Responsible Conduct of Research

Professor Sara Dolnicar
UQ Business School

Research Misconduct – What is it?

"Scientific misconduct
is the violation
of the standard codes
of scholarly conduct
and ethical behavior
in professional
scientific research"
(Wikipedia, "scientific misconduct", last accessed 7.9.2015)

Intentional → "suicide"

Not intentional → "landmine"

http://www.standardmedia.co.ke/thecounties/article/2000101104/four-police-officers-injured-in-dadaab-landmine-explosion
http://degdegnews.net/2013/12/14/deg-deg-qarax-wayn-oo-gilgilay-magaalada-dhooblay/

My role

Research Integrity Advisor

- NOT investigating
- NOT mediating
- informing → presentations, seminars, FAQs
- preventing → presentations, seminars, FAQs, meetings
- assisting → meetings, referring on

http://www.theguardian.com/politics/2012/jan/26/mps-launch-group-to-tackle-landmines

Today I want to scare you

A few examples

- Sloppiness
- Authorship
- …

The Australian Code for the Responsible Conduct of Research

- Issues
- Solutions

Time for questions throughout.

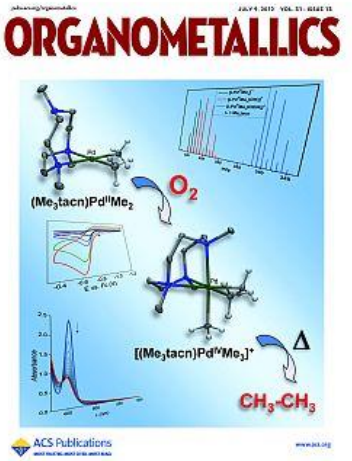
Maybe …. workshopping a few real examples.

https://www.pinterest.com/amandadibella/dane-schatz/

Sloppiness

The article

Emma E. Drinkel, Linglin Wu, Anthony Linden, and Reto Dorta (2014) Synthesis, Structure, and Catalytic Studies of Palladium and Platinum Bis-Sulfoxide Complexes, *Organometallics*, 33 (3), pp 627–636.



http://www.chemistry.wustl.edu/news/miricas-work-highlighted-cover-organometallics

The supplementary material file

reaction was filtered over celite to remove AgCl. Solvent was then removed to leave a yellow residue in the vial, the remaining clear, yellow solution was concentrated to a volume of about 1ml, and diethyl ether was added in a dropwise manner to the stirred solution to precipitate a yellow solid. The vial was centrifuged so the supernatant solvent could be decanted off by Pasteur pipette. The yellow solid was washed twice more with ether and the dried completely under high vacuum to give 99mg (93% yield) of product.

Emma, please insert NMR data here! where are they? and for this compound, just make up an elemental analysis...

Pt(II)((*M*,S_S,S_S)-*p*-tolyl-binaso)(acac)(BF_4)$_2$ (154): A vial was charged with 100 mg (0.126 mmol) **5a** and 24 mg (0.126 mmol) $AgBF_4$. 2 mL CH_2Cl_2 was added, the vial was covered and the reaction was left stirring in the dark for 2 hours. After this time, the

The landmine

Retraction Watch
Letter by the editor to the world
Investigations
Additional information requested from authors
Correction printed - interpreted differently

But was Emma asked by Reto to make stuff up or not?
Will Emma and Reto be awarded research grants?
Will Emma and Reto be hired again?

http://degdegnews.net/2013/12/14/deg-deg-qarax-wayn-oo-gilgilay-magaalada-dhooblay/

Authorship

Buying Authorship

Chinese Reporter (“mystery scientist”) contacted MedChina

Offers: "topics for sale“

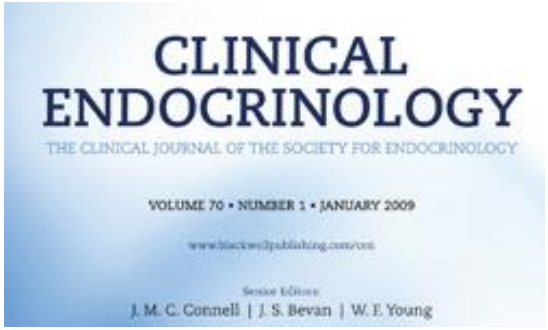
Papers already “more or less accepted
…all that was needed was a little editing and revising.”

The price depends on

impact factor

experimental or meta-analytic

Here: meta-analysis linking a protein
to papillary thyroid cancer
to be published in a journal with
an impact factor of 3.353.
→ 93,000 RMB—about $15,000.



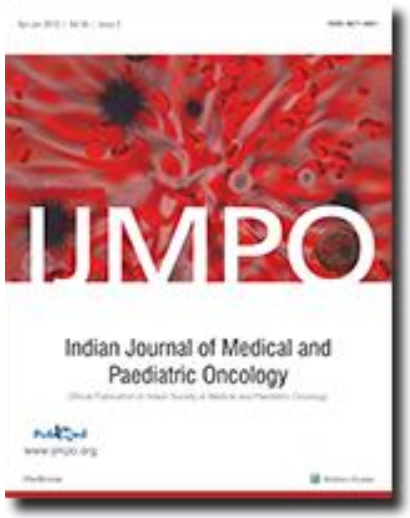
(http://www.scientificamerican.com/article/
for-sale-your-name-here-in-a-prestigious-science-journal/)

Adding authors

"The article, "*Outcome of neoadjuvant chemotherapy in locally advanced breast cancer: A tertiary care centre experience*"

[…]

hereby stands retracted on the request of the corresponding author who has admitted and informed of mistakenly including names of authors who never contributed towards the article."



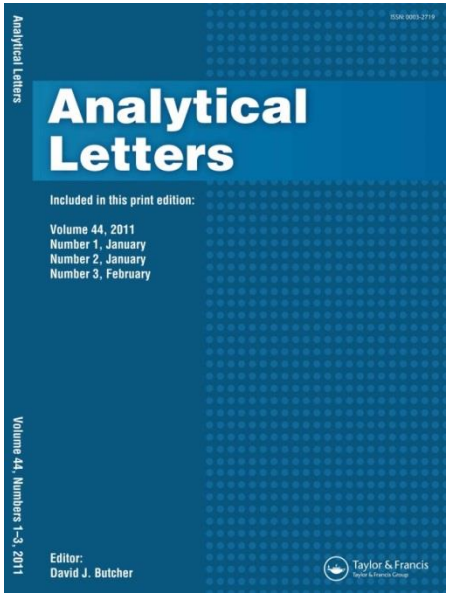
(http://retractionwatch.com/2015/04/21/authorship-issues-spell-retraction-for-breast-cancer-paper/#more-27027)

Omitting authors

Analytical Letters, 46: 2787, 2013

ISSN: 0003-2719 print/1532-236X online
DOI: 10.1080/00032719.2013.839299

Taylor & Francis
Taylor & Francis Group



STATEMENT OF RETRACTION

We, the Editor and Publisher of *Analytical Letters,* are retracting the following article:

Suzanne Lunsford "Conducting Polymer Matrix Poly(2,2′-bithiophene) Mercury Metal Incorporation" *Analytical Letters*, **44**.4 (2011): 727–735 http://dx.doi.org/10.1080/00032711003783143

The author's institution, Wright State University, has conducted an investigation into the authorship of this article, and established that the claim of sole authorship is not justified. This constitutes a breach of warranties made by the author with respect to authorship. We note we received, peer-reviewed, accepted, and published the article in good faith based on these warranties, and censure this action.

The retracted article will remain online to maintain the scholarly record, but it will be digitally watermarked on each page as RETRACTED.

Data fabrication

The headline

Second former University of Queensland researcher to appear in court to face fraud charges

with 4 comments

Bruce Murdoch, a neuroscientist formerly of the University of Queensland, will appear in court next week to face fraud charges stemming from an investigation that has already led to three retractions, several corrections, and similar charges for one of his colleagues.

Here's the notice from the Crime and Corruption Commission: Read the rest of this entry »

Bruce Murdoch

Share this:

Email | Facebook 35 | Twitter 41

Written by Ivan Oransky
December 12th, 2014 at 2:47 am

Posted in australia retractions,corrections,maney,misconduct investigations,neuroscience retractions,speech language hearing

The paper

"High-frequency (5 Hz) rTMS was applied to 10 active stimulation and 10 sham placebo patients for 10 min/day (3000 pulses), for 10 days and speech outcome measures and lingual kinematic parameters recorded at baseline and 1 week, 2 and 12 months post-stimulation." (p. 340)

High-frequency rTMS is a good therapy for speech symptoms in Parkinson's

European Journal of Neurology 2012, 19: 340–347 doi:10.1111/j.1468-1331.2011.03524.x

Treatment of articulatory dysfunction in Parkinson's disease using repetitive transcranial magnetic stimulation

B. E. Murdoch[a], M. L. Ng[b] and C. H. S. Barwood[a]

[a]Centre for Neurogenic Communication Disorders Research, School of Health and Rehabilitation Sciences, The University of Queensland, St. Lucia, Qld, Australia; and [b]Speech Science Laboratory, Division of Speech and Hearing Sciences, The University of Hong Kong, Hong Kong, China

EUROPEAN JOURNAL OF NEUROLOGY
THE OFFICIAL JOURNAL OF THE EUROPEAN FEDERATION OF NEUROLOGICAL SOCIETIES

Keywords: dysarthria, Parkinson's disease, transcranial magnetic stimulation

Received 6 April 2011
Accepted 26 July 2011

Background and purpose: Neuroimaging has demonstrated that improved speech outcomes in Parkinson's Disease (PD) subsequent to behavioural treatment approaches are associated with increased activity in the motor and pre-motor cortex. High-frequency repetitive transcranial magnetic stimulation (rTMS) is capable of modulating cortical activity and has been reported to have significant benefit to general motor function in PD. It is possible that high-frequency rTMS may also have beneficial outcomes on speech production in PD.

Methods: High-frequency (5 Hz) rTMS was applied to 10 active stimulation and 10 sham placebo patients for 10 min/day (3000 pulses), for 10 days and speech outcome measures and lingual kinematic parameters recorded at baseline and 1 week, 2 and 12 months post-stimulation.

Results: The findings demonstrated positive treatment-related changes observed in the active rTMS group when compared to the sham placebo control group at 2 and 12 months post-stimulation in speech intelligibility, communication efficiency ratio, maximum velocity of tongue movements and distance of tongue movements.

Conclusion: The results support the use of high-frequency rTMS as a therapeutic tool for the treatment of articulatory dysfunction in PD.

Introduction

A motor speech disorder in the form of hypokinetic dysarthria is a frequent sequelae of Parkinson's disease (PD), occurring in approximately 90% of cases with autopsy-confirmed PD [1]. Unfortunately, although both pharmacological therapy (e.g. levodopa) and neurosurgical interventions (e.g. deep brain stimulation) have been shown to be successful in ameliorating motor limb dysfunction in PD, it is now well documented that they have limited efficacy to improve motor speech function [2–4]. Repetitive pulses of transcranial magnetic stimulation (rTMS) of frequencies of 5 Hz and higher can increase the excitability of the primary motor cortex [5]. Given that motor speech dysfunction may be the outcome of reduced cortical excitability in PD [6,7], it is hypothesized that the use of non-invasive, high-frequency TMS applied to the tongue region of the motor cortex may restore the cortical excitability in that region of the motor cortex leading to long-term improvements in articulatory function and speech intelligibility.

In support of this hypothesis, recently several authors have reported improved motor function in individuals with PD administered repeated sessions of rTMS either to the motor cortex or the combined motor plus dorsolateral pre-frontal cortex [8,9]. A recent meta-analysis based on 10 randomized controlled clinical trials using the motor section (part III) of the Unified Parkinson's Disease Rating Scale (UPDRS) as outcome identified a significant benefit for high-frequency rTMS on motor function in PD but not for low frequency rTMS [10]. Neuroimaging has revealed that improved speech outcomes in PD subsequent to treatment with the Lee Silverman Voice Treatment [LSVT (LVST Global, Tucson, AZ, USA)] is associated with increased activity in the motor and pre-motor cortex [11] suggesting that the use of a technique, such as high-frequency rTMS, capable of increasing cortical excitability may also have beneficial outcomes on speech production. Further, animal studies have shown that rTMS may cause

Correspondence: B. E. Murdoch, School of Health and Rehabilitation Sciences, The University of Queensland, St. Lucia, Qld 4072, Australia (tel.: +61 7 33657139; fax: +61 7 33657967; e-mail: b.murdoch@uq.edu.au).

Source: European Journal of Neurology, 2012, 19: 340.

The retraction

European Journal of Neurology 2013, **20:** 1497 doi:10.1111/ene.12276

RETRACTION

Retraction statement: treatment of articulatory dysfunction in Parkinson's disease using repetitive transcranial magnetic stimulation

The following article from *European Journal of Neurology*, Treatment of articulatory dysfunction in Parkinson's disease using repetitive transcranial magnetic stimulation [1], by B.E. Murdoch, M.L. Ng and C.H.S. Barwood, published online on 4 October 2011 in Wiley Online Library (wileyonlinelibrary.com), has been retracted by agreement between the University of Queensland, the journal Editor in Chief, Professor Anthony Schapira, and John Wiley & Sons Ltd.

The retraction has been agreed due to the findings of a formal investigation by the University of Queensland, which has established that: no primary data can be located; and no evidence has been found that the study described in the article was conducted. The University has requested that the paper be retracted.

Reference

1. Murdoch BE, Ng ML, Barwood CHS. Treatment of articulatory dysfunction in Parkinson's disease using repetitive transcranial magnetic stimulation. *Eur J Neurol* 2012; **19:** 340–347.

Source: European Journal of Neurology, 2013, 20:1497.

The precendent

Former researcher to face court over alleged fraud – 12.12.2014

The Crime and Corruption Commission (CCC) has issued a former University of Queensland researcher with a Notice to Appear in court on 16 fraud-related offences.

The CCC will allege that the 64-year-old Wivenhoe Pocket man fabricated research findings and fraudulently applied for public and private research funding. It will be further alleged that he produced false reports on the progress of research.

The CCC today issued the man with a Notice to Appear in court on the following offences:

- 3 x Fraud, contrary to section 408C of the *Queensland Criminal Code*
- 1 x Forge and utter, contrary to section 488 of the *Queensland Criminal Code*
- 7 x Fraudulent falsification of records, contrary to section 430 of the *Queensland Criminal Code*
- 5 x General dishonesty, contrary to section 135.1 of the *Commonwealth Criminal Code*

The man is scheduled to appear in the Brisbane Magistrates Court on 19 December 2014.

As a result of the same investigation, on 31 October 2014 the CCC issued a 29-year-old Kuraby woman with a Notice to Appear in court on fraud-related offences [see previous media release].

The investigation is now finalised.

As the matter is before the courts, the CCC will not comment further.

Source: http://www.ccc.qld.gov.au/news-and-media/ccc-media-releases/former-researcher-to-face-court-over-alleged-fraud-2014-12.12.2014, last accessed 19.2.2015.

The collateral damage

… his collaborators?
… his postdocs?
… his students?

Source: http://billmadison.blogspot.com.au/2012/01/costa-concordia-captain-says-he-had-no.html, last accessed 19.2.2015

The personal challenge

I have …

… quickly asked a few people about something and reported it in a paper.

… published with a collaborator and having to publish an erratum.

… been accused of self-plagiarism.

… found myself reviewing my own paper.

…

Protect yourself

Read the Australian Code for the Responsible Conduct of Research, https://www.nhmrc.gov.au/guidelines-publications/r39

Stop, think and seek advice

on any issues that do not feel right.

The Code: Data Managment

Responsibilities

- Minimum 5 years storage
- Secure data storage
- Ownership
- Confidentiality
- Ownership tricky

The Code: Supervision

Researchers and Supervisors

- Ensure training
- Mentor and provide support
- Ensure valid and accurate research
- Ensure appropriate attribution – “Researchers and supervisors must ensure that research trainees receive appropriate credit for their work”.

Trainees

- Seek guidance
- Undertake induction and training

Source: Google Image IN THE END, THE ONLY WAY OF KNOWING IF THE DRAFTERS WERE FOLLOWING THE OFFICE CAD STANDARDS WAS TO STAND OVER THEM

The Code: Publication

Responsibilities

- Disseminate
- Ensure accuracy of publication and dissemination
- Cite others fully and accurately
- No multiple submissions
- Permission for republishing
- Disclose research support
- Manage confidentiality

http://gigomole.blogspot.com.au/2012/03/research-misconduct-problem-in.html

The Code: Authorship

Based on substantial contributions in a combination of:

- conception and design of the project'
- analysis and interpretation of research data
- drafting significant parts of the work
  or critically revising it
  so as to contribute to the interpretation

NOT

- tied to position
- technical support
- provision of materials
- A person who qualifies as an author
  must not be included or excluded
  as an author without their permission.
  This should be in writing and
  include a brief description
  of their contribution to the work.

Source: google image

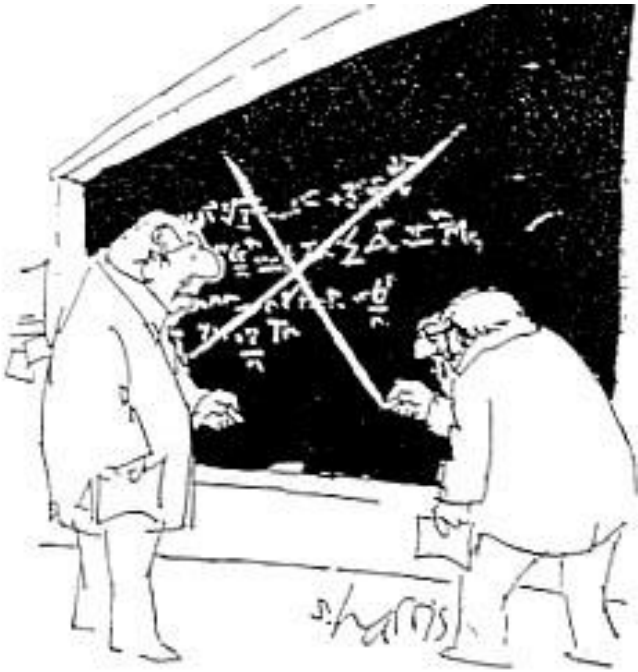
The Code: peer review

Responsibilities of peer reviewers

- Conduct peer review responsibly (fair, timely, in confidence, declare conflict of interest, not outside your area of expertise, no advantage)

Responsibilities of researchers

- Do not interfere during peer review process
- Participate in peer review
- Mentor trainees in peer review
- Declare conflict of interest



"That's it? That's peer review?"

http://bama.ua.edu/~sprentic/607%20outline-nature%20of%20science.html

The Code: Conflict of Interest

= divergence between the individual interests of a person and their professional responsibilities such that an independent observer might reasonably conclude that the professional actions of that person are unduly influenced by their own interests.

Responsibilities

- Disclose
- Maintain records of activities that may lead to conflicts
- UQ has a conflict of interest form

http://sentinelwealth.com/goldman_youve_got_some_splainin_to_do1/

(Self) Plagiarism

Do not reuse other people's words

Do not reuse your words

Not 100%

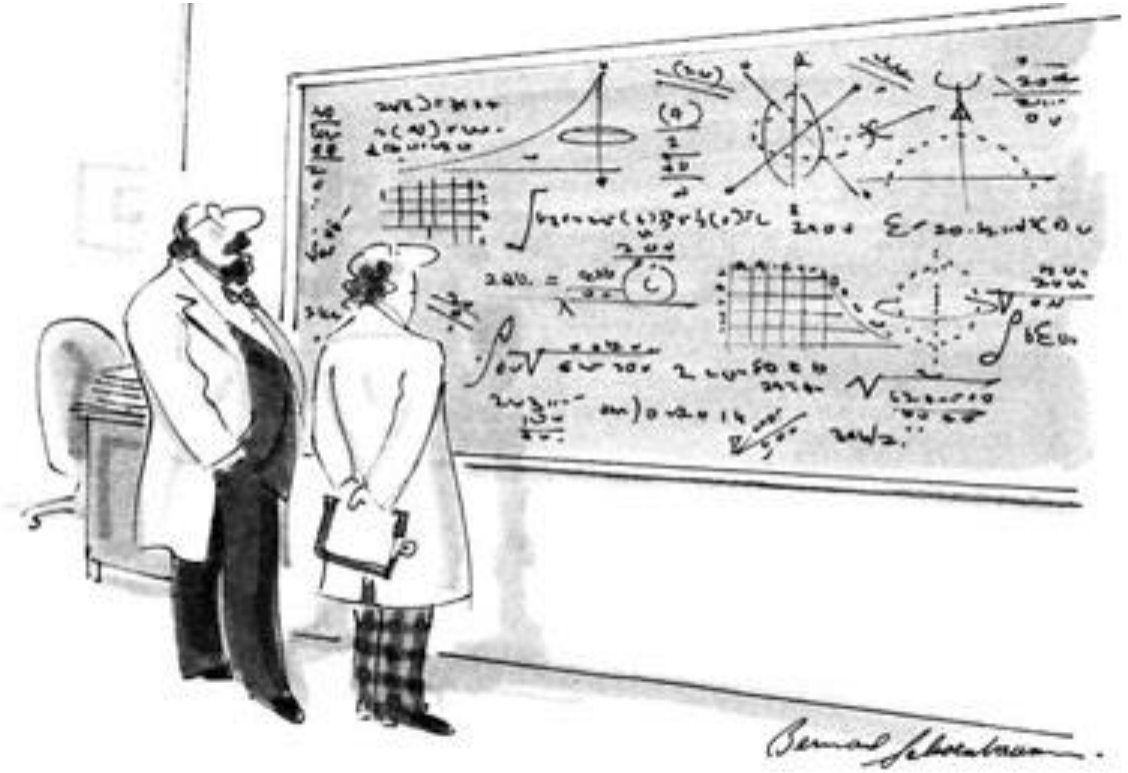
Not 50%

Not 1%

"Really? Someone told me it's not plagiarism if they're dead."

https://ilrb.cf.ac.uk/plagiarism/cartoon/

Not so simple on a day to day basis



"Oh, if only it were so simple."

http://www.condenaststore.com/-sp/Oh-if-only-it-were-so-simple-New-Yorker-Cartoon-Prints_i8543125_.htm

How about this …

- If you are paid as an RA and write the literature review for a paper, are you entitled to authorship?
- If you are paid as an RA and conduct data analysis following specific instructions from the author, are you entitled to authorship?
- If you have written a paper out of your PhD with no support from your supervisor, are they entitled to authorship?
- If you acknowledge someone who helped you with the manuscript, do you need their permission?
- If you use secondary data, do you need ethics approval?
- If you rent our a number of rooms on Airbnb, are you allowed to research Airbnb?
- If you collected data for your PhD, who owns the data? Can you use it later in life?
- If you wrote a conference paper first and then expanded it to a journal paper, can you reuse text sections?
- If you cannot reach one of your co-authors, can you still submit your joint paper?
- …

Don’t get yourself into trouble!

Read the code.

Ask your research integrity advisor.

https://www.pinterest.com/Biblioteca_UEX/humor-bibliotecariolibrarian-humor/

How about this?

Imagine you are working as a research assistant for an academic. You are employed as a casual research assistant which means that you keep a timesheet and you get paid fortnightly based on the hours you have worked. This time you have been asked to compile literature and write up a literature review for a manuscript.

What are the authorship implications of this situation for you?

If you feel you are entitled to authorship, imagine the academic who is employing you disagrees, saying that you have been paid for this work?

What can you do?

How about this?

Imagine your supervisor is very busy, so you have been writing journal articles pretty much on your own.

Do you need to put your supervisor's name on the manuscript as your co-author?

How about this?

Imagine that you have undertaken a huge online survey study. The study includes a substantial number of questions.

Can you use the same data set as the basis for two publications?

Who owns the data?

How about this?

Imagine that – for one research question – you find that the sample size is actually too small which means that your statistical test is unlikely to detect and significant differences.

Can you copy and paste a section of the data just to get enough sample to be able to perform the statistical analysis?

How about this?

The sharing economy is a hot topic nowadays. Imagine you have decided to undertake a study into Airbnb, the provider of shared accommodation options. You are interested in understanding how to design the online profile of the room as attractive as possible to ensure the most possible bookings. You are renting an apartment and – with the permission of the owner – are making one of the rooms in the apartment available on Airbnb.

Is this a problem?

Should you not be doing research on Airbnb?

How would you resolve this situation?

How about this?

Imagine you have written a conference paper based on the pilot test of your survey study. The pilot test only included 50 respondents, but in the main study you will actually have 1000 respondents. You have decided to publish the conference paper because your supervisor said that it is a great idea to present initial results for feedback. The paper is accepted at the conference and published in the conference proceedings.

Are their any implications for the journal paper you are planning to write based on the full sample of 1000 respondents?