Challenges in Research Ethics

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RESEARCH ETHICS

the application of ethical principles to scientific research

Phases of research
- Planning and designing research
- Research implementation
- Reviewing research
- Reporting research results

Participants
- Researchers
- Research subjects
- Public

Dimensions of research
- Data collection, use, and interpretation
- Relationships among researchers
- Relationships between researchers and those that will be affected by their research
- Reporting methods
- Responding to disputes or misconduct
- Promoting ethical integrity in research
PRINCIPLES

▸ Honesty (valid interpretations and justifiable claims)
▸ Reliability (in performing and reporting research)
▸ Objectivity (transparency and verifiability)
▸ Impartiality and independence (from pressures and interests)
▸ Open communication (ensuring availability and accessibility)
▸ Duty of care (for research subjects – e.g. human subjects, experimental animals)
▸ Fairness (referencing, crediting, relationship with colleagues)
▸ Responsibility for future science generations (mentorship)
“Scientific misconduct includes (negligent or intended) fabrication (making up data or results), falsification (changing or misreporting research data or improper manipulation of experiments) and plagiarism (using ideas or words without accurate reference). These practices go against all scientific values and can undermine the scientific progress. Even more, it can cause harm.”

Major causes of research misconduct

- the lack of personal and professional integrity
- pressures in the working environment
- *Publish or Perish*
- failure to sanction misconduct
RULES AND REGULATIONS

- Code of ethics (values and general principles)
- Code of conduct (norms, rules, responsibilities, proper practices)
- Code of practice and procedure
- Policy (statement of intent, general concepts, responsibilities)
- Rule on procedures
Singapore Statement on Research Integrity (2010)

global guide to the responsible conduct of research

Responsibilities

- Integrity
- Adherence to regulations
- Research Methods
- Research Records
- Research Findings
- Authorship
- Publication acknowledgement
- Peer review
- Conflict of Interest
- Public communication
- Reporting irresponsible Research practices
- Responding to irresponsible research practices
- Research environments
- Societal considerations

http://www.singaporestatement.org/statement.html
University of Belgrade

▶ Code of Professional Ethics at the University of Belgrade
   (http://bg.ac.rs/files/sr/univerzitet/univ-propisi/Kodeks-profesionalne-etike.pdf)

▶ Rules on the Procedure of Establishing Non-academic Conduct in Writing University Theses
   (http://bg.ac.rs/files/sr/univerzitet/univ-propisi/Pravilnik-neakademsko-pisanih-radova.pdf)
European Science Foundation and ALLEA (All European Academies)

- The European Code of Conduct for Research Integrity
  (http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-ethics_code-of-conduct_en.pdf)
Ethics is given the highest priority in EU funded research: all the activities carried out under Horizon 2020 must comply with ethical principles and relevant national, EU and international legislation, for example the Charter of Fundamental Rights of the European Union and the European Convention on Human Rights.

European Commission – Policy – Research Ethics

- ethics is an integral part of research from beginning to end
- ethical compliance is seen as pivotal to achieve research excellence
- application of fundamental ethical principles and legislation to scientific research in all possible domains of research

Ethics Appraisal Procedure in Horizon 2020

- Ethics Self-Assessment (project preparation)
- Ethics Review Procedure (before the start of the project)
- Ethics Checks and Audits (throughout the project)
Ethical issues:

▸ the involvement of children, patients, vulnerable populations,
▸ the use of human embryonic stem cells,
▸ privacy and data protection issues
▸ research on animals and non-human primates
▸ misuse/malevolent use
▸ impact on the environment
▸ the avoidance of any breach of research integrity (avoiding fabrication, falsification, plagiarism or other research misconduct)
- The Office of Research Integrity (https://ori.hhs.gov/ori-policies)
- National Science Foundation (https://www.nsf.gov/about/)
- Academic Integrity in Research: Code of Practice and Procedure of the University of Oxford
Committee on Publication Ethics (COPE)

best practice in the ethics of scholarly publishing

- nonprofit organization established in 1997 by a group of medical journals
- assistance to editors and publishers on publication ethics
- guidelines on handling cases of research and publication misconduct

Codes of conduct
- Code of Conduct and Best Practice Guidelines for Journal Editors
- Code of Conduct for Journal Publishers

International standards for editors and authors
(http://publicationethics.org/node/11184)

Guidelines
- http://publicationethics.org/resources/guidelines (authorship disputes, text recycling, informed consent, peer review, retractions)
The flowcharts are designed to help editors follow COPE’s Code of Conduct and implement its advice when faced with cases of suspected misconduct and have been translated into a number of different languages. They can be downloaded individually (English only) or as a complete set.

**Individual flowcharts**

**How to respond to whistle blowers**

- [Responding to Whistle blowers - Concerns Raised Directly](http://publicationethics.org/resources/flowcharts) [PDF, 206KB (Version 1, November 2015)]
- [Responding to Whistle blowers - Concerns Raised via Social Media](http://publicationethics.org/resources/flowcharts) [PDF, 102KB (Version 1, November 2015)]

**What to do if you suspect a reviewer has appropriated an author’s idea or data**

- [What to do if you suspect a reviewer has appropriated an author’s ideas or data](http://publicationethics.org/resources/flowcharts) [PDF, 160KB]

**What to do if you suspect plagiarism**

- [Suspected plagiarism in a submitted manuscript](http://publicationethics.org/resources/flowcharts) [PDF, 145KB]
COPE – Cases

- a searchable database
- more than 500 cases + advice given by COPE
- follow-up and outcomes (for some cases)
- not for the purposes of court proceedings
MISCONDUCT

- Data fabrication
- Data falsification
- Plagiarism
Data manipulation

Falsification

▸ changing or omission of research results (data) to support claims, hypotheses, other data, etc.
▸ manipulation of research instrumentation, materials, or processes.
▸ manipulation of images

Fabrication

▸ construction (inventing) and/or addition of data that have never occurred in the research process
▸ claims made based on incomplete data

One of the causes: positive-results bias (“file drawer effect”)
One of the results: irreproducible data

https://www.theguardian.com/science/2017/feb/01/high-tech-war-on-science.
Plagiarism

- assuming another's ideas, words, or other creative expression as one's own
- a clear violation of scientific ethics;
- may also involve a violation of copyright law, punishable by legal action.

Plagiarism includes the following:

- Word for word, or almost word for word copying, or purposely paraphrasing portions of another author's work without clearly indicating the source or marking the copied fragment (for example, using quotation marks);

- Copying equations, figures or tables from someone else's paper without properly citing the source and/or without permission from the original author or the copyright holder.
Self-plagiarism

“when authors reuse their own previously written work or data in a ‘new’ written product without letting the reader know that this material has appeared elsewhere”

▸ republishing the same paper that is published elsewhere without notifying the reader nor publisher of the journal (duplicate publication)
▸ publishing a significant study as smaller studies to increase the number of publications rather than publishing one large study
▸ reusing portions of a previously written (published or unpublished text)


Plagiarism detection

- manual (usually during the peer review process)
- software-assisted (iThenticate, Turnitin, etc.)
  - comparing new documents with a reference collection
  - similarity criteria
  - detection efficiency depends on the scope and size of the reference collection, but also on the language of the paper
  - unable to detect the plagiarism of ideas
  - software-assisted screening for plagiarism is just the beginning of an investigation.
Plagiarism – problems and disputes

▶ similarity percentage

▶ “collage technique” but sources are cited
  (http://retractionwatch.com/2014/05/13/the-sins-and-virtues-of-authors-span-a-rather-colorful-palette-new-editor-yanks-plagiarized/)

▶ the problem of “duplicative methodologies”

BREACHES OF SCIENTIFIC ETHICS

- Questionable research practices (QRPs)
- Misuse of research data
- Authorship-related misconduct
- Failure to disclose a conflict of interest
- Inadequate personal behaviour
Questionable research practices (QRPs)

- QRPs vs. fraud
- exclusion of data that are inconsistent with a theoretical hypothesis;
- sometimes used for legitimate purposes;
- creating overly positive picture
- false impressions about the replicability of empirical results and misleading evidence about the size of an effect
- e.g. selective reporting of variables, failing to disclose experimental conditions, reporting selectively studies that worked, etc.

https://replicationindex.wordpress.com/2015/01/24/questionable-research-practices-definition-detect-and-recommendations-for-better-practices/.
Misuse of research data

- Intentional misinterpretation
- Data loss
- Data theft
- Allowing access to unauthorized users
- Not allowing access to those who should have access to data (e.g. research group members)
- Pseudo-anonymization
Authorship-related misconduct

- Bogus claims of authorship
- Not crediting an author
- Gift/honorary authorship (crediting as an author a person who was not involved as an author)
- Ghost authorship
- Conflict of interest

Nature journals:

Each new manuscript must include a statement of responsibility that specifies the contribution of every author.
ICMJE authorship criteria

▸ Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work;

AND

▸ Drafting the work or revising it critically for important intellectual content;

AND

▸ Final approval of the version to be published;

AND

▸ Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

▸ An author should be able to take public responsibility for the work!

Conflict of interest

- actual, apparent, or potential
- a situation in which financial or other personal interest have the potential to compromise or bias professional judgment and objectivity
- exists whether or not decisions are affected by a personal interest
- tangible (financial) or intangible
- potential conflict of interest must be disclosed
Inadequate personal behaviour

- Discrimination
- Harrasment
- Abuse
- Violence
MAJOR MANIFESTATIONS OF RESEARCH-RELATED MISCONDUCT

- replication crisis
- the crisis of peer review
- an increasing number of retractions
- predatory publishers
- copyright issues
Replication crisis

- Positive-results bias
- Difficult to publish results that demonstrate the inability to replicate already published results
- Insufficient details in the ‘Methods’ section
- Replication experiments are expensive

Reproducibility testing

the process of validating that the reported research results can be obtained in an independent experiment

- **Reproducibility Project: Psychology**

- Statcheck – software for checking PDF or HTML files for statistical errors ([http://statcheck.io/](http://statcheck.io/))

### RELIABILITY TEST

An effort to reproduce 100 psychology findings found that only 39 held up.* But some of the 61 non-replications reported similar findings to those of their original papers.

<table>
<thead>
<tr>
<th>Did replicate match original's results?</th>
<th>NO: 61</th>
<th>YES: 39</th>
</tr>
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</table>

| Replicator’s opinion: How closely did findings resemble the original study: |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Virtually Identical         | Extremely similar           | Very similar                |
| Moderately similar          | Somewhat similar            | Slightly similar            |
| Not at all similar          |                             |                             |

* based on criteria set at the start of each study

# The crisis of peer review

<table>
<thead>
<tr>
<th>Purpose of peer review</th>
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<tbody>
<tr>
<td>Experts critically examine and evaluate a paper prior to publication</td>
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<tr>
<td>▶ to eliminate papers of a poor quality</td>
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<td>▶ to help improve the quality of the paper</td>
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<table>
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<tr>
<th>Problems</th>
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<tr>
<td>▶ Time-consuming process</td>
</tr>
<tr>
<td>▶ Reviewers are not paid for their work (motivation)</td>
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<tr>
<td>▶ Flaws are possible (incorrect conclusions, omitted references, irreproducible results, etc.)</td>
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<tr>
<th>Negative consequences</th>
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<tr>
<td>▶ Publishing irreproducible results</td>
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<tr>
<td>▶ Retracted papers</td>
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<tr>
<td>▶ Fake reviews</td>
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<td>▶ Predatory publishers</td>
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Sting operations against bad practices in journals


Fake peer reviews

- Reviewers recommended by authors
- Reviewers selected by a guest editor
- Non-institutional (forged) email addresses for reviewers
- Reviews are completed quickly (within 24–48 hours).
- All reviews are positive.
- Agencies involved (sold positive reviews to authors)


Retraction

a formal notice declaring invalid a published paper

Reasons for retraction

▸ infringements of professional ethical codes
▸ multiple submissions
▸ bogus claims of authorship
▸ plagiarism
▸ fraudulent use of data
▸ major misconduct in general

Retracted articles MUST NOT be deleted. In the electronic version of the retraction notice, a link is made to the original article. In the electronic version of the original article, a link is made to the retraction note where it is clearly stated that the article has been retracted. The original article is retained unchanged, save for a watermark on the PDF indicating on each page that it is "retracted."
"Hindsight’s a bitch:" Colleagues dissect painful retraction

with 8 comments

Two blog posts are shining additional light on a recent retraction that included some unanswered questions — namely, the identity of the researcher who admitted to manipulating the results.

To recap: Psychological Science recently announced it was retracting a paper about the relationship between the words you use and your mood after a graduate student tampered with the results. But the sole author — William Hart, an assistant professor at the University of Alabama — was not responsible.

The post raised some questions — for instance, who was the graduate student, and if his or her work was so influential to a paper, why was he/she not listed as an author? Hart declined to identify the student, but two new blogs — including one by one of Hart’s colleagues at the University of Alabama — are providing more details.

In our original post, Hart told us he discovered the fraud after he posted the student’s data from another project online, and an outside expert raised concerns. In a recent post, Rolf Zwaan at Erasmus University Rotterdam identifies himself as the outside expert who questioned the data.

In his post, Zwaan refers to the student as "Fox." he clarified to us that it is a pseudonym:

I didn’t want to use the person’s actual name until it was clear they were the only culprit.

Zwaan writes that he discovered the problems with Fox’s data while trying — unsuccessfully — to replicate one of Hart’s papers, on which Fox was not listed as co-author. Since Zwaan was publishing his findings, Hart and his co-author submitted a commentary that included new data, and listed Fox as the first author. Once Hart’s team uploaded the new data to the Open Science Framework, Zwaan spotted numerous duplications — more than 70, among a list of 194 subjects. The two sides underwent some back and forth, and Zwaan told us the process became "contentious."

The editors of the journal [publishing the replication effort] did their very best to be evenhanded in this difficult situation. I admired this but it meant that I had to mobilize all my co-authors of the replication paper to get our point across. I’m not sure what went on on the other side, but there clearly was an unwillingness to believe the data were fake.

Last week, a colleague of Hart’s, Alexa Tuller, posted another essay on Zwaan’s site, saying Hart asked her to verify the data after Fox admitted he had deleted some data for "confidentiality" issues:

http://retractionwatch.com/
Spanish lab admits to image manipulation, retracts one paper, corrects another

A group has retracted one paper and corrected another in the Journal of Biological Chemistry (JBC) for image manipulations.

Last author José G. Castaño told us the manipulation occurred at the Universidad Autónoma de Madrid, where he and one other co-author are based. He declined to name who was responsible.

Here’s the retraction notice for "Cytomegalovirus promoter up-regulation is the major cause of increased protein levels of unstable reporter proteins after treatment of living cells with proteasome inhibitors."

The data shown in Figs. 1 and 2 were not correct. The lower α-tubulin blot images in Fig. 1 were reused in Fig. 3 and were incorrectly labeled MECL-1 (B2). The last four bands in the Y(B1) panel in Fig. 3 were reused in the Z(B2) panel. The corrected figures represent results from replicate experiments performed at the same time as the original experiments. These corrections do not change the interpretation of the results or the conclusions of this work.

The 2004 paper has been cited 31 times.

Regarding this correction, Castaño told us:

Again, and I want to make it clear to you, none of the co-authors of this paper from other institutions have any responsibility in the image manipulation.

It’s not the first time we’ve seen a journal fix image manipulation with a correction notice, rather than misconduct — a chemistry journal did the same in 2014, also reasoning that the overall conclusions remained valid.

We’ve reached out to Alvarez-Castelo and to the Dean of Science at Universidad Autónoma de Madrid, and will update this post with anything else we learn.
Predatory publishing

- Publishing business model that involves charging publication fees to authors without providing regular peer review
- Exploits and misuses
  - the concept and mechanisms of Open Access
  - information technologies
- Aim: financial gain
Recognizing predatory journals

- superficial peer review or no peer review
- no editorial board
- missing affiliation information (for the editor and the editorial board)
- lack of transparency in publishing operations
- information about author fees is not transparent
- boastful language
- false claims about the IF
- spam emails sent to potential authors
- spam requests for peer reviews
- inconsistent licensing policy
- minimal or no copyediting or proofreading of submissions

Beall’s lists – archived

Choose the right journal for your research

Share research results with the world is key to the progress of your discipline and career. But with so many publications, how can you be sure you can trust a particular journal? Follow this check list to make sure you choose trusted journals for your research.
Welcome to Bentham Open

BENTHAM OPEN publishes a number of peer-reviewed open access journals. These free-to-view online journals cover all major disciplines of science, technology, medicine and social sciences.

Endorsements

Indiana University School of Nursing, USA

"It is important that students and researchers from all over the world can have easy access to relevant, high-standard and timely scientific information. This is exactly what Open Access Journals provide and this is the reason why I support this endeavor."

Jacques Descotes
(Centre Antipoison-Centre de Pharmacovigilance, France)

Recently Published Articles

Surfing Injuries in Norwegian Arctic Waters
The Open Sports Sciences Journal, 2016, 9: 153-161
Gunn-Elsiebeth Ulestad, Jon Olav Drogset

[Electronic publication date: 30/11/2016] [Collection year: 2016]
[Publisher Id: TOSPS-9-153] [DOI: 10.2174/1875399x016901010153]
OMICS International

Make the best use of Scientific Research and information from our 700+ leading-edge peer reviewed, Open Access Journals that operates with the help of 50,000+ Editorial Board Members and esteemed reviewers and 1000+ Scientific associations in Medical, Clinical, Pharmaceutical, Engineering, Technology and Management Fields.

Open Access Journals
- Journal of Anesthesia & Clinical Research
- Journal of Brain Tumors & Neurooncology
- Journal of Dermatitiss
- Journal of Clinical & Experimental Neuroimmun...
- International Journal of Research and Develop...

Scientific Conferences
- International Conference on Nuclear Engineering
  October 16-18, 2017 Atlanta, USA
- 2nd International Conference on Ear, Nose and ...
  October 16-18, 2017 Rome, Italy
- 2nd International conference on Speech Langua...
  Orlando, USA

Scientific Alliance
OMICS International ventured into Scientific Alliance. has already signed agreement with more than 1000 scientific associations worldwide to make health care and scientific information open access. This brings together a platform for global networking among the community through shared resources and working together in multifarious key areas.

OMICS International Worldwide Collaborations
Hijacked journals

- bogus website claiming to belong to a legitimate journal

  - Purpose: fraud!

- offering authors the opportunity to rapidly publish their research for a fee

- sometimes, the stealing of private data (passwords, credit cards numbers, etc.)

- Print-only journals and journals with poor websites are more likely to be hijacked.

- Web domain of the false journal resembles that of the legitimate journal.

- The identity of perpetrators is usually difficult or impossible to establish.

Multidisciplinary ISI Journal in All Fields of Sciences

Wulfenia Sidebar Menu

Submission Guide
Manuscripts submitted for consideration to the journal must conform to the requirements that will facilitate preparation of the articles for publication.

Editorial Board
The international editorial board is headed by Professor Dr. Verena S. Franz.

General Policies
- Papers that are published or held by the Journal may not be published elsewhere.
- Peer Review Process
Papers will be sent to three peer reviewers for evaluation.
- Recruitment
We welcome referees who would be willing to act as reviewers.

Notification:
fake journal
multidisciplinary

legitimate journal
forestry
Legitimate journal

Open Access

Fake journal

Subscription-based
Title of the paper:

Peers review in a fake journal

Further comments of the evaluator for the author (authors) of the paper:

It is suggested that the author changes the title to make it more in accord with the body of the text. The main problem of the research should be more exact. Scientific analysis of the research is well presented, the main propositions of the paper are crystal clear. The results are comprehensive and satisfying in conclusion part. The English language is acceptable. It is recommended that the author adds more sources since the year 2012. The author needs to make the main goals crystal clear.

Name and Workplace of the evaluator:

Date: 2016-05-06
Vanity press

- authors pay to have their books published
- No peer review
It's time to publish
your thesis with an international publisher!

✓ 100% free of charge publication
✓ Worldwide marketing
✓ Royalties
✓ Flexible terms

PUBLISH NOW
ACTIONS AGAINST MISCONDUCT

- Reporting misconduct
- Investigation
- Sanctions (reprimand, suspension, revocation, etc.)
- Legal action
- Public discussion
- Open access to publications research data
- Developing methods for misconduct detection
Whistleblowing and investigation

- formal reporting of alleged misconduct
- based on evidence
- A whistleblower does not take responsibility for the investigation.
- measures to protect both the whistleblower and the accused
- All parties must be given an opportunity to present evidence.
- Cases sometimes end up in court proceedings.
Broken windows, threats, and detention: Is whistleblowing worth it?

with 3 comments

Several years ago, a UK academic living in Thailand for decades decided to expose the fact that a Thai official had plagiarized his PhD thesis. And he’s paid the price. Last year, Wyn Ellis was held in a Thai airport for five days, as officials claimed he was a “danger to Thai society.” As some new developments have emerged in the case, Ellis ponders the after-effects of his actions.

This month marks the 4th anniversary of the very public revocation by Chulalongkorn University of the PhD degree of Supachai Lorlathawarn, the former director of Thailand’s National Innovation Agency (NIA), for ethical violations, and plagiarism of his thesis.

For me, the original whistleblower who first alerted authorities to the problems with Lorlathawarn’s PhD thesis, the knowledge that justice was eventually served is far from cause for celebration. Indeed, the Byzantine twists and turns, the lawsuits, surveillance, physical attacks, and even death threats over the past nine years have — without a doubt — taken their toll on my family and I, and should serve as a salutary lesson to anyone harboring naîve notions of civic duty. This was certainly my own motivation back then, as an advocate and passionate supporter of Thai science and innovation.

Here are some of the threats I encountered. Listening to a surreal, disembodied voice on the line, yet again informing me of my own address, and how he intends to abduct and kill my family and myself, the shock of a large rock smashed into my car window on two occasions as my wife and I drove to court hearings. I experienced repeated “investigations” of my tax and immigration status; attempts to have me kicked out of my job, my PhD studies, even my own adopted country. And of course, the nine lawsuits and police reports, which could have landed me in a Thai prison for years. Looking back at such systemic and long-term intimidation, it seems incredible that anyone would continue to pursue such a cause, given the very real prospect of rocks being replaced by bullets. The pressure cost Erika Fry, the Bangkok Post investigative journalist who famously broke the story in 2009, her job; facing criminal defamation charges while those against her employer were dropped, she jumped bail and returned home to the USA.

Would I do it again? Absolutely. My wife, who is Thai, and was formerly a lecturer and researcher in agriculture until her retirement, is possibly even more passionate than I in her advocacy for academic integrity and ethics in Thai science and education. Without her constant support and strength, we would never have accomplished the feat of prevailing in nine legal cases against such a well-connected and resourceful adversary, with everything to lose.

Retraction Watch

After court verdict, BMJ retracts 26-year-old paper

with 5 comments

Today, The BMJ retracted a 1989 paper about the role of breastfeeding and formula in infant eczema — 20 years after the data were called into question by a university report.

However, the report was kept secret — due, by some accounts, to alleged threats of a lawsuit. That is, until this year, when author Ranjit Kumar Chandra — who once dubbed himself the “father of nutritional immunology” — lost a $32 million libel case. That case, against the Canadian Broadcasting Company (CBC) for airing a three-part documentary series on allegations of fraud against Chandra, pushed the retraction report by his former employer Memorial University of Newfoundland into the public domain.

At 26 years, the BMJ retraction is a runner up for the longest amount of time a journal has taken to retract a paper. (We know of another retraction that was 27 years in the making, and a scientist who requested the retraction of some passages of a 1955 article in 2007, after the article became fodder for creationists.)

Here’s the first part of the retraction note:


The BMJ has retracted the article after receiving a copy of an inquiry into the research of RK Chandra, which was conducted by the Memorial University of Newfoundland and completed in August 1993. The university did not publish the inquiry report at the time. Nor did it notify the editors of journals that had published articles by Chandra that were considered in the report. The BMJ obtained a copy of the report when it came into the public domain as a result of Chandra taking and losing a legal action against the Canadian Broadcasting Corporation (CBC), which aired television programmes about Chandra in 2006.

The note includes quotes from the university report:

The inquiring committee experienced great difficulty with its work, but its final conclusion was that “scientific misconduct has been committed by Dr Chandra.”

It looked at three studies and found that:

“absolutely no raw data (or files) of any kind were exhibited”
NEW FORMS OF PEER REVIEW


Post-publication peer review

https://pubpeer.com/
Open research data and reproducibility


Questions?

biblioteka@itn.sanu.ac.rs