**A proposal for the peer review procedure for funding decisions**

To the Editor,

In this letter, we propose a new option for the peer review procedure for funding scientific proposals. We recall some findings of the second Publons report (Hayes & Hardcastle, 2019) without providing a broad overview of current procedures at different agencies, and come straight to the point.

The second Publons report contains the results of a large survey among scientists and funders. It sketches the framework in which peer review takes place and points out the continued relevance of the peer review process.

Among the conclusions of this report, we mention that many researchers are dissatisfied with the transparency of the grant peer review procedure. They believe that one way to improve the process would be to give greater recognition to reviewers. Different alternatives, such as “credits” or cash payments are possible options. The idea of “credits” is that responsible reviewers who contributed constructive comments should be able to claim credit and hence build up a positive reputation. Hopefully, this would improve the review process (Moussian, 2016; Hayes & Hardcastle, 2019). Although cash payments may seem an attractive driver of reviewer participation, the second Publons report (Hayes & Hardcastle, 2019) found that cash payments are not a significant means of reviewer motivation.

*Our proposal*

Based on the Publons survey report (Hayes & Hardcastle, 2019) and observing the existing strong trend toward open, transparent, and interactive (between reviewers and proposers) peer review, we propose a

possible new idea to counter the feeling from many reviewers that they offer their services without any intellectual return and from submitters that they do not get enough response.

Our idea assumes that project proposals are first sent to experts (the reviewers). These experts score and comment on the proposal, and in the next step, a panel decides on the fundability of the project, taking these scores into account.

This idea is a three-step procedure.

Step 1. Submitters of project proposals may indicate if they are willing to expand the team.

Step 2. Reviewers score and comment on the project proposal as they would do otherwise, but may moreover indicate their desire to join the team (if submitters had indicated this option).

They show this desire explicitly by explaining their skills (fitting within the project) and, at best, stating that they know a solution for something that was still open or had to be investigated in the project proposal. This can be done anonymously or signed. Implicitly they show their skills by writing excellent reviews.

Step 3. Submitters accept or not. If accepting the reviewer, his/her name becomes known and he/she becomes a member of the team (probably after some extra negotiations). Hence, if the team consisted of 5 members, it now consists of 6 members.

In this way, part of the report of the reviewer becomes an actual part of the proposal to be judged by the panel.

*Advantages of this proposal*

Based on the problems identified in the Publons report (Hayes & Hardcastle, 2019), we think that this suggestion offers some answers to these problems. We note, especially, that the whole scheme acts as an incentive, where all parties (submitters, reviewers, funders) and science itself benefit.

a. Reviewers

Reviewers get the opportunity to be part of a project in which they are interested. Their skills can be put to good use and they can contribute to the advancement of knowledge. Their part will be fully recognized and acknowledged not only as an anonymous reviewer but also as a participant in a project.

b. Submitters

In the current scheme, submitters often complain about the quality of review reports. In this proposal, there is an extra reason for (some) reviewers to write constructive reports. If reviewers intend to join the project, they will tend to provide convincing evidence of their capabilities. Of course, we assume that reviewer reports are forwarded to submitters, as part of more openness. Moreover, less-established submitters may profit if a highly recognized reviewer joins their group. Such a scientist may add social capital and experience, and hence increases the applicants' chances to gain financial support. Reviewers who join a team may function as wild cards or jokers. They add something extra to these grant proposals. Their willingness to collaborate can be considered by the committee members as a token of worthiness and lead to a higher ranking among project proposals.

c. Funders

Funders may gauge proposals based on more factors and better-founded comments from reviewers. These will help them to perform the selection more efficiently and to fund excellent proposals. Moreover, one could say that by allowing reviewers to become members of the submitter's team, funders extend their original role (of just providing funds) and make their programs more attractive to the scientific community.

d. Scientific progress

Even if the proposal is not accepted, submitters and reviewers may come together (if they want to) and submit it next year, or sooner to another funding agency. In any case, science benefits. We note that nowadays in some countries, such as China, reviewers and proposers are not allowed to contact each other.

*Possible objections to our proposal*

Returning to the proposal, we note that submitters may indicate that they do not want an extra team member. This may be because they think that their team is perfectly balanced (which is often the case in larger teams with participants from different countries) and can solve all problems, or they just do not want to include "strangers". This is perfectly acceptable.

a. Related to the recognition of reviewers

Is this proposal really an incentive for reviewers? Don't they prefer other forms of motivation such as reduced teaching duties or fewer administrative tasks? Different reviewers may prefer different forms of recognition for their work.

*Answer.* This is a valid objection, but then we do not try to solve all problems related to the peer review procedure for funding decisions. The

proposal provides one possible form of recognition for reviewers' work. It has the extra benefit to advance knowledge and collaboration.

b. Related to submitters

Submitters may state that they are willing to expand the team, but in reality, do not have such an intention. They just want better reviews and maybe new ideas.

*Answer*. Misuse happens everywhere so this may indeed happen, but note that in the current situation, reviewers also "lose" the ideas they put in their reports.

c. Related to funders and funding

We note that submitters and reviewers are in an asymmetric power relationship as submitters depend on reviewers' scores and comments. What would happen if they reject a willing reviewer as a potential collaborator? Reviewers could be upset and retaliate later.

*Answer.* This objection is less important in large fields, but, deserves consideration in small research communities. In this case how the funders select the reviewers for the proposal and how the funder will judge the credibility of the reviewers must be carefully deliberated.

d. Related to science at large

Only the best projects would attract new collaborators, hence leading to a Matthew Effect.

*Answer.* Maybe, but only experiments will tell. On the one hand, it could be that the reviewer does not want, or is not able (e.g., because of a full schedule) to join an excellent project proposal. On the other hand, a

reviewer could see the potential of a less-than-excellent project and wants to use this opportunity to improve the proposal.

*Conclusion*

Our proposal promotes collaboration, stimulates new ideas, and may help to advance knowledge. Moreover, it invites experimenting. One could say it is like the sandpit model which has already been applied to some pioneering or interdisciplinary programs (Maxwell & Benneworth, 2018). Our proposal extends this model to the review process.

*Acknowledgment*. The authors thank the reviewers, especially for the list of objections. They further appreciate useful remarks by Raf Guns and Sandra Rousseau. Yuxian Liu thanks Liexun Yang from NSFC for forwarding her the second Publons report (Hayes & Hardcastle, 2019) on which this proposal was inspired.

*Conflict of interest.* Ronald Rousseau belongs to the distinguished reviewers board of the journal Scientometrics as a Price Medal awardee.

*Funding*. The authors did not receive any funding for writing this letter.

**References**

Hayes, M., & Hardcastle, J. (2019). *Grant Review in Focus.* London: Publons.

Maxwell, K., & Benneworth, P. (2018). The construction of new scientific norms for solving Grand Challenges. *Palgrave Communications, 4*(1), 52.

Moussian, B. (2016). Taking peer review seriously. *EMBO Reports*, *17*(5), 617–617.

[1]Yuxian Liu, and [2,3] Ronald Rousseau

[1]Tongji University, Institute of Higher Education and Tongji University Library,

Siping Road 1239, 200092 Shanghai (China)

yxliu@tongji.edu.cn

[2]KU Leuven, MSI and Facultair Onderzoekscentrum ECOOM,

Naamsestraat 61, 3000 Leuven, Belgium

ronald.rousseau@kuleuven.be

&

[3]University of Antwerp, Faculty of Social Sciences,

Middelheimlaan 1, 2020 Antwerpen, Belgium

ronald.rousseau@uantwerpen.be