

Report on the IUPAP Workshop on Scientific Misconduct and the role of Physics Journals in its Investigation and Prevention;

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This is a personally biased report with an added separate proposition, what the EPS could do and where it may act to serve its members.

It is comprised of what I got participating, so all information, to be properly cited scientifically, should be searched for in the original contributions on the server (<http://www.iupap.org>) or by the individual authors, given in the program. Also, mostly no names are given, with the lack of precision of my remembrance of their thoughts.

So, in short, it is a memo for EPS representatives and persons interested to gain a synoptic view on the topic.

1 Intention of the Workshop

At the last IUPAP workshop at Lyon 2001, ¹ Long Term Archiving of Distributed Documents in Physics which had the intention to lead to recommendations by the IUPAP. The Action Committee on Publication and Scientific Communication of the EPS contemplated a respective ² it was decided to organize next a workshop on misconduct in the publication chain.

We all are grown up and believe that there is virtually no sizeable misconduct in the scientific publication process. For authors and referees nothing to earn but risk all their professional career in case of misconduct and for publishers of respected journals with a long grown reputation and an instant

¹LTADDP

²recommendation

risk of quickly losing it in case of misconduct there seem to be no real driving forces,- and the marketing divisions of the publishers keep to tell us that this is so.

The first day of the workshop started with the assumption that there is not much of a problem, - and went on with a continuing never ending steady flow of single examples of misconduct, from the floor and by the speakers.³ This led to the conclusion that it is much more common than thought, - but that one had not searched for it systematically because one assumed there is not much, - and commercial publishers certainly were not too much interested to delve into a search, with too much at stake.

Two events brought apparently the change:

1. The Schön case and related recent events: Someone faking actively and intentionally experimental original data to prove the 'discovery' of element 118, or a yellow laser, or room temperature superconduction materials. Especially the element 118 case was delved upon in detail a whole morning, with a report of the director of the LBL on the (internal) set of commissions trying to uncover the case, which took quite some time, with the editors of the most respected journals, PRL, Science, Nature, which uncovered that none of the many referees of the more than 40 papers a year in their journals 118 had shed doubts on the author. Instead, the nagging and steadily increasing notes from GSI Darmstadt at Germany and the respective Japanese group brought finally the breakthrough.

As one motor of the fake was easily identified the extraordinary Ehrgeiz of the main author to become famous and have a spectacular career. As a result he was fired and jobless.

But one was bothered that his experimental group director, -we change his name to 'badluck' here, was coauthor of most papers, presented the material at numerous conferences, but after the unearthing of the fake pleaded for 'the right to sleep by the wheel', -that the codriver is not responsible for

³The most entertaining example was for me: referee sends a paper, the body of which he copied from a paper, he was about to referee, with his own name to another journal, -not knowing that the referee there happened to be the author of the paper, where he stole the body from..

the decisions of a car driver. He stays in office since.

It remained open in as much unconsciously the harsh competition on the public of nations on research funding, and national pride, played a role, with the laboratory and all involved journals part of it, to regain the lead in hunting for the heaviest elements competing with the GSI and Japan.

2. The business model of present publishers to earn money by owning the documents (copyright transfer) and process them subsequently, adding quality by layout, printing, refereeing and putting them close to related papers in a journal, hindered an open comparison of documents of different journals and publishers volume, apart from its apparent insurmountable technical difficulties. However, in the digital age it is technically easy to compare documents on behalf of possible plagiarism, duplication, similarities, with the only obstacle to get the documents. At the ArXiv, at eprints (UKoeln, Southampton, UK), and at ISN Oldenburg for the EPS service ⁴, to name a few, such tools have been developed recently.

Several times it was mentioned by various publishers and from the floor, that reversing the chain of publication by "publish first, review then", which is, partially due to the ArXiv, where the authors publish (distribute) their documents first, and send them subsequently to a conventional publisher, opens the chance to replace the monolithic type of blind blind refereeing (referee stays unknown to the author and the public) to many parallel or subsequent or alternative different types of vetting, certification, refereeing and reviewing, adequate for the individual purpose. Especially open open refereeing would, so the opinion of several publishers, eliminate the possible misconduct of referees (by withholding, reuse, turn down of good papers). It is interesting, that the scientists ⁵ on this topic, as of ⁶. now reaches the actual publishers consideration and plans for future services.

⁴PhysDoc

⁵discussion

⁶CERN 2001

2 The workshop

The IUPAP workshop was organized by the publication committee of the IUPAP and its competent driving force, Marty Blume, APS.

In a leisurely atmosphere at IoP, about 100 participants, mostly society-publishers (APS, AIP, IoPP), editors, referees of scientific journals and some journalists discussed for two days. Many panel discussions and extensive discussion contributions by and from the floor assured a broad and representative spectrum of opinions and coverage of the topic.

Topics were:

1. Plagiarism and the failure to cite properly: From the few cases uncovered by chance and mishap (copying in full or part other's papers for own publications by authors, referees and even editors; not citing the formulae and findings of others; assimilating others findings, rephrasing it in own words;), towards a general line for recommendations to be formulated by and for IUPAP.

A remarkable tendency was mentioned and proposed: from citing the original paper of a finding towards citing the most recent of renowned review article which presents the finding in modern language, representation and understanding, ready to be applied by the reader.

2. Duplicate submissions:

- when authors save wasting their time to write a full body of an article but focus on the new finding itself and keep up with the traditional frame of journal publishers to expect full selfcontained papers by copy-and-paste the latex file paragraphs of their older papers. Examples of up to 85% .tex-identity of papers were mentioned. A. Sullenberger presented statistical material, that selfcopying started to be a mass phenomenon about 1991, when text-processing by authors came up, and slowly declines since then, - with more ease to cite electronic versions of older papers.

- when authors send their papers to many journals in parallel to have a better chance to get accepted. This seemed to be more common than assumed, but not checked routinely between publishers. So, curious cases

sticked out, like an author, forgetting to withdraw a paper prior to publication because it was accepted in another journal just before.

3. Authorship problems: Apparently, traditions are changing. In the past, and in some far-eastern countries, the guest-authorship (authors put a guest person, who contributed nothing on the paper), head-authorship (authors put their group or institute head on the paper,- or they inforced it..), fake authorship (authors put renowned persons on the paper trying to have a better chance of the paper to be accepted), alphabetic order (not respecting the order of amount of contribution; with some cases (as Mr. Aleklett) who changed his name to be noted as principal author)and so forth.

4. Responsibilities of Institutions: This was somewhat new in this context: that the institutions and their heads should accept actively their role in the process of publication: enforce proper data taking, authorship order according to contributions, not allowing any author that has neither read nor takes responsibility for his part attributed to him as contribution (no sleeping by the wheel). In this respect the CERN internal multistep vetting, certifying scheme of papers was greatly praised as a model.

5. Fabrication of Data: This was mentioned above. This was a lengthy purely US-session on regrinding and regrinding the Schoen case, how the scientific rechecking data and understanding finally won over the national pride and journal keenness to present spectacular results.

6. Responsibility of journals to one another:
This is a great problem: with the traditional way of earning money by owning documents publishers are at present still unwilling to exchange their documents under consideration, thus opening wide the road for misconduct of authors, instiutional heads, and editors.

7. Conflict of Interest: A serious problem are the many areas of conflict of interest inherent for the present publication system, which are the driving forces for the many facettes of misconduct discussed at the workshop. The way out was several times addressed: to move to new scenarios of scientific information distribution and certification, possible and realizable in the e-age.

8. Referee misconduct: The many cases of misconduct of referees, although a minor proportion of the total, lead to the conclusion that this should be more carefully followed.

9. Different international views of misconduct: It was carefully analyzed and reported that certain rules, esteemed in one part of the world to be misconduct, are common and accepted in others, notably unasked for guest authorship, but that the development is towards a joint understanding.

10. Punishment of offenders: how, what, and by whom?

There was a consensus that punishment of offenders on top of the government persuing breaking existing laws should not be moved to the government. In the scientific world there is a severe punishment by being outed as an offender of ethical rules of conduct, with the consequences of not getting positions.

It was consensus that some rules of conduct should be collected, some of which are:

1. full archiving of experimental data for crosschecking by others
2. no faking, 'adjusting', polishing of data
3. no guest authorship, author orders by contribution, responsibility of all authors for the paper, including to read them carefully
4. referees not to misuse their privileged information
5. publishers to inform their competitors on papers they intend to publish
6. enforcement should be by institution's and workgroup heads.

It was agreed on to draft a set of recommendations. The first version to be sent to the participants of the workshop. Then it is intended to let the IUPAP accept it as ethical rules of conduct and guidelines and let the IUPAP distribute it worldwide.