

## SCIENCE COMMUNICATION: FLAWED CITATION INDEXING

Emilio Delgado López-Cózar,<sup>1,2</sup> Nicolás Robinson-García,<sup>1\*</sup> Daniel Torres-Salinas<sup>2,3</sup>

<sup>1</sup>Evaluación de la Ciencia y de la Comunicación Científica (EC3), Departamento de Información y Documentación, Universidad de Granada, 18071, Spain. <sup>2</sup>EC3Metrics, Granada, 18002, Spain. <sup>3</sup>EC3, Centro de Investigación Médica Aplicada, Universidad de Navarra, Pamplona, 31008, Spain.

\*Corresponding author. E-mail: elrobin@ugr.es

---

We used a strategy similar to the one used by J. Bohannon (“Who’s afraid of peer review?,” *News*, special section on Communication in Science, 4 October, p. 60) to uncover the dangers encountered in Open Access bibliometric tools offered by Google Scholar. We uploaded fake documents authored by a non-existing researcher to the Web to test the capacity of Google Scholar Citations and Metrics to detect false documents and citations. As a result of these documents, the number of citations received by our research group was boosted, affecting the Google Scholar profile of 47 researchers and 52 journals (1). The main problem is that these tools rely on automatic indexing, retrieving any document uploaded to an academic web domain. The controlled environment in which scientific knowledge is reasonably well controlled by peer review and journal selection processes has shifted toward an open environment in which we rely on our trust in each individual researcher’s conscience.

The pressure felt by editors and authors to perform well according to bibliometric indicators fueled by national evaluation agencies has already led some editors to artificially boost the citations received by their journals (2). Although fraud cannot be fully avoided by any control system, citation indexes in general, and those developed by Google in particular, should be transparent, exposing those who indulge in malpractice.

### REFERENCES

1. E. Delgado López-Cózar, N. Robinson-García, D. Torres-Salinas, *J. Am. Soc. Inform. Sci. Technol.* doi: 10.1002/asi.23056 Available at: <http://arxiv.org/ftp/arxiv/papers/1212/1212.0638.pdf>.
2. R. van Noorden, J. Tollefson, *Nature* **500**, 510 (2013).