

Response to: Open Debate article “How Bibliometric Indicators Should Be Used to Assess Excellence in Science and Technology” by Nicolini C. 2016

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This section opens the debate on the article written by the Editor in Chief Academician Professor Claudio Nicolini in the third issue of Volume 2 of NanoWorld Journal in 2016 at pages 35-40, where the Journal Impact factor values included in the proposal article concerns years (2014-15).

Response by Prof. Eugenia Pechkova, Genova University, Italy

To my opinion the present paper is aiming to break the vicious cycle created nowadays in scientific research community, which includes following actors: scientists - institutions - journals - funding agencies and finally, governments. All parties are seriously involved in the mafia-patterned organization, which created the non-independent indicators for future publishing and funding selected scientific groups, institutions and facilities, and often these decisions are made right on the government level. I think that the situation now is became more dramatic, because the involvement of scientific journals in this cycle is more pronounced than before, when the journals were more independent (e.g. decades ago). Today, the indicators result in funding and the journals play the profound role in corrupted pathways, accepting absurdly high numbers of authors and affiliations even for routinely research papers, never occurred before. In many cases, the performed results cannot justify such a high number of authors (more than 50) and involved institutions (more than 10), even with contribution statements required by the journals. Moreover, the same research is often multiplied in several prestigious journals, resulting in replication of the same already well established arguments by the same research groups, while innovative and not enough established research have a hard time to enter in the cycle, often voluntarily excluded by the referees from well-established groups. The indexes are coming to the forefront also in the academic carrier, and the real interest for science is often absent already among the young scientist and students, busy with indexes calculations without real attention of the quality of their research. The future of science appears in this light very dark. The present paper tries to make sense in the indexing system and possibly to exclude the indicators from this dangerous cycle, making this issue more independent and equitable. I suggest to publish the manuscript as a “test-case” indicating to the overall tendency and suggesting the possible solution to this important problem.

Response by Dr. Nicola Bragazzi, Genova University, Italy

I think that the topic of the manuscript is highly interesting and falls within the objectives of the journal. I highly and sincerely appreciate the efforts made by the author to overcome the limitations of contemporary usage of bibliometric indices. Althouse et al. points to the average inflation 1.6-2.6% in the period 1994-2005 and this inflation tendency is complex and depends on a wide array

of factors. I would suggest to use a time-averaged or weighted bibliometric index that takes into account variation throughout time.

Response by Prof. Christian Riekkel, ESRF (Grenoble), France

The suggestion of a bibliometric indicator scheme based on "objective" indicators for ranking scientists is useful in view of deficiencies of the current ranking system. An algorithm-based evaluation scheme for career advancement or grant decisions will, however, be only one among other criteria depending on the personal qualities of the candidate, institutional, administrative... factors. I would therefore not be too optimistic that it will be possible to introduce fully computer-assisted evaluation criteria. It would also be very interesting if one could use the proposed "objective" bibliometric indicator scheme to better reveal emerging science trends as compared to the current bibliometric indicator scheme.

Response by Dr. Anil Thakoor, JPL (Pasadena), USA

So, the whole premise of the paper applies to only a certain class of science/technology practitioners primarily in academia, which would be ignored if not explicitly mentioned in the paper. Furthermore, it is also true that employment, promotion, tenure, as well as funding decisions, even in academia, are often based on a variety of attributes of the individuals, as they should, publication record being only one of such attributes.

Response by Prof. Carlo Ventura, Bologna University, Italy

I fully agree that the current situation in the handling of manuscript submission and in the criteria underlying Journal ranking is too often based upon the "unfolding" of lobby-associated judgements, which transcend the frank and honest assessment of the value of submitted research. More than this, we're facing the crazy "up regulation" of IF in more than one journal that very likely becomes the forum to establish more reductionistic criteria within crucial issues for the future of human health or wellbeing, (i.e. cancer and regenerative medicine). While at a first glance NWJ may not appear specifically suited to bring the above issues to the attention of our audience, it is also true that, given the open-minded

and wide-ranging interests of our journal, we should indeed turn the lights on "out-of control" criteria that are emerging in the assessment of research(er) value, a trajectory that may ultimately lead to a "misuse" of Science.

Response by Prof. Giuseppe Zanotti, Padova University, Italy

The paper arises several relevant questions about the methodology the bibliometric data are considered, and as such it is interesting. On the contrary, if you consider the IF of the year the paper was published, I have other papers published on journals with higher IF at that time (and much lower now). Finally, consider a concrete example, the comparison between Nature and J. Biol. Chem. The IF of the latter is much lower, nevertheless the biochemical community has a high consideration of JBC. The reason of the low IF of JBC is that it accepts papers that, despite being relevant in their field, are not very fashionable and so they receive few citations. A second consideration is related to the fact that in this analysis, only the IF is considered, and not the citations. The latter are more significant: a paper published in a journal with a very high IF, but that receives few citations, has less impact than a paper published in a journal with lower IF, but that receives more citations. Finally, the idea of considering only the first author, and not the last, is a way to privilege young authors. In fact, generally at the beginning of the career the first authorship is more frequent, whilst at the end the last authorship becomes more common.

Comments from Editor in Chief Academician Professor Claudio Nicolini

It must be remembered that over the total 21,488 Journals available in ISI Web of Science masters list only the very best included in the Number of Journals in Science Citation Index (SCI) being 3.747 utilized as key references for identifying total citation and total number of first author papers belonging to 10 out of 10 decile. Furthermore, in July 2016 at New York Thomson Reuters announced that it has entered into a definitive agreement to sell its Intellectual Property & Science business to private equity funds affiliated with Onex Corporation and Baring Private Equity Asia with the sale being subject to regulatory approval and customary closing conditions.