

## ***Interactive comment on “Joint Editorial “On the future of journal publications in hydrology”” by G. Blöschl et al.***

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I will be terse and post some comments to ponder, with the hope that these will be helpful to the community at large:

1. Productivity: The water problems have become increasingly severe in all parts of the world if we consider both water quality and water quantity as two important facets of the problem. The world population has increased exacerbating the problem but as a result the number of people looking at these problems has also increased. With the increase in the significance of the challenge, the number of people interested in addressing the problem, and the resources that are directed, one should expect that the number

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of submissions to the journals will increase. This will likely out run the productivity increase per person attributed to "publish or perish" incentive/threat that are attributed to bibliometric indices. There is need for more careful analysis before such generalized statements can be accepted.

2. On the issue of generalizability of hydrologic results, there has to be significant latitude in interpretation. I believe the days are gone where laboratory driven research, where a few degrees of freedom were excited while other were held constant, were the basis of formulation of principles that were then applied broadly. While laboratory based studies hold their place for scientific investigations and validation, more and more studies are conducted in "natural laboratories" where nearly all degrees of freedom associated with the dynamic interaction are active. As a result, a lot of these interaction are place and context specific. It is only after several related studies can one draw generalized principles. However, a single paper cannot be expected to cover sufficient number of diverse sites to merit publication. The real challenge lies in understanding the significance of the findings, even if within a site-specific context.

3. On the issue of data and models, the journals should adopt a policy that scientific results should be reproducible. It should be the onus of the authors to make any and all data and models available to anyone interested in reproducing the results. It is a starting point for learning and advancing the field. The policy of this type will overcome the limitations of "proprietary models and data" and force policy changes in organizations so that they are able to publish. The biological community has already adopted this with significant sequence where they require all gene sequences to be submitted to a database prior to submission of a paper for review.

4. Impact factors, although celebrated, should be viewed in context. Given the "place specific" manifestations of the phenomena, often publications take much longer to prepare and submit and we lose out on the 2-year window on which the impact factor is computed. The field itself doesn't move that fast because it takes effort to verify the applicability of the results in a new situation/setting and then build on the results.

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Furthermore, given the large number of publications in the field, it is difficult to keep up with the new articles and adopt them quickly in ongoing research to provide justice to their citation. As a result older articles get cited more often than new ones. Additionally, hydrology to some extent is an applied field. Therefore, many practitioners use the outcomes without having the opportunity to cite the articles. One needs a non-academic view of assessing impact of research that is not dependent on metrics that are unable to draw out the diversity of the ways in which an article has an impact. One has to adopt a more diverse view of "impact" of an article and acknowledge the "impact factor" has very limited ability to reflect this diversity.

5. To ponder the issue of open access one needs to take the following into consideration. Journal publishers enjoy an incredible advantage: they do not pay for the research that is published, the authors often pay for the articles to get published, the editors provide a nearly cost free service, and the reviewers are not compensated. Almost all costs lie in the editorial support, production and marketing. One needs to question and evaluate the cost structure and profit margins of the publishers before thrusting cost on the authors or readers. When the cost is shifted from readers to authors (that is the only way open access will work) the published articles are tantamount to "advertisements." Is this a suitable culture? There are many new journals that advertise themselves as open access and invite publications that contain at least 20% new material. Isn't this a culture that is detrimental? I am all for open access and advocate it strongly, but we need cost structure and business models that guarantee the quality of publications and a culture that supports authors and readers. I must say that this seems to be less and less so.

Each of the above issues could be elaborated in lot more details, but hopefully the ideas come across.

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