APC (article processing charges) is not equal to an easy road to acceptance especially, in the case of good level open access publishers such as Frontiers, PLoS and BMC journals. Check in advance if the fee is optional or mandatory. Your accepted article may be withdrawn if you are unable to pay. Some journals have a Submission fee; usually small, 50-100 USD, which is paid during submission.

There is a global trend towards Open-access publishing, i.e. open access for readers.However, someone should pay the cost of publishing. Regretfully, higher IF is rapidly converted into higher fees by some open-access publishers.

Consider not only the journal but more generally speaking, the publisher.How it is perceived by the scientific community? Talk to your colleagues and teachers. Some appear easier to publish but there is controversy concerning their quality of review and particular features of the article workflow, editorial practice, and the role or lack thereof of the academic editors.

Authors who have published at least one or two articles (and their emails are in open access) know too well about the journals called predatory, or, as I call them, spam-, or weed-journals. There is a lot of discussion in this regard. In particular, there is a list of journals that mimic legitimate publications by adopting their titles and metadata [https://www.nature.com/articles/d41586-019-03759-y] [https://retractionwatch.com/]. The easy way to understand how are real are the journals is to check if they are present in Pubmed and what are their metrics in Web of Science and Scopus.

A detailed explanation of scientometrics is beyond the scope of this paper however I would like to remind some basics.The most widely used classical metric at the journal level is the Impact factor (IF) provided by Web of Science (owned by Clarivate Analytics). Two-yearIF published in June 2023 was calculated as the number of citations in 2022 to papers published in 2020-2021 divided by the number of papers in 2020-2021. The journals in the databases are included in one or more subject categories. When they are sorted by IF within a category, this permits dividing them into 4 quartiles, Q1 being the top 25% of the journals. A journal may be in more than one category and it may be in different quartiles. E.g., it may be in Q1 in Infectious Diseases, and in Q2 in Microbiology. The best way is to check directly in Web of Science or Scopus about different metrics for a particular journal. Sometimes journals publish this information on their website (but sometimes it is not rapidly updated). Scopus database created by Elsevier (<https://www.scopus.com/search/form.uri?display=basic#basic>) has its own metrics (but not IF), including quartiles: h-Index, CiteScore, SJR (SCImago Journal Rank) and SNIP (source normalized impact per paper) that can be found at https://www.scimagojr.com/journalrank.php. Scopus has more diverse categories compared to WoS so a journal can be included in more categories and has more chance to have a higher Q at least in one of the categories. Scopus includes more journals and this means that it includes a lot of low-impact national journals. As a result, the threshold for Q1 and Q2 is much less rigorous and a journal included in Q3 in WoS may well be in Q1 in Scopus. When looking for these metrics, it is better to not check Q and IF by globalGoogle, Chinese *Baidu*, or Russian *Yandex* search. It can lead to non-official sources (ResearchGate, Resurchify, etc.) or outdated information. Some funding agencies perform their evaluation based on Q from WoS, some others do not make a difference between WoS and Scopus. Some journals published by good publishers are in WoS, and Scopus, they have reasonable IF (~2) but they are not in Pubmed, and to me, this means less visibility. Despite controversy about metrics, high IF means: (i) a high flow of received articles and high rejection, (ii) more rigorous review, and (iii) higher appreciation of your paper by yourself and your colleagues.

In addition to the classical scientometrics, in scholarly and scientific publishing, altmetrics (alternative metrics) is a non-traditional bibliometrics approach complementing to more traditional citation impact metrics, such as impact factor and *h*-index. Altmetrics means alternative metrics (<https://en.wikipedia.org/wiki/Altmetrics>). The term altmetrics was proposed in 2010, as a generalization of article-level metrics, and has its roots in the #altmetrics hashtag. Altmetrics calculates scholar impact based on diverse online sources, such as social media, news media, online reference managers, and so on. It demonstrates both the impact and the detailed composition of the impact. You can check your article on the journal website, and update its altmetrics yourself: write to the journal and send a reference to online citation in news media (including mentions not only in English but in your language), to update the Altmetric of your article. On the other hand, such mentions in social media, news reports, etc. are difficult to compare and assess objectively.

To end this section about the choice of journal, I would like to note that when you publish most of your articles in one journal, this makes an impression that you have a special relationship with the journal, especially if this journal is published by the author's institution. In this sense, one can’t help thinking that the paper is routine one and would not be published elsewhere and the author has chosen an easy way to publish. The same consideration concerns publishing all or almost all papers in one relatively easy-to-publish open-access publisher with very fast and non-robust peer-review (I prefer not to name it).

**2. Article writing**

The article is based on the results of the Project. The project should be well-planned, and results are expected to be interesting and novel. In reality, some experiments may fail or generate unexpected “wrong” results, some ideas may prove to be false, to begin with a basic idea, justification of the project. Nonetheless, with care and imagination, it is usually possible to make sense of limited data.

At present, English language is international language of science communication which is why the main body of the scientific journals are published in English. You need both knowledge of the subject and knowledge of the language to fluently express your ideas. Like in language learning, combination of the passive and active learning is the best way to learn, i.e. reading (others’ articles) and writing (your own), and both actions are necessary. Good English language is not mandatory but desirable, otherwise, you can send your article to the language editing company. Examples of some free online tools I use to check minor errors are Grammarly and AJE - medium quality and free. Finally, a recent development is a use of AI tools for article editing to begin with ChatGPT (https://gpt-chatbot.ru/chat-gpt-ot-openai-dlya-generacii-teksta).

Below I cite an extract from [The Use of AI and AI-assisted Technologies in Scientific Writing](https://www.elsevier.com/about/policies/publishing-ethics) (Elsevier): “AI and AI-assisted technologies in the writing process should only be used to improve readability and language of the work. Authors should carefully review and edit the result because AI can generate authoritative-sounding output that can be incorrect, incomplete, or biased. The authors are ultimately responsible for the contents. Authors should disclose in their manuscript the use of AI and AI-assisted technologies and a statement will appear in the published work. Declaring the use of these technologies supports transparency and trust between authors, readers, and reviewers. Authors should not list AI and AI-assisted technologies as an author or co-author, nor cite AI as an author. Authorship implies responsibilities and tasks that can only be attributed to and performed by humans.”

Based on my own experience, the best and smoothest way is to prepare all information in advance, i.e. tables, figures, and calculations, to make an outline for the entire article and its sections. An example of the article outline generator:<https://www.taskade.com/generate/content/article-outline>. It may be helpful to write down all various ideas, not to forget something (you can save them in the *Notes* file). When all is ready, nothing should prevent you from sitting in front of the computer and writing it down.

Although confirmatory studies are not forbidden and publishable, novelty is an important point. It may be that similar work has been done, maybe recently, in this view, check the databases again when you start to write, and when you finish. Do not be too modest but do not exaggerate your findings too much, do not underscore or disregard the previous work done by others.

Follow the structure and sections of articles in the chosen target journal. Look at any recent paper as an example. Sometimes *Methods* section must placed at the end of the manuscript. If resubmitting to a new journal pay attention to the revised structure.

The title is read first by all (editors, reviewers, readers) and it may be and sometimes must be striking if you believe your finding is extraordinary and unusual. Although the title may be just descriptive. Despite some recommendations, I would not recommend a very general title. An amazing example is the title of the BS thesis I have seen recently: the content was very precise (genotyping of clinical *M. tuberculosis* isolates in one Russian province) but the title was global (“Population structure of *M. tuberculosis*”).

Below are a few examples of the Title improvement. The title “Phylogenetic reconstruction within *Mycobacterium tuberculosis* Beijing genotype in northwestern Russia” [doi: 10.1016/s0923-2508(02)01374-8] could be made more general by removing “northwestern”. Indeed that study was based on strains from Northwest Russia but to write just “Russia” would be also correct.

The study published under the title "Detection of *embB306* mutations in ethambutol-susceptible clinical isolates of *Mycobacterium tuberculosis*: implications for genotypic resistance testing” [doi: 10.1128/JCM.40.10.3810-3813.2002] was one of my early papers. This finding was unusual since ethambutol-resistant mutations were found in ethambutol-susceptible strains. While the title of the published paper was correct, the addition of one word "Unusual” at the beginning would attract more interest from the readers.

This title was suggested by my coauthors: “Differentiation of Mycobacterium tuberculosis strains from Western-Siberian and Northern-West regions of Russia using polymorphic VNTR loci" and I edited it to be more general, with the main finding to be better highlighted. Finally, it was published under this more concise and interesting title: "Efficient differentiation of Mycobacterium tuberculosis strains from Russia using polymorphic VNTR loci” [doi: 10.1007/s10654-005-3636-5].

The other examples of attractive, “interesting”, partly exaggerating titles are as follows: “Bottlenecks and broomsticks: the molecular evolution of M. bovis” [doi: 10.1038/nrmicro1472]; “Myths and misconceptions: the origin and evolution of M. tuberculosis” [doi: 10.1038/nrmicro2165]; “On sunspots, click science and molecular iconography” [doi: 10.1016/j.tube.2018.04.004]. The most recent paper linking not high philosophy but popular cinema is "When Voldemort Meets Sauron: Treatment Considerations for Emerging Dual-Carbapenemase-Producing Extensively Drug-Resistant Pseudomonas aeruginosa” [doi: 10.1128/aac.00475-23].

A project and article should not necessarily give a final answer to all questions but may pose new questions, therefore a title may be a question itself, e.g. “Does M. tuberculosis genomic diversity explain disease diversity?” [doi: 10.1016/j.ddmec.2010.09.004].

However, in most cases, the titles are descriptive (Molecular characterisation of M. tuberculosis in Papua New Guinea [doi: 10.1186/s12866-014-0307-2]. Some state the major finding in the title. I believe this is not bad, even if there is no enigma and the reader immediately knows what your major finding is: Whole-genome sequencing of rifampicin-resistant Mycobacterium tuberculosis strains identifies compensatory mutations in RNA polymerase genes [doi: 10.1038/ng.1038]; Human T cell epitopes of Mycobacterium tuberculosis are evolutionarily hyperconserved [doi: 10.1038/ng.590].

To finish about the article title, I would remind the title of one of the most seminal papers ever published: “A structure for Deoxyribose Nucleic Acid” J.D. Watson, F.H.C. Crick [https://www.nature.com/articles/171737a0]. It was a letter just slightly longer than 1 page but its consequences are hard to exaggerate. In 1962, the Nobel Prize for Physiology or Medicine was awarded to J. Watson, F. Crick, and M. Wilkins "for discoveries concerning the molecular structure of nucleic acids and its significance for information transfer in living material". Further, in 1968, “The Double Helix”, by J.D. Watson, was published, being, in my opinion, a fascinating, inspiring, humorous, and controversial personal account of the discovery of DNA structure [http://library.cshl.edu/naturalbestseller/], translated in many languages (https://www.chem.msu.ru/rus/books/watson/welcome.html).

Apart from the title, the correct writing names of the authors is technical but critical point as these names will be provided in reference sources and databases and confusion of given name(s) and surname(s) should absolutely be avoided. Otherwise, once you start to publish, you better not change the presentation of your names i.e. either use all your given names or only the first one.

Along with the Title and authors' names and affiliations, the corresponding author(s) are also shown on the Title page of the manuscript. It is important to check in advance how many corresponding authors is allowed. Some journals allow only two or even only one.

The same situation is about so-called co-first authors, that sometimes labeled as authors with equal contribution. PhD students are sometimes required to publish a certain number of articles as first authors and for the same reasons as with corresponding authors, there is more than one person who made a significant contribution to experiments or analysis and would qualify to be designated as first author, at least technically.

The corresponding author is the main person responsible for writing. Senior authors should help junior corresponding author. An excellent and true observation: "The process of science, from fellowships to collaborations, depends as much on personalities, on friendship, as it does on experimentation“[https://web.archive.org/web/20120313094918/http://www.brown.edu/Courses/BI0020\_Miller/dh/guide.html].

Abstract. It is always helpful to immediately show to the reader (reviewer) your study briefly and logically: novelty and interest, why the subject is important. Some journals require structured Abstract: Background, Methods, Results, Principal findings/Conclusions. Some journals require to start with a sentence about the Objective (“The aim of this study was …”)

The first sentence should be interesting and catching attention, both general and specific. At the same time, it should be specific enough, not too general. I do not think that it is a very good idea to start the Abstract with a sentence that "Tuberculosis is a serious problem worldwide" unless your article is indeed about the global situation with TB. The abstract should end with some conclusion but not just repeat the already said major finding.

In the Abstract (and in the main text) it is especially important to logically link sentences using relevant linking words such as, in this sense, in this view, hence, therefore, here, furthermore, etc.

The introduction should start with background and brief and relevant information regarding the field of your study and its specific topic. However, the article is not an MS/PhD thesis and even if temping it should not be a repetition of the long review of literature. When writing about relevance, write about the relevance of your specific study not about all large area of research. Pay attention to cite and briefly discuss recent and relevant articles in the field! This is both ethical and fair and does not diminish the importance and interest of your study.

Materials and Methods should not be a lengthy description of the well-known techniques (again I repeat that a research article is not an MS/PhD thesis). There is no need to copy-paste paragraphs from Technical manuals. References to the published methods whenever possible, are sufficient. At most, it is possible to write a few words like "in brief, …” and to describe the most essential of the method in 2-3 sentences. Some detailed information can be put in the online supplement. On the other hand, if a modification of the published method was made, this should be mentioned.

Ethical approval of your study may be required if you work with animal or human subjects, and if you work with bio- or chemical hazards, perhaps GMO, etc. Ethical approval (including the date and number of the protocol and location of the Ethical board) may be given in Materials and Methods and/or at the end of the main text in the Declarations section.

The Results (sometime merged Results and Discussion) section is a very important part of the manuscript. Results should be given in all detail, and additional expanded information should be provided in the Supplement, such as raw data, e.g. all data for individual strains (in the case of human subjects all data must be anonymized/blinded). One of the statements at the end of the main text is about Data Availability i.e. you should write that the original data of this study are provided either as an online supplement (e.g. easy-to-use excel file) or are deposited in public databases. At the same time, being detailed enough does not mean meticulously repeating in the main text all information shown in Tables and Figures. Many studies are descriptive by definition and the text should present the most essential. However, Results may not be one or two text paragraphs and 10 tables/figures. On the other hand, simple and small information is suitable for ppt presentation but not for the Figure or Table in an article. Once I have seen an article with 10 dendrograms (with similar legends, in brief: Cluster analysis of drug-resistant strains based on 15-locus VNTR. or 19-locus, Beijing strains, non-Beijing strains, drug-resistant strains, drug-susceptible strains). They had no discussion but only served to count the number of clusters and the number of strains per cluster. This information could (and should) have been shown in the table at most.

Do not write long, descriptive, and hard-to-read sentences. If you have a lot of information in a table, do not just repeat it in the text but try to make concise and summarizing sentences. On the other hand, an enormous number of simple figures should be avoided. The article is not a PowerPoint presentation. Indeed, some information is better perceived as a figure, but articles should be concise, unlike PPT where figures should catch immediate attention and be easy to rapidly interpret. Instead, a figure in an article should contain enough information that the reader can read and re-read calmly.

It is commonly agreed that a Discussion should start with a general sentence or paragraph to remind the reader why you did this study and its context and importance, as well as its novelty. The information already presented in the Results section, tables, and figures should not be repeated with the same long sentences. Here, you may write a long analysis. If the Discussion is long, and if requested by reviewers/editor, it may be changed/reduced. In Discussion, you may put together different pieces of your study for example, results of different analyses performed on your strains, or your chemical compounds such as experimental model study, virulence, lethality, cytotoxicity, and make a general conclusion. You may (rather should) complement your conclusions with results from other studies, and do not be afraid if our results contradict previous results. Consider objectively the limitations of your and others' studies and how these limitations could influence conclusions. Critical assessment of your own and previously published data is extremely important. Do summarize previous studies, try to find general rules, trends, and patterns in multiple and sometimes chaotic data, not just reiterate previous studies one by one.

A limitations paragraph is recommended in any case and should be placed at the end of the Discussion.

Section Conclusions is useful but not always mandatory. Basically, it provides a summary and contains the key findings and conclusions of your study and may also mention about future research as a continuation of your study. This can also address the question from the reviewer why you did not perform some kind of experiments – because they are beyond the specific objective of your current paper and are planned in the future as a new stand-alone prospective research.

Edit carefully, at least with Word Checker. Do not use jargon, nor movie/song style: Don’t; It’s; Wanna, etc. Page numbering is essential (and frequently forgotten), and lane numbering is also frequently required

References. Follow the style of the particular journal. Cite reasonable references that you could access/read in full. Reading the Pubmed abstract is not enough. If you do not know Russian, French, or Japanese do not cite such articles. Some journals do not request to follow their style upon first submission, but still try to present your references in the same style, this makes a good impression on reviewers.

Some articles are based on projects done by scientists working in different fields of science and frequently they write their own pieces of results/discussion that are put together by the major corresponding author. All co-authors should carefully prepare their results, paying attention to even small details e.g. Figure legends and Figure content. In this sense, interaction between co-authors is important for successful data analysis and article writing. However, I suggest avoiding lengthy talks about simple sentences or words and concentrating on the essentials.

The problem of plagiarism is not limited to science. This is a verse from the anonymous author: “Your Comedy I've read, my Friend, And like the half you pilfer'd best; But sure the Piece you yet may mend? — Take courage Man, and steal the rest.” (Anon.) [https://www.poetrynook.com/poem/living-author].

When writing an article, especially its introduction and Discussion, remember not to copy-paste from the published (even your own) article as this is called Plagiarism. It is defined by the American Society for Microbiology as follows: “Misappropriating another person’s intellectual property constitutes plagiarism. This includes copying sentences or paragraphs verbatim (or almost verbatim) from someone else’s work, even if the original work is cited in the references. Plagiarism is not limited to the text; it can involve any part of the manuscript, including figures and tables, in which material is copied from another publication without permission and attribution. An author may not reuse his or her own previously published work without attribution; this is considered self-plagiarism.” [http://jcm.asm.org/site/misc/journal-ita\_edi.xhtml#02].

Simple reference is not enough in case of exact copy-paste, and quotations should also be used, however, it would be absurd and just impossible to compose a discussion from multiple paragraphs all in quotations. Although this idea is being discussed.

Summing up about plagiarism, try to rephrase, or re-write. Best of all, even if this is challenging, especially in writing reviews: write in your own words coming from your head, and tell the story yourself!

Permission to reprint. When reproducing a figure from another article (even your own), check the rules of the publisher how to reproduce, permission, etc. In many journals, when you publish an article, you transfer Copyright to the publisher (in open-access journals you keep your copyright). Simple reference is not enough and should always be complemented with “reprinted with permission”. Some journals ask authors to obtain such permission, which is easy, and free (if you republish a figure from your article). For example, open the article, click on Tools, and select Request Permission. Or open the article, and click on Get rights and content. These formal details depend on the publisher's website. A couple of examples of the legends for republished figures: Reproduced with permission from ….. et al. (2007), Copyright Wiley-VCH; (ii) Reprinted from ref. … by permission of Elsevier ©2009.

When the article is submitted, it gets a status "submitted to journal" or "technical check". Be ready that journal staff may write back and ask for some formal and technical clarifications or amendments. Sometimes indeed you may have omitted to mention some important information, e.g. about ethical approval, about data availability.

Declarations are required by all journals and include different additional information such as Conflict of Interest (COI), Ethical approval, Author Contributions (either informal or more formally formulated using CreDit terminology), and Data availability.

Preprints.Preprint servers are online archives, or repositories, containing works or data associated with various scholarly papers that are not yet peer-reviewed or accepted by traditional academic journals. Preprints can help you to: (i) improve the paper if other experts read and comment on it, some advice may be useful; (ii) show the author's priority in the field; (iii) best sell the article. If the paper is rejected by one journal, other journals may be invited to resubmit to them. I have recently noticed that preprints are already included in Pubmed and have doi (but this concerns NIH [USA] supported research). However, the funding agencies (at least some of them) do not consider preprints as true publication, because it is not yet peer-reviewed.

**3. Submission**

Cover letter. You may write a long (up to 1 page) or concise (2-3 sentences) description of your study, especially if requested by some journals, also you may highlight some important special points: e.g., mention that 1st author is a PhD student and that you would be grateful for a faster evaluation. Or you may highlight very briefly the importance of your key findings. Or you may highlight opposed reviewers.

Recommended reviewers. Do not give all possible reviewers from your own country or city. Even if they are all relevant experts, they may be not independent and may be known to you (most likely the case). It is advised not to include your recent coauthors as possible reviewers. Personally, as Editor I rarely invited recommended reviewers when sending first invitations to review. At most, I invite reviewers recommended by authors only after other invited reviewers do not respond.

**4. Decision and reviews**

Nowadays most journals have online submission system that can be used by authors to submit and to follow-up their papers. The submitted papers have a Status information that tells the author about current situation with her/his article. The main variants of the Status of the article are: Submitted, Quality check, With Editor, Under review, and Decision pending (all reviews received). The article may be marked as With Editor but the date can change, which means that it was assigned first to Editor-in-Chief, and a few days later – to the Associate Editor. If this status does not change for several weeks you may write to the journal and express our concern that your paper is still not Under review.

Different journals (even within the same publisher) use different words to define status. Some journals feel it fair to give detailed information, other journals label the paper as Under review immediately after submission, so the author cannot follow changes of its status. There are different views on how transparent journals should be in this sense, however, I would prefer to let the authors know about all specific steps within the journal workflow.

On the whole, after 6-8 weeks of waiting (if your paper is Under review) you may remind the journal and ask for an update and when you expect a decision on your article. One should keep in mind that while the journal staff is paid staff of the Publisher, the EIC, Senior, and Associate Editors are first of all, scientists (although EIC and Senior Editors may have contracts with the publisher) and have their own job and life (and holidays). Submission in July-August is especially challenging and requires patience from the authors. The journals cannot (should not) accept papers as is, and critical comments from reviewers are mandatory, 2 reviewers are a normal number although some papers are decisioned based on only one detailed review. Finding reviewers is frequently a difficult task even if it is aided by various search tools implemented in the online journal system.

One should not be too depressed by rejection/or huge major revision. The first impression may be (partly) wrong, in case of revision. You may write directly to the editor if you do not understand the comments. It is possible that reviewers requested opposite things, and the editor did not make his/her recommendation on which course to follow. Reviewers may request either new experiments and analysis *versus* more focused study, or recommend to shorten *versus* expand. At this stage, advice from the handling editor is required.

Decision letters are based on templates indeed, more and more elaborated but still templates. Do not take too directly their content. Immediate rejection is painful but it is also helpful as the author does not waste his/her time. High-impact journals have a very low acceptance rate 10-15%. When submitting to such a journal it makes sense to adequately estimate the level of your article and whether it is worthwhile to waste 2-3 weeks to receive a rejection without review.

**5. Revision**

Revision (even the minor one) requires careful and point-to-point correction to address all comments from reviewers and editors. Additional experiments may be required, and in such a case, the author should ask for an extension if such experiments are time-consuming. In addition, in some cases, most of the text should be re-written and extensive language editing may be required.

On one hand, revision should be done fast, sometimes it is requested by the journal and the deadline may be short, within 2-3 weeks. If the paper is sent back for re-review it is more convenient for a reviewer who still remembers its content and can give his opinion on the revised version rapidly.

On the other hand, do not submit a revision within 1-2 days if the Editor wrote that the revision is major and recommended to take your time and do it carefully. A hasty submission of the revised paper within 1-2 days would negatively impact the editor since the high-quality major revision simply cannot be performed within such a short time.

Some relatively new publishers function as business machines and put short deadlines on all steps of their pipeline, e.g. 7 days for major revision. In this sense, I like the old style of the ASM journals that continue with the 2-month deadline for revision.

It is advised to address all comments in a careful way, not formally. If a reviewer recommended to cite one or another article, this does not necessarily mean that these are his own articles. In any case, this does not mean that the reviewer would be happy if you just add a reference to these articles somewhere in the text without any additional discussion. These newly added references must be placed within context, perhaps the text should be revised and these papers should be discussed.

In addition to the careful editing of the text, you should provide detailed and point-to-point answers to Reviewers and answer all questions and critiques. The paper may be sent for re-review. Reviewers do not like short answers to their long comments. The answers should be detailed, clear, and precise; the vague and incomprehensible language of politicians and bureaucrats should be avoided by all means. It is also advised – for each answer - to refer to particular page and line numbers in the revised version. Even if the reviewer or editor will not check this against the revised text, this shows the author’s diligence and care. Do not say in the article or rebuttal that *other*s did or wrote like this since you are not other. Do not repeat in each instance: *thanks a lot, thank you very much*, even to simple comments. Be careful when you contradict, explain carefully why you disagree. There is a polite way to write: “*We respectfully disagree with reviewer* …”.

The author (regardless of his scientific level and/or administrative weight) must clearly understand that, although peer review is called peer-review i.e. author and reviewer are supposed to be peers and equals, in reality, the author and reviewer are not in an equal position. In fact, the author acts as the defendant, the reviewer as the prosecutor, and the editor as the judge (but also the prosecutor, if he understands the topic of the article).

Some journals request a Revised manuscript with track changesto see exactly and objectively how you revise. You may either use the Word function Compare two versions and highlight changes (but sometimes such manuscript with all track changes is heavy to read), or you may just mark up all changes made in response to reviewers’ comments.

After you have almost submitted, you should check the merged PDF, before you click on Approve submission. This merged PDF should be checked very carefully to make sure that files were correctly converted to PDF. For example, some traces of editing may remain, or there may be a problem with converting symbols, or, the cover letter may contain track changes.

**6. Resubmission to a new journal**

If the article is rejected, it may be resubmitted to another journal. Many authors prefer to immediately resubmit the same files which makes sense if the paper was rejected without review. However, if the paper was rejected after peer review, critiques made by earlier reviewers should be taken into consideration. The new reviewers can do the same. In fact, new reviewers may be the same, especially in the case of a very specific topic.

Never submit the same paper to different journals simultaneously! First, this is just forbidden, second, the paper may be in the hands of the same editor or reviewer who will report such misconduct and the paper will be rejected by both journals. I do not know if the journals have a blacklist of such authors. Recently, large publishers work together and check new submissions not only for plagiarism, but also for duplicated title.

The study may be good but the topic (e.g. pathogen) is unpopular, of low priority. Be ready for several rejections/resubmissions. Our *C. diphtheriae* paper [doi: 10.1002/biot.200700035] was rejected 4 times, despite little or no critiques at all. Finally, it was published in a newly launched journal (not very selective at that time in terms of scope) but later cited in Nature Reviews Microbiology, Nature Reviews Genetics, and Lancet Infectious Disease.

**7. Other remarks**

The story of your article is not finished when it is published. After your paper is published, promote it in the news, write a press release, and send it to the newspapers or popular science websites. Post your paper on your own website, or on social media. Even if you do not like this unmodest self-advertisement, this is much appreciated by your institution and by your funding agency. Writing a press release is not easy. It should be short, interesting, and sufficiently understandable for ordinary people, at least to scientists who work in another field. Such press releases should be sent to mass media quite fast, a few days before the online publication of your article (but with embargo until your article is published), and no later than 1-3 weeks after.

In conclusion, this article is not intended to be a comprehensive guide to writing and interacting with scientific journals. Further reading on scientific writing is abundant. There are many available guidelines, more or less formal or informal. They reflect their authors' experiences and opinions and may differ. *Nature Briefing* (https://www.nature.com/nature/articles?type=nature-briefing) is among the best to communicate scientific news from various fields to the broad science community. Examples of the useful Russian-language web resources are in my personal opinion, PCR.NEWS, T-invariant.org and Biomolecula.ru.

**Conflict of interest.** I am serving Deputy Editor-in-Chief of Russian Journal of Infection and Immunity, Senior Editor in BMC Microbiology (Springer Nature) and Infection, Genetics and Evolution (Elsevier) and Academic Editor in PloS One. I also hold a passive position of Editorial Board member in International Journal of Mycobacteriology (Elsevier, Wolters Kluwer), Biomedical and Biotechnology Research Journal (Wolters Kluwer) Pediatric Investigation (Wiley), Acta Microbiologica Bulgarica (Union of Scientists in Bulgaria).

**Acknowledgments.** This article is based on my lecture given on several occasions as invited professor in different scientific and medical institutes in China in 2013-2024. It presents my personal views and is based on my long-term experience, since 2001, as an active author and reviewer and, since 2008, as Senior Editor, Editor, and Editorial Board member in the journals published by major international publishers (BMC/Springer Nature, Elsevier, Wiley, Wolters Kluwer, and PLoS). My current publication record at Clarivate Web of Science database can be viewed at <https://www.webofscience.com/wos/author/record/331662>.

I am grateful to all colleagues whose articles or personality inspired some parts of this presentation. I acknowledge the cited web resources for additional information. Some of my considerations are personal and perhaps too critical: they reflect only my views on the subject but no offence was meant in any case, with regard to any journal or publisher. On the other hand, any mention of the particular journals or publishers is by no means their promotion. All journals, publishers, web sites are cited only as examples.