

# 50 Years of Editorial Practice: A Footnote Analysis of the Heinrich Bullinger Briefwechsel

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## Introduction<sup>1</sup>

Heinrich Bullinger (1504–1575) stands as one of the most influential figures of the European Reformation. His vast correspondence network spanned from Klyetsk (Belarus) in the east to La Rochelle in western France, from Rome in the south to Kolding (Denmark) in the north, encompassing scholars, theologians, scientists, kings, and counts. This extensive corpus, comprising over 12,000 preserved letters (2,813 by Bullinger himself), covers a wide range of topics from worldly news and theological debates to family matters.

The heterogeneous nature and historical significance of this letter collection necessitate careful explanation and contextualisation. To address this need, the *Heinrich Bullinger Briefwechsel* (HBBW) (Gäbler et al., 1973–2024) was established. Initiated in 1973, this classical edition project<sup>2</sup> has processed over 3,100 letters to date. Each volume features an extensive preface that contextualises the letters within their historical period, followed by the letters themselves. Each letter is presented with detailed metadata (author, recipient, location, date), manuscript information, and relevant secondary literature. The letters are then summarised (DE *Regest*), transcribed, and annotated with footnotes. Under the project *Bullinger Digital* the entire edition has been made available in machine readable format (TEI/XML)<sup>3</sup>. Figure 1 shows an example of an edited letter from volume 6 of the edition in its digital representation including the footnote apparatus.

Min ganntz fründlich und gütwillig diennst syen uch züvor, wolgelerter, besonder lieber her und fründ.

Uff die handlung, derenhalb ich jüngst vor einem ersamen rath der statt Zürich und by üch gewesen<sup>1</sup>, haben mine g[nädigen] h[eren] von Basel einem ersamen rath by üch durch zöigern diss briefs<sup>2</sup> schon tagsatzung ubersender<sup>3</sup> und sy darby gebetten, soliche tagsatzung denen von Schaffhusen und Sant Gallen, die ouch mit im botschaften zebesüchen, wüssend nit zeverhalten. Wolten ich uch der ursach nit bergen<sup>4</sup>, damit her doctor Joachim von Watt durch mittel, wie ir zethünd wol wissen, als ein bot von Sant Gallen verordnet und in disen schweren<sup>5</sup> sachen nit ussbliben thäte.

Damit, was uch lieb und dienst ist. Got verliche üch gsunthait und vil güter jar.

Datum zinstags den 4ten januarii anno etc. 36.

Hanns Rüdolf Frig, des rhatz der statt Basel.

[Adresse auf der Rückseite:]

Dem würdigen, wolgelertern hern Meister Heinrichen Bullinger, dienern des gothlichen worts zü Zurich, minem besondern lieben hern und fründ.

a Mit Unterstreichungen und Randbemerkung von späterer Hand. ①

1 Hans Rudolf Frey hatte im Dezember 1535 in Zürich über eine Zusammenkunft von Vertretern der protestantischen Städte verhandelt; s. HBBW V [Nr. 703], S. 477f, 2–24 mit Anm. 3.

2 Unbekannt.

3 eine Tagsatzung schriftlich angekündigt; s. das gleichzeitige Schreiben Basels an Zürich in EA IV/1c 598.

4 deshalb nicht verbergen.

5 schwerwiegenden, gewichtigen.

An example screenshot of the digitized version of HBBW. Shown is an edited letter of Hans Rudolf Frey to Heinrich Bullinger, dated to January 4, 1536. Originally published in volume 6 of the HBBW edition (Bächtold and Henrich, 1995)

Over the 50 years of editorial practice, the HBBW team has amassed an impressive total of almost 80,000 footnotes. These annotations encompass both text-critical remarks (addressing authorial mistakes, strikethroughs, marginalia, etc.) and what we term ‘factual footnotes’ (DE *sachkritische Anmerkungen*). The latter provide crucial contextual information, such as biographical details of individuals mentioned for the first time, explanations of specific terms, or descriptions of historical events. *Factual footnotes* make up 82% of the total footnotes and form the focus of this paper.

This substantial corpus of footnotes offers a unique opportunity to examine the evolution of editorial practices. Our study presents a detailed analysis of the HBBW footnotes, with the following objectives:

- To highlight the significance of footnotes as tools for historical contextualisation.
- To identify trends in footnote usage and content over the project's duration.
- To compare modern footnoting practices in general, contributing to the fields of Editorial Studies and library and information science.

Through this case study, we aim to provide insights into the changing nature of scholarly annotation and its role in making historical texts accessible to modern readers.

## Relevant Work in Footnote Analysis

### The Footnote's Origin and its Form

Footnotes in Central European printed books date back to the mid-17th century, emerging alongside the development of science and humanities (Freedman, 2020). Freedman defines footnotes by three key properties:

- Placement at the bottom of individual pages
- Arrangement in numerical, alphabetical, or symbolic order
- Correspondence between the footnote marker and its reference in the main text, usually on the same page

Despite this definition, footnote forms can vary depending on the base text.

### The Footnotes' Purposes and Analyses

Footnotes serve as more than mere remarks; they are tools with diverse functions across disciplines (Zerby, 2007). In computer science, they often provide technical details, while in theology, they reference, e.g., Bible passages. Historical research frequently uses footnotes for source references and extended discussions.

In epistemological writings, footnotes are often viewed as narrative and rhetorical devices (Grafton, 1999; Hammarfelt, 2010; Trüper, 2013). From a qualitative perspective, the presence and proper use of footnotes in historical research signifies professionalism and thorough scholarship (Grafton, 1999).

Quantitative research has explored the status and function of footnotes. Stevens and Williams (2006) examined the transmission of theory through footnotes in the journal *Critical Inquiry* from 1974 to 2004. They found that prominent scholars like Jacques Derrida, Sigmund Freud, and Michel Foucault were consistently cited, potentially forming a canon of expected references. However, they noted that citation frequency alone does not reveal how these works were interpreted or used.

Hammarfelt (2012a, 2012b) extended this approach through bibliometric analysis of literary studies footnotes. By creating co-citation maps from Swedish literature journals (2000-2009), he identified clusters of frequently cited authors. This revealed networks of scholars who likely influenced each other and were considered important in their field.

These studies demonstrate the rich potential of footnote analysis for understanding scholarly communication, canon formation, and intellectual networks. However, they also highlight the challenges of interpreting citation patterns without deeper contextual analysis.

## The Footnote in the Heinrich Bullinger Briefwechsel

Footnotes have been an integral part of the HBBW since its inception. Despite guidelines for the editing process in the first volume's introduction, there was no specific classification or usage instructions for footnotes. In total, the editors have annotated 3,113 letters with 79,573 footnotes, of which 65,855 (82.76%) are *factual footnotes*.

Taking a look at the footnote apparatus in Figure 1 reveals that footnotes are either marked alphabetically or numerically. With alphabetical footnotes addressing text-critical issues, reflecting their more specialized purpose. In contrast, numerical footnotes are used for a broader and more varied range of remarks, encompassing contextual, and interpretive information.

This variety in the functions of numerical (factual) footnotes raises questions about their usage patterns and how they have evolved over the 50-year editing process. Understanding these changes could provide valuable insights for future HBBW editors and contribute to broader discussions in editorial studies.

### The Bullinger Digital Project – Data for the Footnote Analysis

The *Bullinger Digital* project, initiated in 2020, began with digitising and crowd-correcting index cards containing letter metadata. This formed the basis for further processing, including text and footnote extraction from editions.

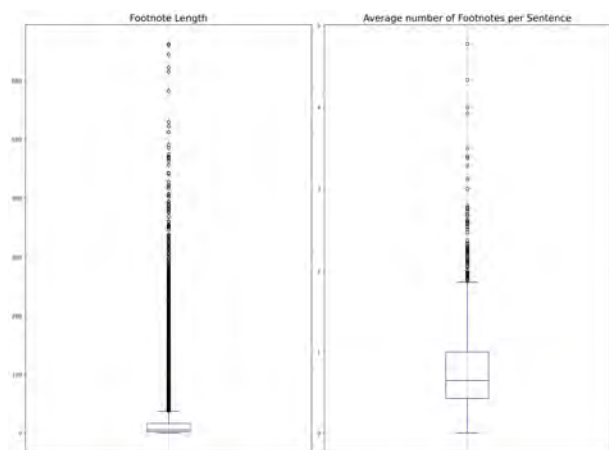
We utilised PDF files from the 2013 digitisation by *arpa Data GmbH*,<sup>4</sup> along with TUSTEP files where available, to extract texts and footnotes. Challenges in footnote extraction included varying layouts, multi-page footnotes, nested footnotes, OCR errors, and overflow of the footnote apparatus of one letter into the one of the subsequent letters. We converted the extracted data to TEI/XML format, employing control scripts and manual intervention when necessary.<sup>5</sup>

The general project combines these digitised editions with manual and automatic transcriptions of unedited letters, creating a comprehensive, searchable interface.<sup>6</sup> All data, including footnotes, is available on GitHub.<sup>7</sup>

### Footnote Length and Density

As alluded to above, factual footnotes are far from homogeneous and vary in their content and size. The distribution of footnote length is extremely skewed (see left side in Figure 2). While a small number of footnotes exceed 500 tokens, approximately 93% of footnotes are shorter than 50 words. This reflects a high degree of variability in the length of annotations, where most footnotes remain brief, but a handful serve as more detailed, extensive commentary.

Another way to analyze editorial practice is the density of footnotes, in other words, how many footnotes are set per sentence of the original text. The right side of Figure 2 shows the number of footnotes per sentence. The distribution is skewed: while 75% of the letters contain fewer than one footnote per sentence, a handful of letters have more than three footnotes per sentence.



Left: Length (number of words) of factual footnotes. Right: Average number of factual footnotes per sentence in a given letter.

## Footnote Content

We automatically categorized footnotes by function using simple heuristics (recurring patterns allowed the use of regular expressions), identifying seven types:

- **References within HBBW (inner\_ref):** Referring to a footnote or letter in another volume of the edition.
- **References to same edition in HBBW (self\_ref):** Referring to a footnote or letter in the same volume.
- **Unknowns (missing):** Hinting at lost information known to the letter writers, such as an unpreserved letter.
- **Referencing Bible verses (bible):** Contextualizing the letter with an implied or mentioned Bible verse.
- **Lexical references (lex or lex\_dict):** Short word explanations, often adding a modern variant or translation. The *lex\_dict* category also cites a lexical resource.
- **Miscellaneous:** All other types.
- **Short (short):** Miscellaneous but shorter than five words.

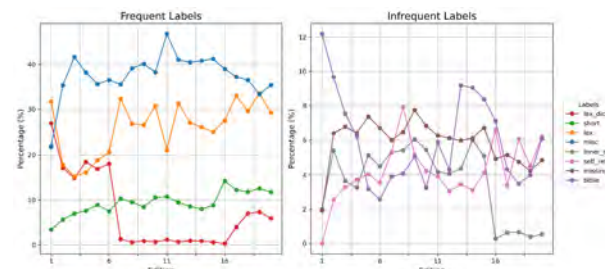
Figure 3 shows the label distribution across each edition volume, highlighting both frequent and infrequent categories to ensure trends in less common labels are visible. Volumes were released sequentially by number between 1974 and 2022, reflecting nearly five decades of evolving editorial practices. Figure 4 complements this by outlining the composition of editorial teams for each volume, showcasing personnel changes over time.

While it is unsurprising that references to earlier volumes of the edition (*self\_ref*) were minimal in the early phases,

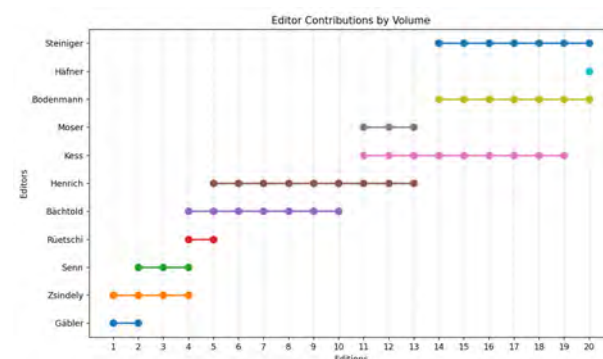
the first volume seems to be an outlier for other categories as well. In the first volume, lexical footnotes were the most prevalent, whereas in later volumes, the miscellaneous category consistently became the most dominant. Similarly, the categories *bible* and *missing* show notable outliers in the first edition. The first edition can be interpreted as an experimental phase, while over time, editorial norms were established, leading to greater consistency in label usage.

In addition to these overall trends, significant breaks are observed in specific categories such as *lex\_dict* (volume 7) and *inner\_ref* (volume 16). In volume 7, there is a sharp decline in the use of lexical footnotes referencing dictionaries, while references to the same edition experience a notable dip in volume 16. These deviations suggest shifts in editorial focus or strategy during those periods. The trend changes in volumes 7 and 16 do not co-occur with changes in the editorial team (see Figure 4). This points to strategic rather than personnel-driven shifts.

Figure 3 also highlights an inverse relationship between lexical and miscellaneous footnotes, particularly evident in volume 11. This volume stands out as an outlier, with an unusually high percentage of miscellaneous footnotes coupled with a low percentage of lexical ones. While this edition introduced two new editors, Moser and Kess, the same editorial team also worked on volumes 12 and 13 without repeating this pattern. As before, this suggests that the anomaly in volume 11 reflects a specific editorial decision rather than a direct result of the new team members.



Share of footnote categories over the editions.



Composition of the editorial team per volume.

## Primary and Secondary Sources for HBBW

The previous section's categorization left a significant residual category, divided into short and miscellaneous groups, which requires further analysis. A promising approach to explore these footnotes is to examine the cited literature. In the digital edition, citations are consistently marked with XML tags, and source abbreviations are standardized, making it easier to analyze the references systematically.

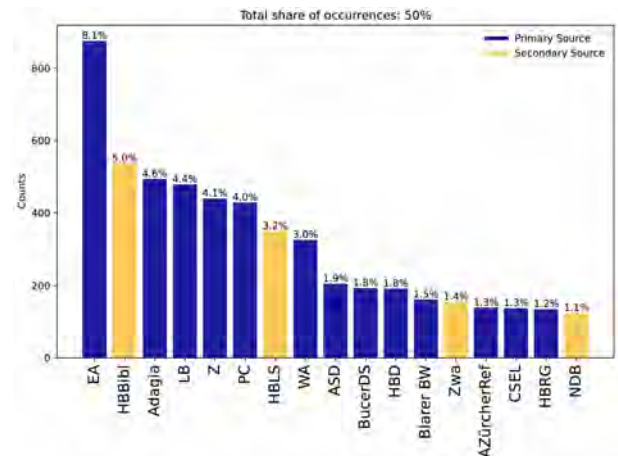
The reference list includes over 700 entries, but citations are highly unevenly distributed, with 50% coming from just 17 sources. As illustrated in Figure 6, most frequently cited works are primary sources, with only four of the top-cited sources being secondary literature. This suggests the editors predominantly rely on materials contemporary to Bullinger's time. A particularly notable case is Erasmus of Rotterdam, whose works (Adagia, LB, ASD) are cited across three different editions. When combined, Erasmus's works emerge as the most frequently cited, highlighting his significant influence on Bullinger and other reformers of the time.

Additionally, this prominence likely also stems from the accessibility and reliability of Erasmus's edited works, which serve as convenient resources for the HBBW editors. Similarly, the collected works of Zwingli (Z), Martin Luther (WA), Martin Bucer (Bucer DS), and the Blarer correspondence (Blarer BW) are highly cited, demonstrating the edition's reliance on previously edited primary sources.

Following Erasmus, the next most cited source is the *Eidgenössische Abschiede* (EA), a collection of minutes from the Old Swiss Confederacy's federal assembly. This source provides valuable historical insights into political developments, which is particularly relevant given Bullinger's active involvement in contemporary politics. Two other key sources offering political context are the political correspondence of Strassburg (PC) and the Zurich Reformation files (AZürcherRef).

The prominence of these sources reflects the edition's broader goal: to provide historical context alongside its focus on literary documents. This aim is further emphasized by the inclusion of bibliographical lexica (HBLs and NDB), underscoring the editors' effort to situate the letters within their historical and intellectual milieu.

Two sources in Figure 6 not yet mentioned are Bullinger's Bibliography (HBBibl) and the Zwingliana (Zwa), a scholarly publication dedicated to the history of Protestantism in Switzerland and its wider impact. The inclusion of the former is unsurprising in an edition of Bullinger's correspondence, while the latter demonstrates the editors' commitment to situating the text not only within its historical context but also within the framework of current research and scholarship on the subject.



Most cited literature that is responsible for 50% of all the citations in the footnotes labelled "misc" and "short". Explanation of the abbreviations see Figure 6.

Abbreviation	Full Title	Occurrences
EA	Amtliche Sammlung der ältern Eidgenössischen Abschiede	875
HBBibl	Heinrich Bullinger, Bibliographie	536
Adagia	ASD II/1-9	493
LB	Desiderii Erasmi Roterodami opera omnia	478
Z	Huldreich Zwinglis sämtliche Werke	439
PC	Politische Correspondenz der Stadt Strassburg im Zeitalter der Reformation	428
HBLs	Historisch-biographisches Lexikon der Schweiz	349
WA	D. Martin Luthers Werke. Kritische Gesamtausgabe (Weimarer Ausgabe)	325
ASD	Opera omnia Desiderii Erasmi Roterodami	205
BucerDS	Martin Bucers Deutsche Schriften, im Auftrag der Heidelberger Akademie der Wissenschaften	193
HBD	Heinrich Bullingers Diarium (Annales vitae) der Jahre 1504-1574	191
Blarer BW	Briefwechsel der Brüder Ambrosius und Thomas Blaurer	161
Zwa	Zwingliana	155
AZürcherRef	Actensammlung zur Geschichte der Zürcher Reformation in den Jahren 1519-1533	139
CSEL	Corpus Scriptorum Ecclesiasticorum Latinorum	137
HBRG	Heinrich Bullingers Reformationsgeschichte	135
NDB	Neue Deutsche Biographie	124

Glossary table of abbreviations used in Figure 5 with absolute occurrences.

## Conclusion

Our initial analysis of the HBBW footnotes over 50 years reveals clear changes in editorial practices. These changes do not correlate with changes in personnel of the editorial team and exact causes remain uncertain. The prominent use of primary sources suggests a strong emphasis on historical contextualization, aligning with Grafton's (1999) assertion that such sourcing serves as a key indicator of scholarly professionalism. These primary sources are predominantly presented through editions of original texts, indicating a broader network of interconnected editions and potentially contributing to the establishment of a canon, as noted by Stevens and Williams (2006).

The identification of consistent patterns, such as the formatting of lexical references, across a 50-year project suggests a degree of standardization and thus, this typology might be applicable to other editions. Additionally, integra-

ting literature analysis could further reveal interconnections between editions.

Furthermore, our study lays groundwork for potential automation in the editorial process. With the advent of large language models, we envision supporting editors by:

- Suggesting appropriate locations for footnotes within the text.
- Generating footnote content based on the letter's context and the broader correspondence.

This categorisation and distribution analysis provides valuable direction for prioritising footnote types in such automated processes. Moreover, the analysis of the most used references gave a good indicator of what material to feed the large language models with to generate historically accurate content. Lastly, the high percentage of miscellaneous footnotes hints at the fact that these might be the type of footnotes where additional AI support could speed up the editing process.

In conclusion, this study not only illuminates the evolution of editorial practices in the HBBW but also points toward future innovations in digital humanities and editorial methodologies.

## Fußnoten

1. Nikolaj Bauer (Formal Analysis), Phillip B. Ströbel (Writing – original draft)
2. See <https://bullinger-stiftung.ch>, which is also responsible for its funding.
3. See <https://www.bullinger-digital.ch>
4. See <https://www.arpa.ch>.
5. Since our XML from GitHub fed the frontend interface and since all project members could edit the XML files in the GitHub repository, manual correction of wrongly recognised footnotes was simple.
6. See <https://www.bullinger-digital.ch>. For further information about the different processing steps, see Ströbel et al. (2024).
7. See .

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