From researcher to author: research integrity and publication ethics
A publisher’s perspective
23 November 2023
About Springer Nature
180 years of history in publishing

A couple of key figures
- 3000+ journals
- 400,000+ published articles
- 13,000 books
- 90,000+ editors
- 750,000+ reviewers
- 9000+ employees in 45 countries

nature portfolio

Scientific American

palgrave
macmillan

BMC
And a bit about me...
Head of Research Integrity, Resolutions at the Springer Nature Research Integrity Group

A couple of key points and figures
- Background in philosophy
- 10 years at Springer Nature
- 7 years in research integrity
- 13 people in my team
- A lot of research integrity cases (I’ve lost count!)
- +/- 3000 retractions (guesstimate, also lost count)

- I’m on the trustee board of the Committee on Publication Ethics (COPE)
Impact of research misconduct

Why it matters

- Influential study by Sato Y. et al. (Effect of Folate and Mecobalamin on Hip Fractures in Patients With Stroke: A Randomized Controlled Trial, JAMA (2005) 239(9):1082-1088)
- Retracted in 2016 for data integrity issues, but the impact was already massive, as shown by Avenell et al.
- Just one example: B-PROOF trial (van Wijngaarden 2014)
- Conducted with a public research grant of €583,550

Permeation of a single trial report

Research integrity: what can go wrong?
Even more, on an industrial scale...

Paper mills

- ‘Service provider that writes research articles for paying customers
- Data may be fabricated, plagiarized or taken from existing data repositories
- ‘Service’ may include submission and revisions to a journal
- May involve fake reviewers and selling of authorship
- The latest challenge: AI generated papers!
Research integrity: what can go wrong?
Next level: AI generated images

Deepfakes: A new threat to image fabrication in scientific publications?
Liansheng Wang * Liangyu Zhou * Wenxian Yang * Rongshan Yu

Source: © 2022 Liansheng Wang et al
These esophageal cancer images are deepfakes that were created by a generative adversarial network
We’re no stranger to paper mills
Numerous cases over the years

Paper mills have been targeting Springer Nature journals across various fields
• Biomedicine, particularly cancer research
• Computer science
• Mathematics
• And geosciences

Journal about ‘ambient intelligence’ retracts more than 50 papers at once

Perhaps the Journal of Ambient Intelligence and Humanized Computing needs to look for a different kind of smarts.
We know the rules, but so do they
Paper mills are getting more sophisticated

Handling cases, spotting trends and patterns

- New type of paper mill gets flagged
- We clean up the literature
- Adding automated additional checks in QC
- ...
- ...
- ...
- Rinse and repeat?
Fully committed to protect the literature
But more automation may not always be the answer

Prevent: invest in tools, share data and insights

● Technology backed prevention measures
● Collaboration within STM Solutions

Correct: invest in specialists, streamline workflows

● Correcting the literature, retracting articles involves human specialist intervention
● Recent experience has proven there is room for improvement to be better and more effective to correct the literature on a large scale
● It’s possible to move fast and be COPE compliant!
Fix the literature
What actions do we take?

- Corrections
- Editor’s notes and Expressions of Concern
- Retractions
- Report to institutions and other stakeholders

- Retractions should be considered a neutral tool to correct the literature
- Adhere to the COPE retraction guidelines
- Be as open and transparent as possible

Retraction ≠ punishment
DOING RETRACTIONS AT SCALE
Retractions are public, might as well talk about it
Science Publisher Retracts 44 Papers for Being Utter Nonsense
Springer Nature slaps more than 400 papers with expressions of concern all at once
SIZING UP THE PROBLEM
From 44 to 400 articles to many retractions

A large number of problematic articles, including compromised guest-edited issues
Several concerns were identified, including but not limited to:

- Incoherent text and/or ‘tortured phrases’
- Irrelevant citations
- Compromised peer review and/or compromised editorial process
Raising awareness: when researchers become authors
How publishing research teaches researchers about research integrity and publication ethics

1. Normative function of editorial policies
   What if your research can’t be considered for publication?
   - Editorial policies follow generally accepted guidelines and best practices
   - How publishing and doing research with integrity amplify each other
   - Check COPE, ICMJE, ESA, editorial policies before you start research, not after!

2. Educational aspect of correcting the literature
   Corrections, Expressions of Concern and retractions protect the integrity of the record
   - Post publication editorial action is also educational for both editors and authors
   - Retractions can show potential pitfalls to avoid
   - Complicated cases itself serve as learning points for editors and authors
   - Publisher can ensure consistency, provide support and resources for editors
Taking the lead in research integrity as a publisher

Keeping the literature safe
THANK YOU

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