

Criticism within Science

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Have you ever studied a scientific paper and realised that it is just plain wrong? It has happened to me many times. And what did I do? Nothing. Until one day, five years ago, when I was given a task by a client to implement a statistical procedure, which was described in an article from a leading scientific journal.

It contained, in my opinion, a number of serious errors. Therefore, I suggested a different approach, but there was a problem. The authors of the paper are world-class scientists. The client was confused. Whom should he trust?

My senior colleague backed me fully in my arguments. I emailed the corresponding author and tried to check our findings with him. Not cooperative. In the end, we sent a letter to the Editor of the leading scientific journal, while the client agreed to wait.

Eventually, our letter was accepted, the client was satisfied, and we implemented the statistical procedure as we thought best.

The authors answered each of our arguments in their reply. I am not sure if they were compelled by the editors to do so. Their answers were not what I would agree with, but we did receive acknowledgment.

Here are my lessons from my first attempt at criticism within Science:

- 1) My initial reaction was to publicly accuse the authors of the bad science immediately. My senior colleague stopped me and explained that we must contact the authors. First, maybe we are wrong. Second, if they are wrong we ought to inform them and give them a chance to correct themselves.
- 2) There is a form of art in criticism. How to present your arguments and indicate to your fellow scientists that they are wrong, while at the same time showing respect to them. How to criticise and not be personal. Not easy at all.

3) Nobody understood why we did it. It was perceived as if we enjoyed picking on authors' errors.

My main impression at the end was that criticism within Science is totally unappreciated and at the same time extremely vital.

A scientist at a conference once told me *"If I wasted my time on a scientific paper, why tell the competition not to do the same?"*. In my view, that attitude is understandable if your research is privately funded, but how many scientists are publicly funded?

I think that we need not be afraid of criticism within Science (to give or to take), but of its absence!

References

1. My senior colleague - dr Ljubomir Buturovic

<https://www.linkedin.com/in/ljubomir-buturovic-798156>

2. Original paper

<https://academic.oup.com/ije/article/44/5/1673/2594545>

3. Our letter to the Editor

<https://academic.oup.com/ije/article/44/5/1738/2594584>

4. Authors' reply

<https://academic.oup.com/ije/article/44/5/1739/2594587>