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# Hundreds of open access journals accept fake science paper

Publishing hoax exposes 'wild west' world of open access journals and raises concerns about poor quality control

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A fake scientific paper has fooled 157 open access journals. Photograph: Getty Images

Hundreds of open access journals, including those published by industry giants Sage, Elsevier and Wolters Kluwer, have accepted a fake scientific paper in a sting operation that reveals the "contours of an emerging wild west in academic publishing".

The hoax, which was set up by John Bohannon, a science journalist at Harvard University, saw various versions of a bogus scientific paper being submitted to 304 open access journals worldwide over a period of 10 months.

The paper, which described a simple test of whether cancer cells grow more slowly in a test tube when treated with increasing concentrations of a molecule, had "fatal flaws" and used fabricated authors and universities with African affiliated names, Bohannon revealed in Science magazine.

He wrote: "Any reviewer with more than a high-school knowledge of chemistry and the ability to understand a basic data plot should have spotted the paper's shortcomings immediately. Its experiments are so hopelessly flawed that the results are meaningless."

Bohannon, who wrote the paper, submitted around 10 articles per week to open access journals that use the 'gold' open access route, which requires the author to pay a fee if the paper is published.

The "wonder drug paper" as he calls it, was accepted by 157 of the journals and rejected by 98. Of the 255 versions that went through the entire editing process to either acceptance or rejection, 60% did not undergo peer review. Of the 106 journals that did conduct peer review, 70% accepted the paper.

Public Library of Science, PLOS ONE, was the only journal that called attention to the

paper's potential ethical problems and consequently rejected it within 2 weeks.

Meanwhile, 45% of Directory of Open Access Journals (DOAJ) publishers that completed the review process, accepted the paper, a statistic that DOAJ founder Lars Bjørnshauge, a library scientist at Lund University in Sweden, finds "hard to believe".

The hoax raises concerns about poor quality control and the 'gold' open access model. It also calls attention to the growing number of low-quality open access publishers, especially in the developing world. In his investigation, Bohannon came across 29 publishers which seemed to have derelict websites and disguised geographical locations.

Numbers of open access publishers are only increasing, according to Jeffrey Beall, a library scientist at the University of Colorado, Denver, who names and shames a list of "[predatory publishers on his website](#)". He said that predatory open access publishers "exploded" last year and numbers continue to grow at a "rapid pace".

However, Paul Peters, the director of OASPA ([Open Access Scholarly Publishers Association](#)), 57 of whose open access publisher members accepted the bogus paper, said the hoax was a "missed opportunity to do a more scientific study with a proper control group of subscription-based journals as well as more random sampling of open access journals that were chosen".

Peters said a more valuable study would have included some sense of whether traditional journals have a similar quality control issue. He added that the scam reflects a weakness in peer review, rather than a flaw in the gold open access model.

OASPA is looking into why some of its members accepted the paper, said Peters. "In the event that we do find that members did not practice appropriate peer review, we will take action that may include asking them to leave the organisation," he said.

With increasing pressure on young researchers and PhD students to "publish or perish", it may be easy to get attracted by some of these low quality/predatory journals, says Eloy Rodrigues, an academic librarian and director of documentation services at the University of Minho in Portugal.

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