Journal of BUON **10:** 319-322, 2005

SPECIAL SERIES

Good Scientific Practice

Part VIII. Being a peer reviewer – you like it, or you hate it?

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Key words: good editorial practice, good scientific practice, peer review, professional ethics, publishing, scientific

"A reviewer is one who gives the best jeers of his life to the author"

Anonymous

"Peer review is to science what democracy is to politics. It's not the most efficient mechanism, but it's the least corruptible"

Sir Peter Lachmann [1]

I have already written about the peer review process, sometimes about the technique of reviewing [2], sometimes about professional ethics [3,4], and sometimes mainly from my personal point of view [5]. Then, why to write again about peer review? Because the review process is currently scrutinized, its flaws emphasized [6,7], and sometimes rigorously criticized [8-10].

The first among pitfalls of the peer review system is its subjectivity [11], but also other are cited, such as substantive time delay, poor and inefficient reviewers, bias, envy, and the low priority afforded to the papers by reviewers [12].

However, it is recognized that reviewers are the heart of the peer review system, that reviewers serve as gatekeepers of science, and that no editor can get along without them [13-15]. This does not imply that the process cannot be improved, and several guidelines, codes of conduct and policies are already introduced [16]. Moreover, several international congresses on peer review in biomedical publication were held thus far [17], and the fifth is scheduled for this year [18]. It seems that there is no need to radical changes, since, "with all its flaws, editorial peer review is still superior to all the alternatives" [19], but simply to increase attention to the basic ethical principles of the professional activities including peer reviewing [20].

What is peer review, anyway? "The primary role of the peer review process is to ask experts if the paper is important, if it is quality work, and if it can be improved" [21]. It is used as a judge of validity, importance, and quality of presentation [22], by providing expert opinion regarding the quality and appropriateness of research. Therefore, it is the reviewer's job to examine how well the study was set up, executed and reported, and to help authors to improve their manuscript. It goes without saying that this is oversimplification, since the quality is a difficult issue to clarify [23]. Moreover, the assessment of a manuscript is a delicate and also a time-demanding process, and usually not compensated financially or morally; even more, in small scientific communities, where it is extremely difficult to keep the anonymity of reviewers (blind review process), the reviewer may face rather unpleasant situations [5].

Then, why do reviewers commit their time, knowledge, and experience to review manuscripts of authors unknown to them, and with no visible appreciation for such hard work by anyone other than the editors? Because they stay abreast of the most current

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information and research in the field [21], and because they are convinced that their duty is to help authors to improve their manuscripts in terms of both their scientific quality and written presentation [24].

Peer review – personal view

Long ago, I was delighted when I was asked to review an article for the Serbian Archive of Medicine. That was because I knew that reviewers were recruited among the most prominent scientists in the field, so I was flattered to be part of this "jet-set".

Now, more than 20 years later, frankly speaking, I rather hesitate to do this job. More than once, my first impulse was to send polite apologies to the editor-in-chief, and decline from reviewing. But, after second thought, I usually accept. This is because I regard reviewing for a scientific journal as an important professional activity. And that's the reason why I undertake this task – and try to do it properly…..

Seven mortal sins

(that must be avoided)

It is assumed that peer reviewers, being scientists, will be honest, logical and impartial while reviewing, but they are also human beings and therefore not exempted from subjectivity. Being aware of that, and also of the strengths and weaknesses of the process, whenever I accept to review, I try to do the job professionally and ***ethically***. That's because I share the belief that reviewers (together with editors) serve as gatekeepers to what is published in scientific journals, and this responsibility I do not take lightly [23]. Below are several breaches of publication ethics that must be avoided at any rate.

Incompetence. Editors heavily depend on the expertise of their reviewers. That is why I, whenever I feel insufficiently competent to review a manuscript, inform the editor about that and, if possible, I suggest the colleague who might do the job instead. The editor will undoubtedly appreciate such an attitude.

Plagiarism. Plagiarism of the manuscripts under evaluation is unpardonable wrongdoing, because it undermines the reputation of the profession. Unfortunately, such abuses of power did occur sporadically in the past [25]. It is imperative for editors to remove reviewers who have committed such sin from any further association with their journals [26]; moreover, these editors are expected to inform their colleagues-editors about the case, and also to publish it [27].

On the other hand, several cases of fraudulent publications were uncovered recently [28]. Since they were published in reputable journals and therefore had been scrutinized by many peer reviewers, the role of reviewers as gatekeepers of science was questioned [1]. However, it is not the duty of reviewers to suspect fraud: peer review cannot guarantee the correctness of the results. But if such a suspicion arises, the reviewers are obliged to inform the editor-in-chief [29].

Bias. The most common complaint is of bias against unorthodox research, lesser known institutions and lesser known (younger) researchers. Sometimes the opposite occurs - cronyism, which is more likely to appear in small scientific communities (so-called scientific periphery), where is much easier to unblind the peer review process. As reviewers are only human beings and therefore prone to bias, they should keep in mind this possibility, and try to suppress it.

Unreliability. Editors are sometimes disappointed by the lack of reliability of the peer review process. The lack of reliability reflects either a lack of competence or a lack of efforts from reviewers [30]. I personally always try to avoid these: whenever I feel insufficiently competent to review a particular manuscript, I write to the editor-in-chief and recommend somebody else. I also avoid the latter: if I accepted to review, I try to do the job as well as possible. Two-direction recommendations (e.g., opposite recommendations addressed to the editor and to the author), and the breach of confidentiality also indicate the unreliable reviewer.

Undisclosed conflict of interest. Although conflict of interest (COI) is not the only bias factor, I always inform the editor if I feel that I have a conflict of interests (personal, academic or financial) [31]. If I am related to either the work presented in the manuscript under evaluation, or with its authors (provided the review is unblinded), I propose to exclude myself from reviewing. However, since declared COI does not necessarily disqualify the reviewer for reviewing, it is up to the editor to decide about the seriousness of COI and its potential for bias.

Unfairness and impoliteness. Since peer review is intended to be author-friendly, e.g., to help the author to improve his/her manuscript, it should be kept in mind that ***collegiality*** and ***civility*** are important elements of professionalism [20]. It is surprising how often editors report on unfair attitude of reviewers, the most important issue being attacking the individual rather than disputing or debating an idea (*ad hominem* attack). There is no excuse for such unprofessional attitude, which reflects ethically problematic persons, and editors should avoid such reviewers by all means.

Equally often, editors are dissatisfied with the tone and style of otherwise structurally correct reviews. There are many reviews that are qualified as "mean-spirited", "cursory" or "overly caustic" [20]; such commentaries discourage authors, and it is the duty of the editor to eliminate impolite and arrogant comments of the reviewer, in order not to harm the dignity of the author. In any case, intimidating commentaries and vehement criticism does not serve the cause of science [32].

Delay. The reviewers who do not adhere to time constraint (usually 3-5 weeks) [33], significantly slow the dissemination of knowledge by increasing the manuscript handling time. Timely peer review process is important: for the time being, there is no better method than timely reviewing to ensure a timely publication of new scientific information [34]. Therefore, an overdue response of the reviewer is a grave violation of ethical rules, and the editor should remove such a reviewer from his files.

Conclusion

Despite the many aforementioned shortcomings, "the peer review process is the best we have" [22] and no effective alternative method of review exists [12]. Therefore, peer review should be neither demonized nor deified [7], but used with full awareness of its merits, advantages and limitations.

This does not mean that the process cannot be improved, and several ways to achieve this goal are proposed [25, 34, 35]. A very important duty of the editors is to educate [26, 36] their potential reviewers in the communication skills: punctuality, sincerity, professionalism, responsibility, honesty, politeness, use of arguments in disputes, and concentration on detail and clarity. This is author-friendly editorial policy - all in order *to help authors improve their work*. Many editors in my surroundings have made, and are making constantly, such efforts [37-39], all in compliance with the implementation of the rules of good scientific practice in small scientific communities [40]; this article is a modest contribution to these.

Acknowledgements

I thank my colleagues – reviewers for scientific journals – Gordana Bogdanović, Ljubomir Todorović, Pavle Milenković and Athanassios Athanassiou, who strictly adhere to the principles of science ethics when conducting peer review. I am also thankful to Mrs. Gordana Todorović for improving the language.

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