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The Limited Communication of Corrections to Users of Scholarly Platforms

Wytske M. Hepkema¹  | Frédérique Bordignon^{2,3}  | Willem Halffman¹ 

¹Institute for Science in Society – Radboud University, Nijmegen, the Netherlands | ²ENPC, Institut Polytechnique de Paris, Marne-la-Vallée, France | ³LISIS, INRAE, Université Gustave Eiffel, CNRS, Marne-la-Vallée, France

Correspondence: Wytske M. Hepkema (wyske.hepkema@ru.nl)

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ABSTRACT

Formal corrections of research publications should be clearly communicated to users of the scholarly literature, especially when these corrections have consequences for reported knowledge. However, the information that a publication was corrected is not always shared and indicated clearly. To test correction communication, we formed a corpus of publications with corrections most likely consequential to their reported knowledge. To this end, we selected 3177 publications that were recently corrected according to Crossref and that received at least two comments on PubPeer. We used this corpus as a probe to assess correction communication on a range of scholarly platforms. The majority of these platforms does not indicate the presence of corrections together with the entry for these publications: Web of Science, OpenAlex, Dimensions, Google Scholar, Lens, Mendeley, Zotero, Endnote and Elicit. Those that do indicate the existence of corrections, do so for nearly all corrected publications as follows: Scopus 90.8%, PubMed 98.7%, EuropePMC 98.8%, Scite.ai 99.7% and the journal's webpage 94.4%. Even when the presence of a correction is communicated, this is not always indicated clearly. Readers of the scholarly literature might miss corrections when they are communicated under a generic header such as 'referred to by', or only indicated by a small line of text in the same colours as the rest of the page. We provide suggestions for improved communication of corrections through better integration of information across platforms, improved labelling on platforms and the development of correction communication standards.

1 | Introduction

Through the scholarly literature, researchers learn about experimental procedures, data, results or theories and arguments suggested by scientists elsewhere. While forever imperfect, this literature gets updated and corrected by new publications, but also by corrections to already published works. For users of the literature, it is important that corrections are clearly communicated, especially if corrections are consequential to the reported knowledge. Some typos or administrative updates may not be very significant to all users, even if a typo in an author affiliation may have bibliometric consequences affecting research evaluation. However, if researchers fail to notice significant corrections, they may attempt to build on faulty research, leading

to further error, wasted research, failed replication or failed translation to practice and application. Similar concerns have led to more consistent and explicit communication of retractions (Boudry et al. 2023; Decullier and Maisonneuve 2018), but in contrast to these more drastic rectifications of the literature, corrections have so far received far less attention.

The most obvious place to signal the presence of a correction is the publication's page on a journal website. The presence of one or more corrections should be clearly visible on the page of the corrected publication, as specified in publication guidelines (ICMJE 2026). In addition, the correction notice should be open access—even when the publication itself is not (COPE Council 2024).

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Key Points

- Most scholarly platforms do not communicate corrections with the entry or on the page of the corrected publication.
- The scholarly platforms that do communicate corrections do so for nearly but not all corrected publications.
- When the presence of corrections is indicated, the communication is not always clear.

Since researchers may look for literature through bibliographic databases or reference software, these could be another channel for correction alerts. While looking up publications, a flag in databases such as PubMed or Web of Science (WoS) could encourage researchers to pay extra attention to corrections. For similar reasons, flags alerting users to retractions are now included in reference software such as Zotero (Cheng et al. 2019) or EndNote (Clarivate Analytics 2025). If researchers rely on green open access, publication copies in repositories may also need to flag significant corrections, as otherwise repositories risk spreading erroneous information.

Our study investigates to what extent epistemically consequential corrections are communicated to users of scholarly platforms, that is, corrections that impact the knowledge claims of the publication. As a proxy of corrections consequential to the reported knowledge, we use the presence of at least two comments on PubPeer, a post-publication peer review platform (Knoepfler 2015). To represent a range of functionalities, we analyse journal websites, abstract/citation databases, reference management tools, AI research assistants and open repositories. Specifically, we analysed: The journals' webpages, WoS, Dimensions, Scopus, OpenAlex, Google Scholar, Lens, Mendeley, Endnote, Zotero, Scite.ai and Elicit. Our approach differs from previous studies, in that we do not focus on error communication by one or a few journals (Addelston and Goldsmith 1966; Bordignon 2023; Hubbard 2010), but on a wide selection of platforms. Our focus is on recent corrections (from the past 5 years).

The article continues with a description of current correction practices, followed by details about our data gathering and methods. The results describe the communication of epistemically consequential corrections for a corpus of 3177 publications on a series of platforms, ranging from journal websites and repositories to search and bibliographic tools. We conclude with suggestions for improved correction communication.

Research Questions

1. Which scholarly platforms indicate the presence of corrections together with the page or entry for the corrected article?
2. How consistently do scholarly platforms communicate corrections together with the page or entry of the corrected publication?
3. How clear is the communication of corrections together with the page or entry for the corrected publication to users of various scholarly platforms?

2 | Background: The What and How of Corrections

There are several types of post-publication editorial updates, which can be categorised as corrections, expressions of concern and retractions. Which of these should be applied, is specified in publishing association guidelines. The Committee on Publication Ethics (COPE) suggests that 'If only a small part of an article reports flawed data or content, this may be best rectified by a correction', as opposed to more substantial problems requiring a retraction (COPE Council 2019). The International Committee of Medical Journal Editors (ICMJE) states that 'corrections are needed for errors of fact that should have been recognised at the time of publication. Matters of debate and evolving science and methods are not errors' (ICMJE 2026). This distinguishes corrections from issues that should be addressed by some form of reply or commentary, that is, through further publications. Expressions of concern (EoC) are used to notify readers that a publication is under investigation. Although they are typically temporary labels, some EoCs are never resolved and become permanent (COPE Council 2025).

Crucially, these updates are applied to a publication *after* it is published and starts to circulate as a publication that has passed editorial assessment. All of these updates are therefore editorial interventions, that is, part of a journal's remit to curate publications, although they may be requested by others, such as authors or their institutes. In practice, the labels for these different post-publication updates are not as straight-forward. Corrections are also called errata, corrigenda or addenda. In addition, publications can get multiple post-publication updates, such as multiple corrections or a correction followed by a retraction, but also retractions that are corrected, or corrections that are retracted.

Besides guidelines for what requires a correction, there are also guidelines for how corrections should be communicated. Like other editorial updates, corrections should be published as a separate document in the same journal. COPE's further instruction for correction notices is very short and only states that a correction should be open access (COPE Council 2024). The US National Information Standards Organization (NISO) does not have separate guidelines for corrections, but parts of their guidelines for retractions might be applicable to corrections as well (NISO 2024). However, ICMJE has more elaborate guidelines for corrections. ICMJE advises to update the published version and that 'Previous electronic versions should prominently note that there are more recent versions of the article' (ICMJE 2026). ICMJE specifies that a corrected version of the article should also be published. The correction notice should describe what is problematic in the publication and should be linked on the publication's webpage, similar to retractions but without a watermark or stamp on all pages (ICMJE 2026).

In contrast to corrections, retractions have received considerable attention in scientometric and meta-research, supported by data from the Retraction Watch database (Andersen and Wray 2019; Hsiao and Schneider 2021). Studies documenting shortcomings in retraction communication also provide useful insights for correction communication. Poor visibility has been identified as one reason why retracted papers continue to be cited (Schmidt 2024). In a survey (De Cassai et al. 2022), 89% of authors citing retracted papers were unaware of the retraction,

mainly because it was ‘not adequately highlighted in the search database’ or ‘in the journal’, underscoring the importance of clear labelling across platforms. Some studies found retracted publications available without mention of retraction (Decullier and Maisonneuve 2018; Steen 2011), though more recent evidence suggests improvement (Bakker and Riegelman 2018). Compliance with ICMJE communication guidelines for retractions is limited (Elia et al. 2014; Suelzer et al. 2021), and visibility also differs widely across platforms, with Scopus and WoS often failing to match retraction labels found in PubMed or Medline (Bakker and Riegelman 2018; Boudry et al. 2023; Suelzer et al. 2021). Preprint servers and repositories also show gaps, as many versions of retracted papers remain unmarked as such (Avisar-Whiting 2022; Frampton et al. 2021).

Although retractions are studied much more, corrections are far more frequent. For example, the WoS lists 454,564 corrections and 23,133 retractions,¹ reporting numerous corrections even back when retractions were still sporadic. Among the rare studies of corrections, some focus on one research area, such as chemistry (Addelston and Goldsmith 1966; Hubbard 2010) or smaller fields within biomedical sciences, such as emergency medicine (Vural et al. 2022), COVID-19 research (Chatterton et al. 2023) and neurosurgical publications (Liu and Kaliaperumal 2022). Some studies include correction notice visibility and indexing (Bordignon 2023; Farrah and Rabb 2019). These studies suggest update labels are not always applied consistently. For a small set of corrections, Farrah & Rabb showed that some databases may include a separate record for a correction, but do not update the original record to communicate the presence of a correction or the other way around (2019). Bordignon showed another inconsistency: Some retractions (announced in retraction notices) are mislabeled as corrections on the journal's webpage for the publication. Interestingly, labeling mistakes made by the original source, for example, labeling a retraction as a correction, are not necessarily copied by the bibliographic databases (Bordignon 2023, 6). Recently, Aquarius et al. discovered that some corrections are not notified to the readers at all. They termed these stealth corrections and defined them as ‘at least one post-publication change made to a scientific article, without providing a correction note or any other indicator that the publication was temporarily or permanently altered’ (Aquarius et al. 2025, 1). The discovered stealth corrections included epistemically consequential changes, for example a figure that had been updated without a correction notice (Aquarius et al. 2025, 2).

Some particular scholarly platforms have received very little attention at all concerning the communication of editorial updates. Repositories may provide open access to publications, but rarely provide notice of their editorial updates. A recent study of the second-largest repository in the world, Hyper Articles en Ligne (HAL), found that there was no indication of retractions or corrections for the majority of updated publications. Only one of 62 corrected articles was listed as such, although the numbers were slightly better for retracted publications (Bordignon 2025a). A recent survey revealed that most repositories do not have any mechanism in place to check for post-publication updates (Hargitt 2025). However, as green open access copies might be earlier versions of the publisher's version or record, what is corrected in the official version might not need

correction in the repository (Bordignon 2025a). Differences between repository versions and publisher versions can also create other problems as discussed by Hinchliffe (2024). Besides repositories there are also new platforms that aim to help researchers find, select, organise and understand the scientific literature: AI research assistants (e.g., Elicit). Since these platforms are new, there are not many studies on how they (should) deal with retracted or corrected literature yet, though a study about ChatGPT shows there are some problems incorporating retractions (Thelwall et al. 2025). There is at least one opinion piece on how they should deal with retractions, in which Tay proposes two modes as follows: One that excludes all retracted works, and one that includes them but labels them as retracted (Tay 2025). Correction communication poses similar challenges for AI research assistants.

The available research shows that the communication of corrections remains a challenge, to which we aim to contribute with an assessment of the extent and clarity of communication across platforms.

3 | Data and Methods

3.1 | Corpus of Corrected Publications

Our aim was to assess the communication of epistemically significant corrections to users of various scholarly platforms. While all types of corrections should be reported properly, the consequences are bigger for corrections with consequences for the reported knowledge. For this purpose, we needed a corpus of publications corrected for significant errors in order to assess whether and how these publications are flagged as corrected in different platforms. To increase the number of corrections with consequences for the knowledge, we selected corrected publications with two or more PubPeer comments selected from publications marked as corrected on Crossref. Crossref shares publication metadata from a wide range of scientific publishers, accessible at scale through an API, including correction notices. For the purpose of this study, we therefore considered the correction status in Crossref as the starting point, although these data admittedly depend on how carefully journals communicate corrections to Crossref.

Corpus collection consisted of four steps (Figure 1). For the first step, we queried the Crossref API for correction notices (labelled correction, corrigendum, addendum or erratum) from the last 5 years (January 2020 till December 2024), and retrieved metadata (DOI, publisher, journal, title of correction notice) about the publications they correct. This resulted in 120,246 corrected publications.

Second, since publications may go through different update statuses and therefore receive multiple labels (e.g., a correction followed by a retraction) and since we focus on corrections, we excluded retracted publications and publications with an expression of concern (EoC), which left us with 117,354 publications. To this end, we excluded all publications that were labelled as retracted or as having an EoC by the Retraction Watch Database or had *retract**, *withdraw** or *expression* as the start of the title of the update notice or the publication.

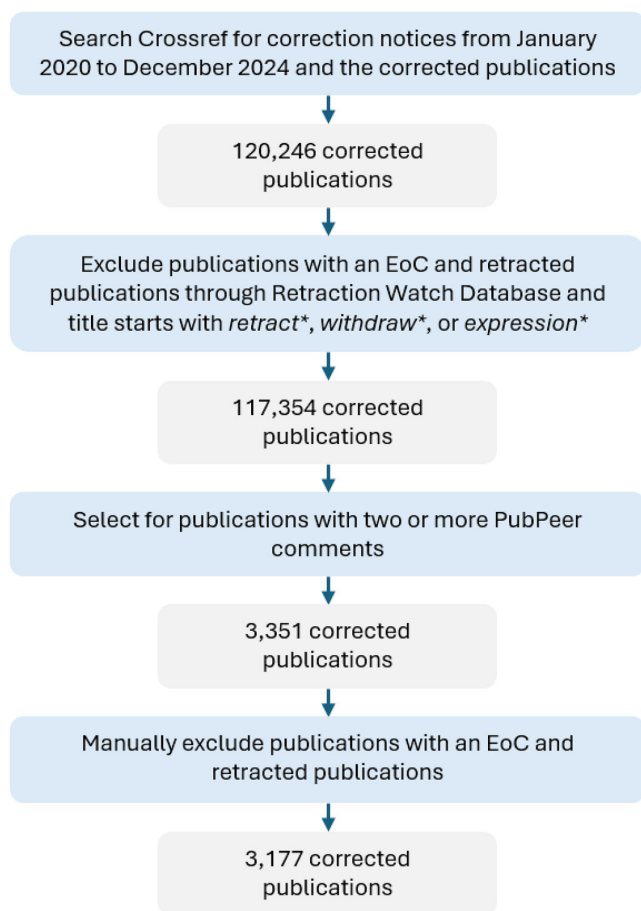


FIGURE 1 | Corpus creation workflow.

Third, we kept only publications with two or more comments on PubPeer, reducing our corpus considerably to 3351 publications. PubPeer is a platform that enables post-publication peer review, which means commenting on publications that are already published (Knoepfler 2015). Commentators can reveal their identity or remain anonymous. While PubPeer hosts all kinds of comments, such as journal club discussions of publications, more than two-thirds of the comments are to flag some sort of misconduct, mostly image manipulation (Ortega 2022). Therefore, we think that selecting corrected publications with two or more PubPeer comments is an adequate proxy to test the communication of significant corrections, while we acknowledge that likely not all of the publications in our corpus have a substantial correction. Using PubPeer skews our corpus towards biomedical publications, in correspondence with its main user base (Ortega 2022).

Lastly, we manually excluded all remaining retracted publications and those with an EoC that we previously missed. A corpus of 3177 corrected articles remained. The majority of these publications are published by Elsevier and Springer Nature, followed by Wiley, MDPI and Frontiers (Table 1, for a full list of all publishers in our corpus see Table S1). The median of PubPeer comments per publication was three, with a maximum of 223 comments on a single publication. There are 848 different journals in our corpus; Table S2 shows the journals with 10 or more publications in our corpus.

TABLE 1 | Overview of the most common publishers in our corpus of 3177 corrected articles.

Most common publishers	Number of publications
Elsevier BV	986
Springer Nature	975
Wiley	343
MDPI	222
Frontiers media SA	171

3.2 | Platform Selection

In our analysis, we included a variety of platforms through which researchers can obtain their literature in order to check how corrections are displayed on each of them. Although precise usage data are not universally available, we did aim for platforms researchers would typically use to consult the literature. We have selected platforms that, among the diversity of functionalities and services, present examples of: Journal websites, abstract/citation databases, reference management tools, AI research assistants and open repositories. We started with the journal's webpages, as these present the version of record. Typically, journal webpages are organised by the publisher, following its conventions and house style and therefore we also compare publishers.

Next, we included some of the well-known abstract and indexing databases, such as Scopus, WoS, PubMed, EuropePMC, Dimensions, The Lens (on [Lens.org](https://lens.org)), OpenAlex and Google Scholar. These databases differ in terms of coverage, disciplinary focus or search functionalities (Gusenbauer 2022).

To manage their literature, many researchers use reference software that integrates with text editors. Using browser plugins or extensions, one can easily add publications, often including the PDF file, which can then be read from within the referencing software. If users save references or entire texts stored here before post-publication updates are applied, then update warnings in this software are very useful. As Endnote (Clariivate Analytics 2025) and Zotero (Cheng et al. 2019) already flag retractions, and Mendeley is also widely used, we tested Endnote, Zotero and Mendeley.

We also included the browser plugin of Scite.ai. Scite.ai is a platform providing information about how a publication is cited, with a free browser extension for Chrome that pops up with citation counts and citation polarity (supporting, mentioning and contrasting citations). In addition, it also shows if an article has a correction or retraction. In the Chrome Webstore, Scite.ai has 100,000 users.²

A more recent development is AI research assistants, of which we have included Elicit. Instead of searching for keywords and getting a list of articles, Elicit generates a 'structured research report' plus a list of the sources in response to a question. Elicit claims to assist researchers with literature reviews, including systematic reviews.

Researchers can also obtain publications through open repositories. However, whether these should also always communicate corrections is a difficult question. As Bordignon (2025a, 5–6) suggests:

‘open repositories inherently destabilise the scholarly record; indeed, they are not a perfect reflection of what has been officially published: They can archive a copy of the published official version (version of record) but also an “unofficial” version from the author, either before acceptance by the journal (preprint) or after acceptance (postprint). The reason that led to a correction or retraction may not exist in the version deposited in an open archive, for example an error may have been introduced in a later version than the initial shared preprint’.

Therefore, we decided not to test which open repositories communicate corrections and how consistently they do so, but only to look at what correction communication in open repositories could look like, by showing two examples of repositories that do communicate them. These were repositories that answered *yes* to the question ‘Do you currently have a mechanism in place to check for retraction, errata, corrigenda or other updates to the scholarly content that you provide to users?’ in a repository survey (Hargitt 2025), namely the KU Leuven and Chapman University repositories.

3.3 | Platform Testing

To answer the three research questions, we took a three-step approach (Figure 2).

To determine which platforms communicate corrections on the entry of the corrected publication, we checked a subsample of 343 publications for each platform (based on Cochran’s formula for size determination (Ahmed 2024), see Supporting Information: [methods](#)). For PubMed, this step was automated using the API (with the Octoparse no-code tool³) by checking if the field ‘erratum in’ was in the reference field in the JSON output file.⁴ For the other platforms, we checked the subsample manually. If on the pages of these 343 corrected publications there was no communication about the correction,

we concluded that the platform does not communicate corrections on its publication entries, or, to be precise, at most sporadically.

For the platforms that did communicate corrections, we continued with the second research question. To assess how consistently platforms communicate corrections, we tested for the full corpus. Again, for PubMed, this step was automated. For the other platforms, we checked the full corpus manually. For the 153 publications that displayed multiple corrections on the journal’s webpage, we checked if the other platforms displayed multiple corrections as well.

To determine the clarity of the correction communication, we inductively gathered and compared visual and textual signals used on the platforms. As there are no formal guidelines on how corrections should be communicated, and the guidelines for retractions do not necessarily translate, we took a bottom-up approach of inductive coding.

More details about the corpus creation, data collection and analysis can be found in the Supporting Information: [methods](#).

For both institutional repositories, we selected all the publications in our corpus affiliated with this institution (using affiliations in Scopus) and then searched the repository for these publications using DOIs. This was successful for the repository of KU Leuven, but for the Chapman University repository, this resulted in zero publications; hence, we instead searched Scopus for the affiliation Chapman University and document type erratum, implying these are not necessarily epistemically consequential corrections.

4 | Results

4.1 | Which Platforms Communicate Corrections?

The majority of platforms where researchers can obtain scientific literature do not communicate corrections on the page of the corrected publication (Table 2). Based on the 343 randomly

TABLE 2 | Overview of which of the tested platforms communicate corrections on the page where the corrected publication is displayed.

Platforms that communicate corrections	Platforms that do not communicate corrections
EuropePMC	Dimensions
Journal’s webpage	Elicit
PubMed	Endnote
Scite.ai	Google Scholar
Scopus	Lens
	Mendeley
	OpenAlex
	Web of Science
	Zotero

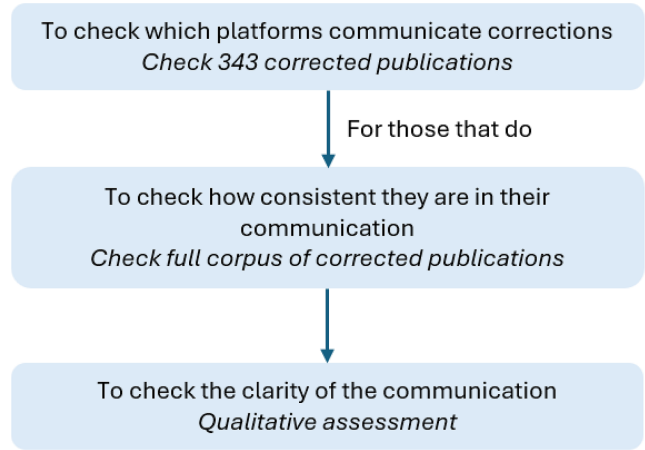


FIGURE 2 | Methods overview, to check the communication of corrections on the page or entry of the corrected publication.

selected articles we checked, we found that WoS, OpenAlex, Dimensions, Google Scholar, Lens, Mendeley, Zotero, Endnote and Elicit do not systematically communicate corrections on the entry of the corrected publication. Beside the journal's webpage, only PubMed, EuropePMC, Scopus and the Scite.ai browser extension signal corrections.

While WoS, OpenAlex, Dimensions, Google Scholar, Lens, Mendeley, Zotero, Endnote and Elicit do not communicate corrections on the page of the corrected publication, researchers might still notice the correction. When searching for keywords or a title, the correction notice might also pop up in the query results besides the publication, which an observant researcher might spot. In addition, in rare cases, a change to the title of the corrected publication was made, which would also alert the reader to the correction notice. There was one instance in Elicit for which the entry of the corrected publication had the pdf of the correction notice attached instead of the pdf of the corrected publication.

4.2 | How Consistent Are They in Their Communication?

The platforms that communicate corrections do so with high consistency, as shown in Table 3. Scite.ai, PubMed and EuropePMC correctly flag over 98% of the publications in our corpus, while Scopus achieves a rate of just over 90%. One might expect that journal webpages communicate corrections for all corrected publications, since the journal is the origin of the information and the source of Crossref data (our starting point). However, this is not the case: Only 94% of the publications were communicated as corrected to the user on the page of the journal.

There are differences between publishers (Table 4): Wiley and MDPI communicate corrections for all tested articles, Springer

Nature for 99.5%, Elsevier for 85.6% and Frontiers for 97.1%. This lower number for Elsevier can partly be explained by how it communicates corrections: For corrected publications, Elsevier has a text box marked as referred to by, followed by a link to the correction notice. In some cases, the correction notice starts with *correction*, *errata* or another synonym; in other cases, it does not and simply has the same title as the corrected publication. As the 'referred to by' header was also used to link to other types of articles and not only correction notices, if the word *correction* or a synonym was not used, we counted these cases as not visibly communicated. However, an observant reader might spot that the publication they read is 'referred to by' another publication with the exact same title and might realise this constitutes a correction.

Some publications have multiple corrections on the journal's webpage, but this does not always translate to the different platforms. Scite.ai communicates multiple corrections in all cases, PubMed and EuropePMC communicate them in most, but not all cases (114/141 for PubMed and 120/143 for EuropePMC), and Scopus not at all. There are differences between the journal's webpages and PubMed and EuropePMC. In some cases PubMed and/or EuropePMC miss a correction, in other cases the journal's webpage has two corrections, but PubMed and EuropePMC label it as one correction and one EoC.

4.3 | How Clear Is the Communication of Corrections?

Scopus, PubMed and EuropePMC communicate corrections similarly (Table 5). Scopus has a box with a blue outline underneath the publication title with an icon of a blue exclamation point marked Update notice, followed by the title, journal and volume of the correction notice (Figure S1). PubMed has a similar header marked erratum in underneath the author

TABLE 3 | For the platforms that do communicate corrections, how consistently do they do this.

	Total number of publications	Of which communicated as corrected	Percentage
Scite.ai	3177	3166	99.7%
EuropePMC	2845	2810	98.8%
PubMed	2704	2669	98.7%
Journal's webpage	3176	2999	94.4%
Scopus	3163	2872	90.8%

TABLE 4 | An overview of visibly corrected publications on the journal's webpage for the most common publishers in our corpus.

	Total number of publications	Of which communicated as corrected	Percentage
Wiley	343	343	100.0%
MDPI	222	222	100.0%
Springer Nature	976	971	99.6%
Frontiers Media SA	171	165	97.1%
Elsevier BV*	986	844	85.6%

*We've only counted those that mention the word correction or a synonym; an observant reader might notice more.

TABLE 5 | Presentation of the correction on publication entries in scholarly platforms.

	Scopus	PubMed	EuropePMC	Scite.ai
The page displays a link to the correction notice	Yes	Yes	Yes	No
The page has a specific correction header	Yes	Yes	No	No
The correction is positioned high on the page (above the abstract or higher)	Yes	Yes	Yes	No
The correction is included in the main text section (as opposed to a sidebar)	Yes	Yes	Yes	No

information, followed by the title, authors, journal and volume of the correction notice. EuropePMC does not use a header, but otherwise similarly uses a blue box underneath the author information with *this article has been corrected*. Scopus, PubMed and EuropePMC all provide easy access with a link to the correction notice from the corrected publication. A bidirectional link (the notice linking to the publication, and the publication linking to the notice), is required according to the ICMJE guidelines, and for retraction communication sometimes called connectivity (ICMJE 2026; Xu et al. 2026). We only tested one side of the bidirectional link, whether the corrected article links to the correction notice. Scopus, PubMed and EuropePMC all use colours otherwise also used in their home-style, which is not very alarming.

The Scite.ai browser extension is a pop-up. On the right side of the screen, Scite.ai gives information about how a publication is cited, including a pencil icon followed by a number indicating the number of corrections (Figure S2). This does, however, not link to the correction notice, as a click on the pop-up box leads to Scite.ai. Unlike the browser plugin, the Scite.ai plugin for Zotero (Scite 2018) does not include correction information. While Scite.ai had a warning for nearly all publications in our dataset, warning for corrections is not the primary intended purpose of Scite.ai.

For the journal webpages there is a larger variation in how corrections are communicated (Table 6). Nearly all publishers use the same approach for all their journals, following the conventions of their house style, with the exception of Wolters Kluwer which differed in communication for some journals. Some publishers use a specific header to indicate a post-publication update, to display a change in the status of the publication, for example this article *has a correction* (AAAS), this article has been updated (PNAS) or corrections (PLOS). However, ten publishers used unspecific headers such as *connected content* (AIP, American Society of Haematology, American Diabetes Association, Rockefeller University Press, Portland Press Ltd.), *related content* (American Association for Cancer Research) or referred to by (Elsevier). Communicating corrections under these unspecific headers might mean that readers miss the warning, since they might skim over recommended publications, especially when many publications are shown under this header. The use of unspecific headers to communicate corrections suggests that publishers make use of a generic platform feature, instead of building a specific mechanism to warn readers of corrections. For example, the Royal Society of Chemistry labelled its corrected publications in a side column labelled associated articles (Figure S3). Since this is the place where

TABLE 6 | Presentation of the correction on the publication page at the publisher website.

	Number of publishers
The page displays a link to the correction notice	37/37
The page has a generic header (e.g., related content)	10/37
The correction is positioned high on the page (above the abstract or higher)	33/37
The correction is included in the main text section (as opposed to a sidebar)	35/37
The correction has an outlined or coloured box	25/37
The correction is in red/orange (deviating from colours in the website's design)	8/37
The correction shows the content of the correction notice	1/37

publishers typically recommend other publications instead of updates of the same publication, corrections are hard to spot, even though this publisher only uses this feature to communicate corrections, rather than related contents.

Although some publishers use an outlined or coloured box to communicate a correction, other publishers use a smaller line of text, easily missed if not in some bold colour. For example, SAGE indicates corrections by a hyperlink view correction, right underneath the authors, which are also blue hyperlinks and next to the DOI (Figure S4). Taylor and Francis uses a bold colour for their exclamation point icon, but the correction link is an inconspicuous line of text, lower on the page below the abstract, which means you may have to scroll down to spot it (Figure S5).

There was only one publisher (Wolters Kluwer) that showed the correction notice content on the corrected publication page, preventing the reader from having to check a separate page (Figure S6).

In both institutional repositories we analysed, we found an example of correction communication. In both cases it was a published publication—that is, not an author version. The Chapman University repository links to the full text, which led us to the

journal's webpage. In the case of KU Leuven, the site immediately downloaded the deposited PDF, but also the journal's official published version. Both repositories communicated the correction, but in a different way. Chapman University communicates the correction below the abstract in the text, without the use of a coloured outline or box, hence easily overlooked (Figure S7), but the reader might still see the correction on the linked journal website. In the repository of KU Leuven, the correction is communicated more clearly, as publication with corrigendum, in red with a red outline at the top of page (Figure S8). However, it does not link to the corrigendum, so a reader would have to search further to find out what was corrected.

5 | Discussion

We observed that the communication of corrections in the scientific literature leaves much to be desired. First, the large majority of platforms where researchers can obtain or find scientific literature do not communicate corrections on the page or entry of the corrected publication. Especially if bibliographic tools give direct access to publications (such as PDFs), even corrections that substantially affect their contents are easily overlooked. Second, those platforms that do communicate corrections do so for nearly all publications, but correction labelling is still incomplete. In addition, the labelling is not always very clear. Sometimes this is caused by repurposing a different platform feature to communicate corrections, such as the 'related contents' box or by using inconspicuous text on an information-dense page.

Similar to the improved communication of retractions, platforms are also changing their communication of corrections. For example, Dimensions has a dataset of problematic publications, currently only accessible on request, but they plan on integrating it into the interface, either as a filter or perhaps also as a signal to communicate corrections.⁵ Another initiative is an STM Integrity Hub⁶ working group on the communication of post-publication updates in open repositories—mostly focussed on retractions, but including corrections (Hargitt 2024), facing the complication mentioned earlier that corrections might not apply to the version in the repository (Bordignon 2025a).

To improve correction communication, there is some low-hanging fruit. First, platforms that do not communicate corrections could start to flag corrected entries. Whether specific platforms should signal corrections may depend on their idea of what the platform should be doing, but from the perspective of researchers, updates to the literature are relevant. If they list correction notices, the link already exists in one way (the correction notice links to the corrected publication), but a link in the other direction should be added. Second, for the platforms that do communicate errors, there is much to gain from bolder flags and marks, such as by using a colour that stands out from the platform's design, or using words like correction or updates as section headers rather than the cryptic 'referred to by'. Some standardisation of this communication across platforms would make it even easier for the reader to recognise corrections, though of course this might come with the cost of some freedom and contextuality (allowing for a difference between a correction and an addendum, for example).

This could be accomplished by standards set by NISO as they have for retractions (NISO 2024).

More advanced technical solutions could also assist correction communication. For example, Crossref has developed Crossmark, an icon on PDFs. When users click the icon, it shows whether the document is up to date, for example, whether it has been corrected. Not all publishers participate in Crossmark, and readers may overlook the logo, but this mark has correction communication potential. However, this currently requires an action from the user, namely clicking the mark to check for updates (Meyer 2011). Since updates are rare, users are not likely to systematically check for them. A mark actively displaying the presence of an update would be clearer, but this is not possible in PDFs.

Versioning has been suggested as a solution to stealth corrections (Aquarius et al. 2025). Versioning might have advantages in terms of transparency, as researchers should be able to see every change. However, there are also downsides. Versioning might actually blur corrections, as not every new version might really be a correction of an error. The different versions might not travel well between databases, as we already observed by the lack of multiple corrections in Scopus. Bibliographic databases largely hinge on the existence of one current version of record, at best with one post-publication status qualifier (EoC, corrected or retracted). For example, this lost eLife its listing in WoS, as WoS requires one single version of record and did not accept eLife's versioning system (Brainard 2024).

However, in the long run, the most effective way to improve correction communication would require an investigation of how researchers access the literature: When using another platform, do they still turn to the publisher's website? If so, improvement on the publisher's websites might suffice; if not, improvements in these platforms might be a better solution. Do researchers go back to the online version of a publication they previously read or saved locally? If not, would an addition of flags in reference software help them? Research on how readers find and access the literature could help optimise adequate correction communication.

6 | Limitations

Since we need a reference set, we started from Crossref data, but corrected publications that are not labelled as such in Crossref are not included in our corpus. Platforms that have a very high coverage of corrections most likely make effective use of the Crossref dataset. This is illustrated by the 100% consistency of communication of corrections by MDPI. This is somewhat surprising as MDPI ranked second among publishers in a corpus of publications with stealth corrections (Aquarius et al. 2025).

If publishers do not communicate corrections to Crossref, we underestimate the problem of imperfect error correction. As other research indicates that researchers alert each other to errors through informal means (Bordignon 2025b), we may overestimate the problem of error correction if researchers become aware of corrections through other channels.

As we selected for publications with two or more PubPeer comments and most PubPeer comments are on the biomedical literature (Ortega 2022), our findings are based on mostly the biomedical literature. However, as we focus on scholarly platforms and since journals are mostly organised at the publisher level, we deem it plausible that our analysis of correction communication can be extended to other fields.

As there are very few studies on the communication of corrections, we focused only on corrections. However, publications can get multiple different updates, such as a correction followed by a retraction; future studies could explore how multiple update notices are communicated across platforms.

Last, we analysed how corrections are communicated to the reader, but not how readers would receive this communication. As we focused on correction communication to users, this may overestimate actual visibility to actual users in all their diversity and varied contexts. While our study can signal the inadequacies of error communication, an assessment of effective communication would require a study with actual users.

Author Contributions

W.M.H.: conceptualisation, methodology, data curation, formal analysis, writing – original draft preparation; **F.B.:** conceptualisation, methodology, data curation, funding acquisition, writing – original draft preparation; **W.H.:** conceptualisation, methodology, funding acquisition, writing – original draft preparation.

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The dataset associated with this study is publicly available on Zenodo. The data can be accessed at <https://doi.org/10.5281/zenodo.21133475>.

Endnotes

¹ On January 6th, 2025.

² On August 18th, 2025.

³ <https://www.octoparse.com/>.

⁴ [https://eutils.ncbi.nlm.nih.gov/entrez/eutils/esummary.fcgi?db=pubmed&id=\[insertPubMedIDhere\]&retmode=json](https://eutils.ncbi.nlm.nih.gov/entrez/eutils/esummary.fcgi?db=pubmed&id=[insertPubMedIDhere]&retmode=json).

⁵ Private communication with Kathryn Weber-Boer of Dimensions.

⁶ <https://stm-assoc.org/what-we-do/strategic-areas/research-integrity/integrity-hub/>.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section. **Table S1:** Overview of the publishers in our corpus of 3177 corrected articles. **Table S2:** Overview of the journals with 10 articles or more in our corpus of 3177 corrected articles. **Figure S1:** An example of how Scopus communicates that this article has a correction, indicated by blue outlined box with 'update notice'. **Figure S2:** A corrected article from publisher Plos, indicated in a box titled *correction* and on the right side the scite.ai browser extension. The pencil icon followed by the number one indicates that this article has one correction. **Figure S3:** The royal society of chemistry communicates corrections under the *associated articles* header. **Figure S4:** An example of how sage communicates that this article has a correction, indicated by 'view correction' underneath the authors. **Figure S5:** An example of how Taylor and Francis communicates that this article has a correction, indicated by 'view correction statement' below the abstract. **Figure S6:** An example of how Wolters Kluwer communicates that this article has a correction, indicated by 'erratum' underneath the journal and doi, and the yellow box with 'erratum' and the content of the correction notice. **Figure S7:** Example of an article in chapman university repository with a correction. The correction is communicated below the abstract. **Figure S8:** Example of an article in ku leuven university repository—lirias—with a correction. The correction is communicated in red as 'publication with corrigendum' with a red outline at the top the page.