

Sunlight is the best disinfectant?

Retractions and the role of open access

Introduction: What are “retractions”?

Retractions can be considered as part of the “self-purification” of science: If a journal article contains serious errors or violations of good scientific practices the publication should be retracted. Depending on the type of defectiveness, notices about problematic journal articles can be published as (see Sox & Rennie, 2006):

- “correction” (for minor flaws),
- “expression of concern” (for initial suspicion),
- proper “retraction” (for misconduct).

Especially in Medicine and other Health Sciences the detection of problematic publications and their retraction is essential in order to protect patients and public health.

Data collection

For this proof of concept study retractions and other notices such as corrections or expressions of concern were retrieved from “Retraction Watch Database” (<http://retractiondatabase.org>) for publications from the Health Sciences published in 2019 (n=154, retrieved on Jan 8th 2020).

Next steps:

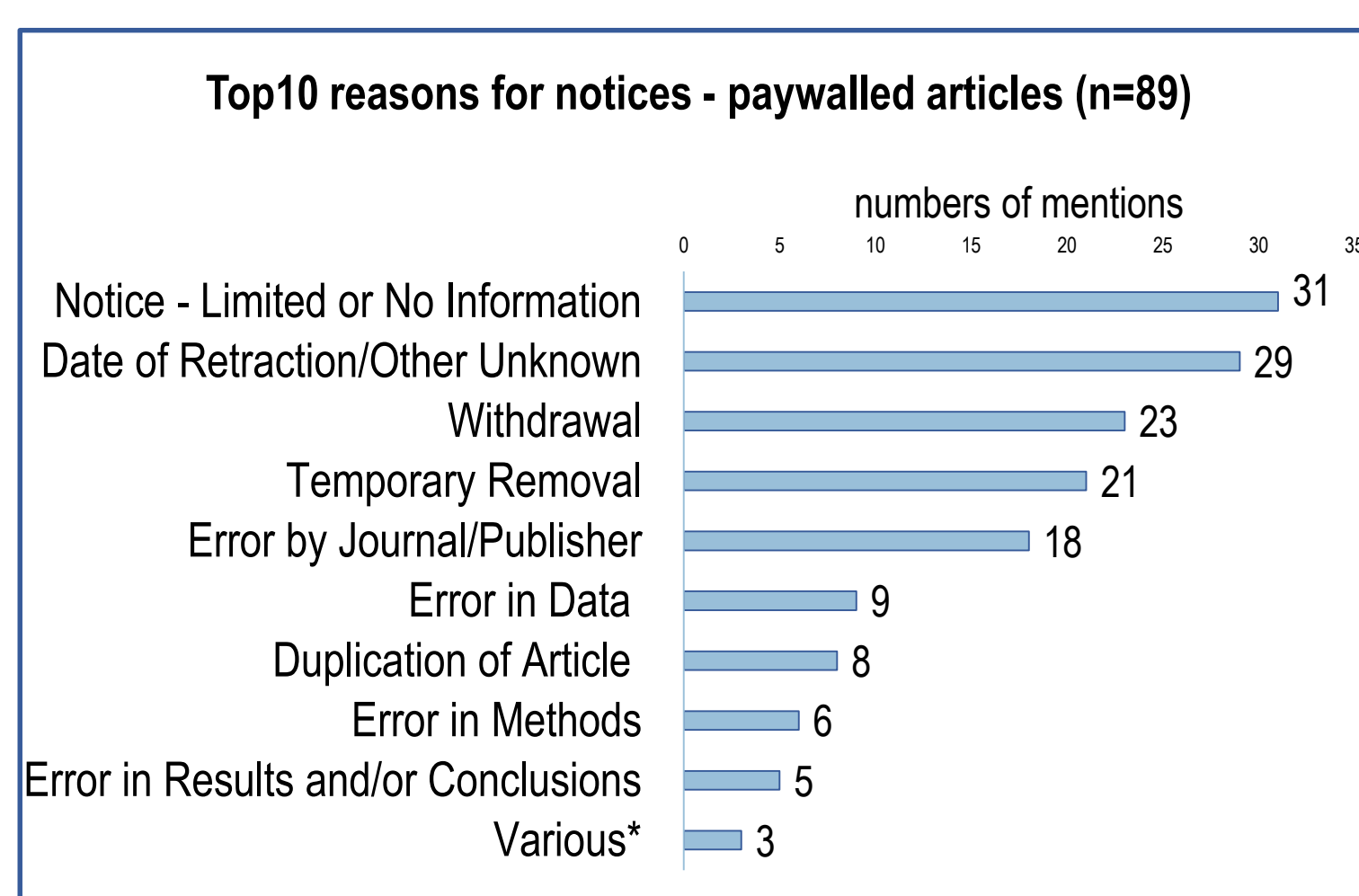
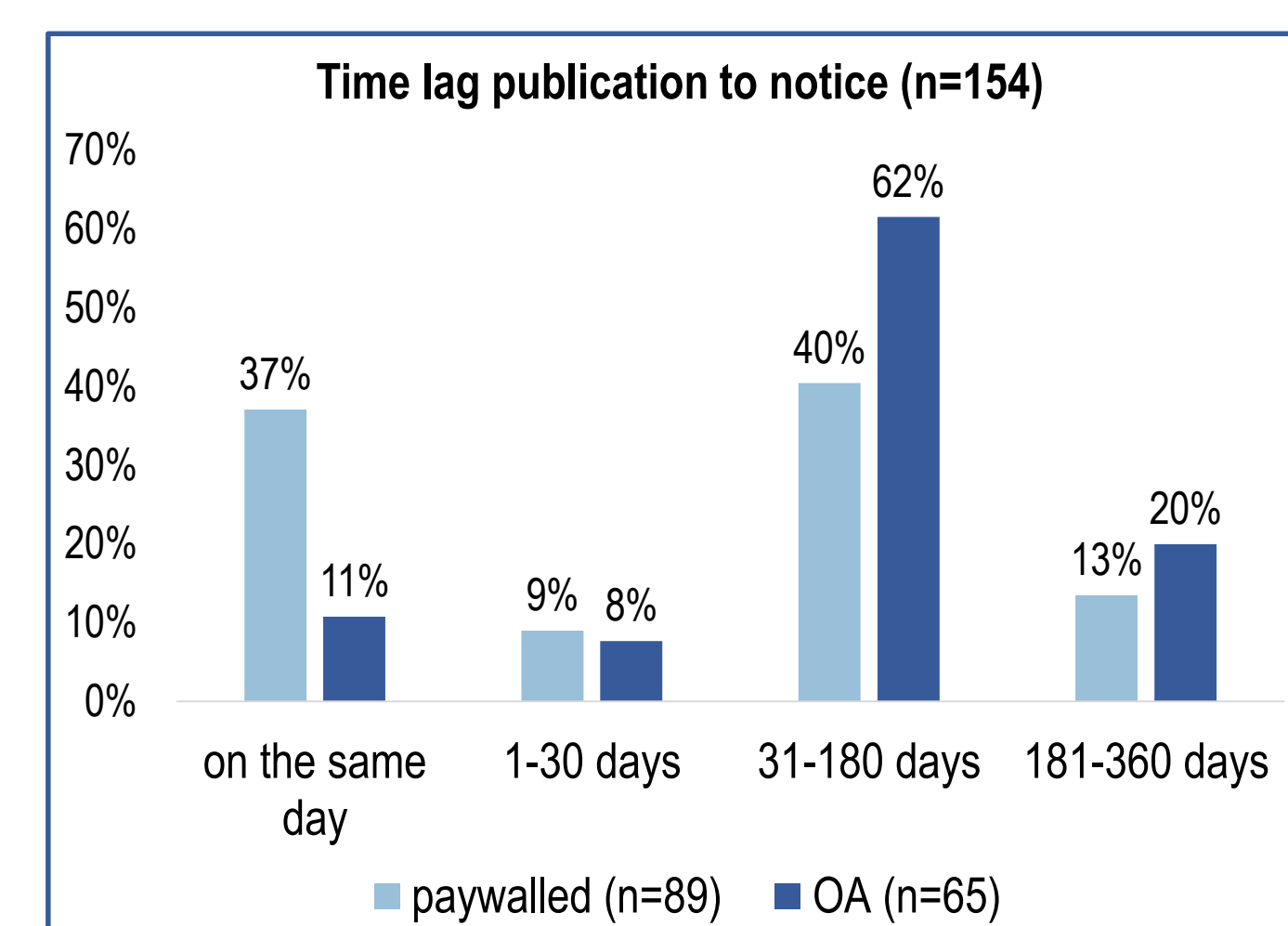
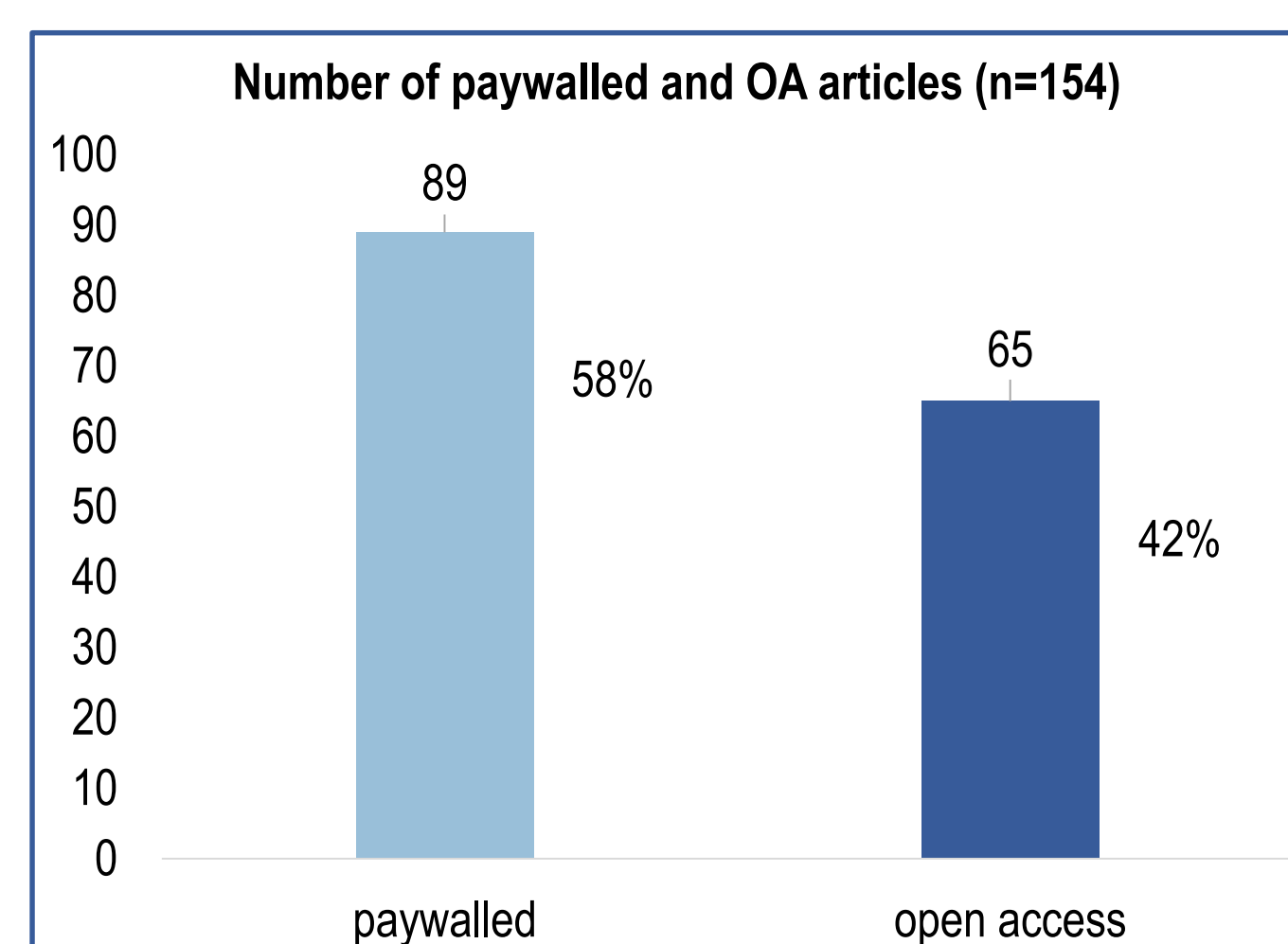
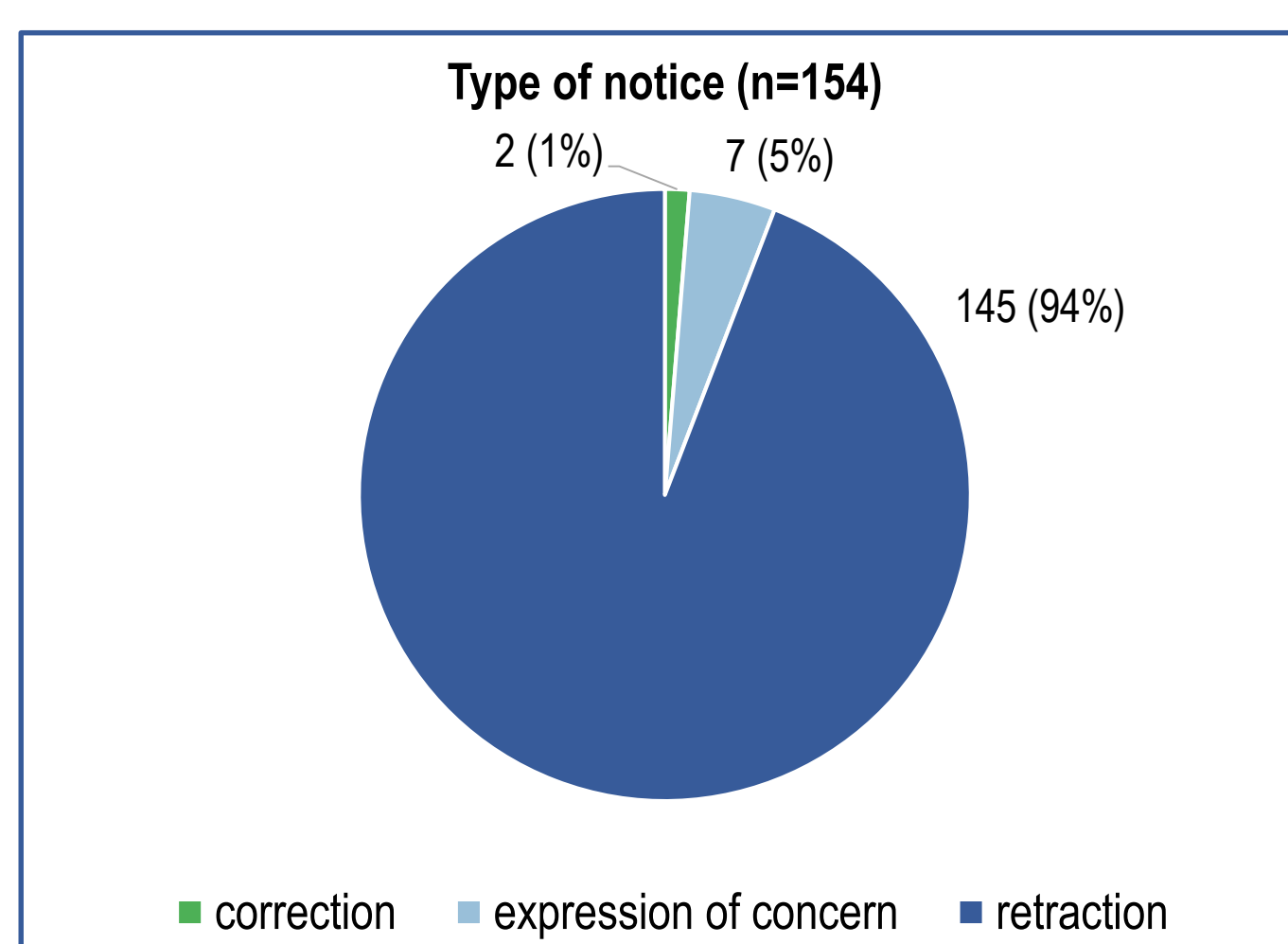
- Identification of OA status on journal level via SHERPA/RoMEO (<http://sherpa.ac.uk/romeo/index.php>): Are there links to the Directory of Open Access Journals database (DOAJ – <https://doaj.org>), mentions of hybrid programs (such as Author’s Choice etc.)?
- Manual checks on article level for journals the OA status in SHERPA/RoMEO is unclear or hybrid.
- Additional checks via browser plug-ins from Unpaywall (<https://unpaywall.org>) and Open Access Button (<https://openaccessbutton.org>) to find alternative OA versions for paywalled articles.

Retraction Watch Database was chosen for its rich metadata for retractions and other notices.

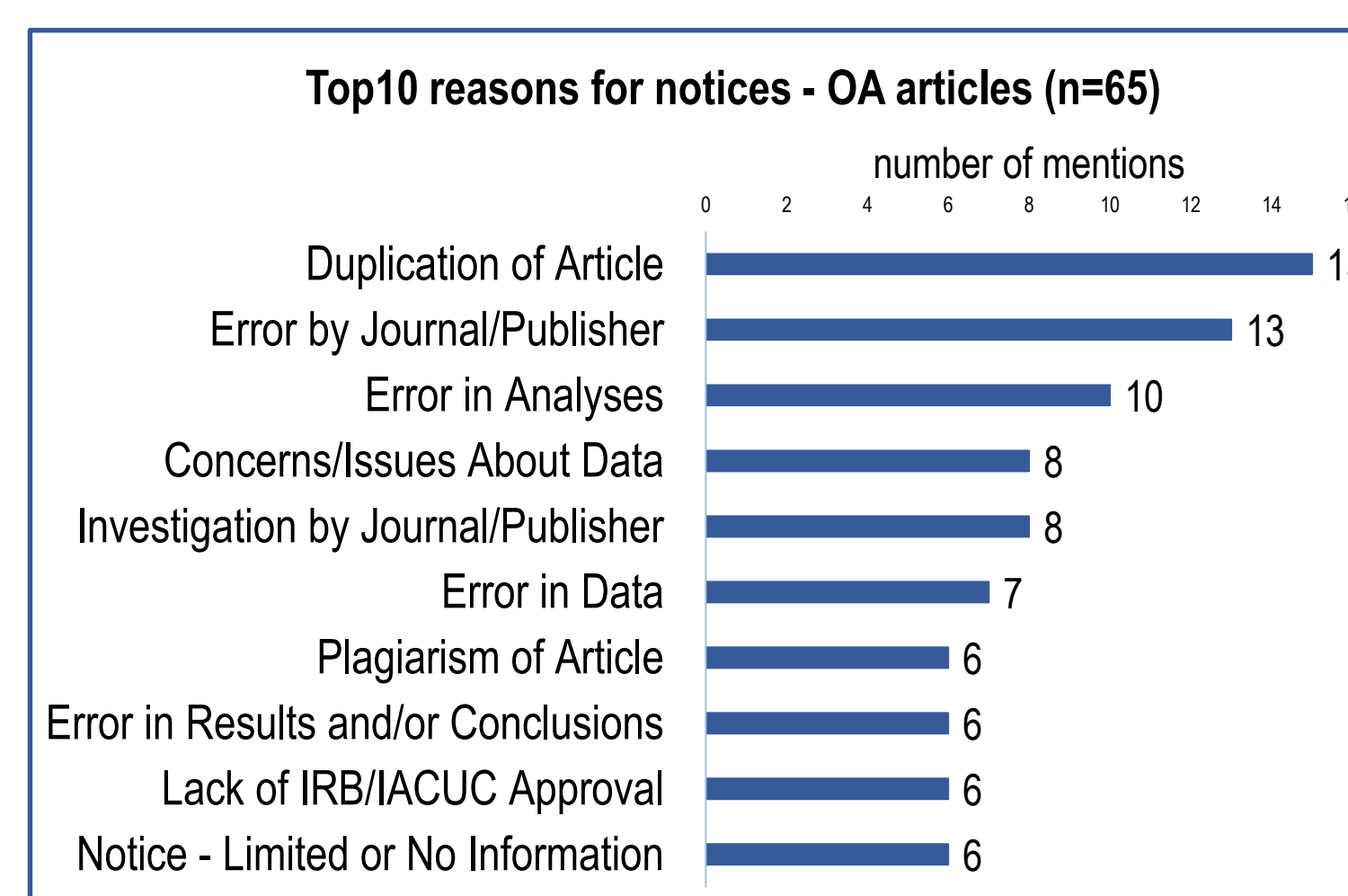
Retractions and open access

Open access as an essential part of the open science movement is intended to increase transparency of science as such. The overall question therefore is: Which role does open access play with regard to retractions?

Results



- Plagiarism of Article
- Lack of Approval from Company/Institution
- Lack of Approval from Author
- Error in Text
- Concerns/Issues About Data
- Unreliable Results
- Retract and Replace
- Error in Analyses



Note: Usually more than one reason is stated – 73% of the notices for paywalled articles and 82% for OA articles report more than one reason. Retraction Watch Database lists more than 90 different reasons. For a complete list of reasons with descriptions, see <https://retractionwatch.com/retraction-watch-database-user-guide/retraction-watch-database-user-guide-appendix-b-reasons/>.

Discussion

- Dark number syndrome: Only a small number of publications is retracted, the total amount is unknown (Oransky, 2018).
- Share of articles which are paywalled is higher in the analysed data set.
- Contrary to our initial assumption, the time lag between publication and retraction (or other notices) is longer for open access articles; more than 37% of the paywalled articles are retracted on the same day as they were published (11% for OA articles); more than 80% of the open access articles are retracted within 2-3 months or later (paywalled articles: 53%)
- Reasons for notices differ: For paywalled articles TOP10 reasons are often opaque or do not provide detailed information, TOP10 reasons for OA articles report incidents of errors or plagiarism. Maybe this explains the large number of retractions or other notices on the same day of publication; it takes longer to detect any kind of misconduct, error or fraud (see also Wang et al., 2019).

Lessons learned

- Retraction Watch Database does not provide an API – results need to be copied or parsed; for larger projects provider can be contacted.
- Retraction Watch Database does not contain a complete list of retracted publications (project of volunteers, dark number syndrome).
- Difficulties to determine OA status using SHERPA/RoMEO; consulting the DOAJ database instead or direct manual checks on journal/article level might be less time consuming.
- Browser plug-ins from Unpaywall and Open Access Button retrieved just one single additional OA version.
- For publications which do not provide detailed or standardised information for publication dates Retraction Watch Database uses a date convention; time lags therefore provide just a rough indication.
- Strict definition of the Budapest OA Initiative (www.budapestopenaccessinitiative.org) cannot be applied, term “open access” often simply means “free access”.

References

- Oransky, Ivan: Which kind of peer review is best for catching fraud? Retraction Watch, 12/20/2018. <https://retractionwatch.com/2018/12/20/which-kind-of-peer-review-is-best-for-catching-fraud>
- Sox HC, Rennie D.: Research Misconduct, Retraction, and Cleansing the Medical Literature: Lessons from the Poehlman Case, Ann Intern Med. (2006);144: 609–613. <https://doi.org/10.7326/0003-4819-144-8-200604180-00123>
- Wang, T., Xing, QR., Wang, H. et al.: Retracted Publications in the Biomedical Literature from Open Access Journals, Sci Eng Ethics (2019) 25: 855–868. <https://doi.org/10.1007/s11948-018-0040-6>