Would JISAKOS have published Darwin?

C Niek van Dijk, Editor-in-chief

At the leading edge of any science, there is an element of faith that what we are doing will eventually turn out right and its assumptions prove to be true.

But on this leading edge is also a group of people who have invested time and effort and prestige to get where they are. This group won’t like being proven wrong and they will fight against it. That is what any orthodoxy does. It protects itself, and dislodging it can become messy.

I believe we all have an image of science as a sort of gleaming machine, polished and pure, which rolls along as if by itself. Fake news is not for science! But is that really so? Let’s have a closer look.

There is an inexhaustible requirement to publish, as if getting into print were the only way to advance a career. It used to be said in Italy—at least for the social sciences, and in all seriousness—that to become a professor, you had to publish two-and-a-half kilos of papers. And although, of course, this does not apply to our orthopedic world, we might say, like Marcellus to Horatio, that ‘something is rotten in the State of Denmark.’

The same pressures are definitely there: the need to publish, to get one’s name in to print, and to be first in line to receive research grants. How many articles are really worth reading, and how many are just there to build up someone’s ‘portfolio’?

And then there’s the problem of language. George Orwell wrote: ‘English is a beautiful language, but it can be corrupted and made ugly by foolish ideas and, having been corrupted, it can only express more foolishness...’

How many times have you wrestled with the mangled language of an abstract, trying to work out what it is really saying? My ‘simplicity principle’ tells me that the human mind can only understand simple things. And things in fact also happen to be simple. So, aspiring authors, please don’t make the trivial sound complicated. Give us the core of your findings in simple words.

We tend to believe that we can solve all problems by peer reviews; that any article which passed examination by those-who-should-know-better is safe and sound to read. We speak proudly of this, our scientific ‘rigour’.

But perhaps it only ensures that aspiring authors agree with those-who-should-know-better, and the unusual and the unorthodox are strangled at birth and will never get into print.

Do you think that if the peer-review system had been in place, Darwin would ever have been accepted for publication? I very much doubt it!

But there is a worse problem. Having good reviewers on board is of major importance for any journal. Reviewers protect the scientific quality of a journal. However, the number of peer reviewers is limited. This has led some journals to allow authors to recommend their own reviewers. Authors merely provide the email addresses of two reviewers who they recommend to review their submitted article. Unfortunately, this has drifted into corruption. As of April 2017, Tumour Biology had withdrawn 107 research articles. Other publishers followed suit, because it emerged that the reviewers were actually working for the author. In many cases authors were working with third-party services who were creating fake reviewers unbeknownst to the authors. In some cases the reviewers and author were one and the same, with the author providing the journal with two sham emails created by the author himself! This is akin to the recommendations on the back of a paperback being written by the author himself. But science is not paperbacks!

Interestingly, this scandal was discovered because the ‘reviewers’ were providing their reviews on time and promptly. As Elizabeth Wager, editor of the journal Research Integrity & Peer Review, observed: ‘this was the red flag. In some cases, both the reviews would pop up within minutes of each other. As all editors know, reviewers often—if not always—do not meet the deadline to submit their review.

In China it has gone further. Apparently there is a market for authors wishing to purchase an article. This was discovered by two journalists who pretended to be medical doctors. They identified over 25 companies where an author can order a scientific article at a cost of up to $25,000. The undercover investigation, called ‘China’s Publication Bazaar’, revealed a thriving black market in China for paper authorisation. Fake science, fake news, or both?

Like most problems, this has become its own minor discipline. Outliers such as Tumour Biology and authors who purchase papers...

Figure 1 There is a gradual progression in scientific praxis from responsible conduct of research to questionable research practice, undesirable research behaviour and finally scientific misconduct (‘falsification’ and ‘fabrication’ of results). Conscious copying text in the introduction and discussion of a manuscript without citing (‘plagiarism’) is regarded as undesirable research behaviour or even scientific misconduct.

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publications tend to be discovered, eliminated and solved at some point in time. In the end, we expect people doing science to behave properly; we expect them to behave morally.

There is a gradual progression, in scientific praxis, from the ‘ideal’ through ‘adequate’ to ‘sloppy’, then through ‘unconscious bias’ and ‘conscious bias’ to ‘falsification’ and blatant ‘fabrication’ — with ‘plagiarism’ along the way (figure 1). We expect our scientists to choose their position, no further up the hill than ‘sloppy’, and stick by it, with moral courage, and as a gentlemen.

However much we dress it up with fine language, integrity is doing the right thing when no one is watching. It’s really that simple.

People can cheat in science. And increasingly they are cheating. In 2009, Fanelli published the results of a meta-analysis of 18 surveys in which scientists were asked directly whether they have committed or know of a colleague who committed research misconduct. He reported a pooled weighted average of 2% (n=7, 95% CI: 0.86 to 4.45) of scientists admitted to have fabricated, falsified or modified data or results and up to 34% admitted other questionable research practices. These figures are astonishing, and they could not possibly apply to my own alma mater ‘it can’t happen here’. Can it? Let’s have a closer look.

The last 35 years I have been working in the Amsterdam Medical Centre (AMC) faculty of the University of Amsterdam. The research code of the AMC is ‘Good research flourishes in a culture in which independence and integrity thrive.’ Recently our ombudsman Prof. Hanneke de Haes gave a lecture for 90 PhD students. Her lecture was titled ‘Independence in Scientific research’. At the end of the lecture she posed six questions to her audience and asked them to provide her with an answer by means of an anonymous interactive voting system. Although we may expect their tutors to teach and correct them during the PhD process, I will present you with the figures.

Figure 2 Outcome of an anonymous interactive voting procedure among 90 PhD students from the VU medical centre and Academic Medical Center in Amsterdam. The PhD students were asked to give their opinion on the following six questions. The blue lines represent the number of students favouring that alternative.11

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**Figure 2**

Question no 1: Another PhD student suggests that I conduct some experiments for him (or something similar) and then in return he can do some for me, so that we can become each others co-authors.

A. I’ll agree with this proposal
B. I’ll discuss this with my Supervisor
C. I will not agree

Question no 2: An important result from my study is almost significant

A. I try another statistical approach
B. I look for an outlier and remove it
C. I write down the result as such

Question no 3: I have seen in my surroundings that research data were selected or statistically elaborated to reach significant results

A. Yes, regularly
B. Yes, sometimes
C. No, never
D. I don’t know

Question no 4: I have seen in my surroundings that scientific results were made up

A. Yes, regularly
B. Yes, sometimes
C. No, never
D. I don’t know

Question no 5: I find an article in which things I have to say are formulated in exactly the way I would like

A. I copy a few sentences
B. I copy a few sentences and cite the source
C. I use some sentences, changing them a little
D. I think about a good title myself

Question no 6: I have seen someone become an author who had nothing to do with the study

A. Yes, regularly
B. Yes, sometimes
C. No, never
D. I don’t know

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So, how does the *Journal of ISAKOS* stand in all this? I would suggest this simple answer: we at *JISAKOS* are aware of the problems. We are aware of the great debate in 20th Century Philosophy of Science, which went as follows: first, the Positivists said that what scientists should be doing is proving their theories correct, by finding the things they get right. Then the great philosopher Karl Popper said ‘no’, what scientists should be doing is trying to falsify their theories, find out where they go wrong, and so discard them, because science is a logical process. Finally, Thomas Kuhn said ‘no’ again; what scientists actually tend to do is protect their theories, the paradigms to which they’re attached, and they do this because they’re human, and science is as much psychology as it is cold logic.13

We at *JISAKOS* tend to side with Thomas Kuhn. We had hoped for something better, but we’re prepared to make do with what we’ve got, and make it work.

And to come back to the title of this editorial, yes, I would like to think that we would have published Darwin.
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