

Editorial: Fighting fake research

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In 1665 Henry Oldenberg launched the world's first scholarly journal. The purpose of *Philosophical Transactions of the Royal Society* was "to allow scientists to impart their knowledge to one another and contribute what they can to the grand design of improving natural knowledge and perfecting all philosophical arts and science." Three hundred and fifty years later we would still recognise the key elements of his creation: the promotion of sound science through peer review, the recognition of scientists and the creation of a permanent record of important ideas and research. *Education & Self Development* is a 'traditional' journal – as are most of the well-established scholarly journals around the world.

However, time are changing and now we not only use information and communication technologies to help us deal with submissions and typeset the journal, we are also moving away from reliance on the printed record towards a purely online record. The production of hundreds of printed copies of each issue of a journal is expensive and is seen as environmentally wasteful. Increasingly, university libraries are reducing their collection of printed journals and using the space for more computer terminals. However, this has had some unfortunate consequences: some journals only appeared in print format, were never scanned, and only exist as fleeting shadows in the literature. That part of the permanent record on which we might have built our own research, has been lost.

The move to online journals has some advantages beyond the obvious savings in money and resources. It is now easier to append readers' post-publication comments to the published version of the article and thus to build a conversation around a research topic. Some editors have decided that the review process should be more open and have started publishing the text of reviews beside the article. Obviously great care needs to be taken to ensure that these pre- and post-publication comments are honest, fair and are not libellous. It also implies a move from single- or double-blind reviewing to a system where reviewers are prepared to put their name to their comments. This should have a moderating effect on the quality of reviews: if their identity is there for all to see then reviewers will be more careful to ensure that their comments are constructive and the review reflects the time and care given by the article's author. It does, however, make it possible for unscrupulous authors to arrange fake reviews – sometimes from the author themselves writing under a pseudonym – to give their work greater credibility.

A number of commercial organisations have been set up to act as intermediaries between the author and the journal editor. They offer to review (and sometimes to copy-edit) submissions and then to send the reviews to the editors of journals they consider appropriate. In effect they are saying to the editor. "Here is an article which we have reviewed for you. You can trust us when we say that that this is a good article which can be published in your journal." The reviewers are paid for their work and the companies are paid by the journals for the articles that they deliver. Again the issue is, of course, one of trust. If the editor does not know the reviewers and their ability to carry out a good review, then there is considerable risk in accepting the article for publication. Were the

reviewers genuine? Were they friends of the author? Are the reviews really impartial or were they written to improve the chances of that paper being accepted so that the company makes more money?

This is a disruptive technology which offers ways of doing things differently and ways of doing very different things. It could be argued that the role of the publisher is changing radically and may even be disappearing. It is a relatively simple matter to set up a website that allows authors to upload their articles and then add comments from other researchers. Why should the journal editor (like myself) make the decisions about which articles can be published? In this new scientifically egalitarian world everyone can have their say and the consumers of the research (the readers) will be free to decide which papers are worth reading and citing. I suspect that it would lead to an explosion of fake research that parallels the explosion of fake news that we now find on the internet. Of course, fake research is not new. Perhaps the most notorious is the fraud perpetrated by Andrew Wakefield in 1998 (Wakefield et al. 1998) which claimed to have identified a link between the MMR vaccine and autism. The fraud was undetected by the review process and, as a consequence of this fake research, the number of children receiving the vaccine fell significantly, and numerous children suffered the dreadful after-effects of measles, mumps and rubella (Godlee, Smith, and Marcovitch, 2011). Is the risk of increased fake research a price that is worth paying for a more open and more affordable system of scientific publication? Certainly we need to give more attention to educating early career researchers in the skills of detecting fake research and fake reviews published online.

The publishers of quality scholarly journals add significant value to their publications (see Scholarly Kitchen, 2018) but their key contributions are to organise and monitor a rigorous system of peer review, to maintain a permanent archive of published articles, and to make those articles discoverable so that other researchers can find, read and cite the work that is published – and thus give the authors full recognition for their work. As the case of Wakeham illustrates, the system is not perfect, but it is the best defence we have against fake research. Any alternative must find ways of achieving these key objectives. The idea of a wholly self-regulating system is superficially attractive, but is vulnerable to human frailty and unethical behavior.

References

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