

Methodological Issues in Biblindex, An Online Index of Biblical Quotations in Early Christian Literature

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Edited by LAURENCE MELLERIN and HUGH A.G. HOUGHTON



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Methodological Issues in Biblindex, An Online Index of Biblical Quotations in Early Christian Literature¹

Laurence MELLERIN, Lyon, France

Abstract

Biblindex, http://www.biblindex.org, is a new online tool for patristic studies developed mainly by Sources Chrétiennes in Lyon (France): it is an index of biblical references found in Christian literature, both Western and Eastern texts, at present covering the three first centuries, along with part of the fourth. The eventual goal is to cover the whole Late Antiquity and the early Middle Ages, in order to renew the study of the interpretation and history of biblical texts.

Biblindex seeks to link: a corpus of Bibles, collections of scriptural books which were originally written in the various languages of the Ancient East and translated early in their history – quotations in ancient authors show these texts in the process of development; a corpus of ancient and medieval authors, who refer to the Bible as a fixed entity, yet at the same time contribute through their quotations to the form and concept of 'the text'.

Following a presentation of the first stages of this project, started in the sixties, and a presentation of the data available, this paper discusses methodological issues regarding the analysis of new works from scratch, considering first the nature of a Father's Bible and then describing the way of selecting and characterising a reference to this Bible in a patristic text. These include how to define the difference between allusion and quotation, how to distinguish and typify the Church Fathers' ways of introducing and changing the biblical texts or how to decide where a quotation begins and where it ends. Through a few case studies, the solutions offered by Biblindex are presented and submitted for discussion.

Introduction: The first stages of the project

Biblindex² is a project led by the French Institut des Sources Chrétiennes with the support of two computer-science labs in Rhône-Alpes (France), LIRIS and LIG,³ and two biblical institutes, the Peshitta Institute of Leiden University

¹ I'm most grateful to Hugh Houghton, who has significantly improved the English of this paper. All remaining shortcomings are, as usual, with the author.

² http://www.biblindex.org.

³ LIRIS (Laboratoire d'InfoRmatique en Image et Systèmes d'information); LIG (Laboratoire d'Informatique de Grenoble).

and the Institut für neutestamentliche Textforschung in Münster. It is funded by the French ANR (National Research Agency) from 2011 to 2014. It aims at the constitution of an online index of biblical references which are found in Christian and Jewish literature, drawing on both Western and Eastern sources from Late Antiquity and the early Middle Ages, in order to renew the study of the interpretation and history of biblical texts. Access to the data is completely free.

1. Nothing but references

At present, Biblindex consists only of a comprehensive inventory of biblical quotations and allusions in early Greek and Latin Christian literature, providing bibliographical information about the edition used for each patristic work; it gives no access to the texts themselves. Each entry on the website offers a series of numbers indicating the chapter and verse of the biblical text, its location in the patristic writing and the corresponding page and line numbers in the reference edition. For example, *Genesis* 1:27 is quoted in Basilius, *Asceticon parvum* 2, 44, on page 15, line 10 of *CSEL* 86 (1986).

This data is merely the first step of Biblindex. It derives from the *Biblia Patristica* index of biblical quotations in the early Christian Fathers, a project begun in Strasbourg in 1965 by a CNRS team, the Centre for Patristics Analysis and Documentation (CADP). Unfortunately the activity of *Biblia Patristica* ceased in 2000, due to lack of a sufficient team, and the CADP entrusted Sources Chrétiennes with its database and further unpublished data.

2. The corpus available

The seven published volumes of *Biblia Patristica*, along with a supplementary volume for biblical references in Philo of Alexandria, cover the first three centuries, along with part of the fourth. They form an inventory of 270,000 entries, which have all been scientifically verified. Volume 1, which appeared in 1975, covers the beginnings of extracanonical Christian literature up to Clement of Alexandria and Tertullian. Volume 2 indexes the literature of the third century, apart from Origen, to whom volume 3 is devoted exclusively. Coverage of the fourth century begins with volume 4, which includes the writings of Eusebius of Caesarea, Cyril of Jerusalem, and Epiphanius of Salamis. Volume 5 covers Basil of Caesarea, Gregory of Nazianzus, Gregory of Nyssa, and Amphilochius of Iconium, and volume 6 turns to the Latin writers Hilary of Poitiers, Ambrose of Milan, and the Ambrosiaster. Volume 7 on Didymus the Blind appeared in 2000.

In the database inherited by Sources Chrétiennes were around 100,000 more references, prepared for the planned 8th volume, unchecked but in electronic form: these are already online. Works of the following authors had been entered: Athanasius, John Chrysostom, Theodoret of Cyr, Procopius of Gaza, Jerome, *Spuria* and *Dubia* relating to the authors of the other published volumes.

In addition to this material, there are about 400,000 unverified hard-copy references in boxes waiting to be scanned. These pale listings, handwritten notebooks or sheets, are difficult to decipher and to handle. Over the course of 2011, the Biblindex team prepared the bibliographical references for the 3,000 works represented in these files and began to type up their biblical occurrences: around 18,000 are now ready to be entered in the database.

This brief account of the origin of the project is necessarily limited in scope: more information on the whole story can be found on our online research note-book, http://www.biblindex.hypotheses.org.⁴

3. Goals from now on

From now on, Biblindex has three main goals: a massive enlargement of the corpus; the development of innovative interfaces; the constitution of a global network of collaborators.

3.1. A massive enlargement of the corpus

There is no need to repeat here what Steven Harmon has already written about the chronological and geographical incompleteness of *Biblia Patristica*.⁵ The more the number of quotations increases, the more the index will become useful for researchers. This is why Biblindex intends to put online the whole content of the CADP archives, even without checking each entry (they appear online as 'unverified'). We have to assume that the collaborators of *Biblia Patristica* worked well. To take just one example, there are 43,701 references to John Chrysostom in Biblindex: these data were recorded mainly from the text of Migne's Patrologia, yet we must hope that results based on more modern editions would not be fundamentally different, because undertaking a new comprehensive check in this case would take nearly 30,000 hours. We also want gradually to add the biblical apparatus of all the volumes published in *Sources Chrétiennes*, although the oldest ones need to be checked and completed. The first aspect of Biblindex is therefore to continue to increase the

⁵ Steven R. Harmon, 'A Note on the Critical Use of Instrumenta for the Retrieval of Patristic Biblical Exegesis', *Journal of Early Christian Studies* 11 (2003), 95-107, sp. 100 and 106.

⁴ http://biblindex-en.hypotheses.org/22: Background: from Biblia Patristica to Biblindex.

database with data from biblical indexes on the largest possible scale. All new work based on quotations from the texts themselves will have to be consistent with these numbered references.

3.2. The development of innovative interfaces

Since December 2008, a search interface has been available online in beta version for testing. Thanks to feedback from users, a more user-friendly interface will be implemented in 2013. We would like to harness the benefits of the Internet beyond its material superiority over paper format, such as the greater ability to structure the data and visualise results. Currently interfaces for entry and analysis have been implemented so that typists and analysts working directly on the patristic texts can enter data exclusively through a site using e-working software: preliminary studies may be done at the analyst's convenience, but the final version must be recorded through the web interface.

3.3. The constitution of a global network of collaborators

To make the system run, many contributors are needed. About ten researchers are already entrusted with the project at Sources Chrétiennes, and around fifty more French researchers from other labs deal with specific texts. Each researcher working on an edition of a patristic text could take part in the improvement of Biblindex, as an analyst, checker or annotator, once the collaborative interfaces have been implemented. The core team oversees and coordinates the project, but the goal of completeness can only be reached with a numerous team, given that the analysis must be done in a more accurate and more complete way than is generally the case in the apparatus and indexes of biblical and patristic editions. For each work, the various sources available must be reviewed *and* a new analysis of the original text in its best edition must be carried out: allusions that the editor has overlooked must be noticed, unnecessary references eliminated. Editing and translating a text provides a great opportunity to perform such work, which will be recognized as an individual scientific production.

Throughout the life of the data, users can suggest improvements through the site; as far as possible, except in case of obvious mistakes, the analyst of the work involved will be informed and will validate changes. The system will record all changes. A complex validation system is currently in preparation, so that each new analysis can be checked twice.

For the rest of this paper, the focus will not be on the integration of the data available in different forms or the implementation of the workflows, but on the methodological issues regarding the analysis of new works from scratch, considering first the nature of a Father's Bible and then describing the way of selecting and characterising a reference to this Bible in a patristic text.

4. The definition of biblical referentials

In order to enlarge its corpus as quickly as possible, *Biblia Patristica* used a single biblical referential, a composite Bible made up of:

- the books of the Hebraic Bible as given in modern editions of the Hebrew Old Testament, and the Greek New Testament;
- the books of the Septuagint in Rahlfs' edition for seven other texts which do not belong to the Hebraic corpus: 1 and 2 Maccabees, Wisdom of Solomon, Ecclesiasticus, Tobit, Judith, Baruch (1-6),⁶ Greek additions to Esther and Daniel.

The Vulgate and the *Vetus Latina* were not specifically taken into account. The verse numbering of the *Jerusalem Bible* was always used.

4.1. Multilingualism

The terms of reference were thus defined not from the objects to be dealt with, but from the user's constraints: while the canon accepted by the Fathers was varied and fluid, the division of the Hebrew Bible results from a consensus of modern scholars. It was more practical to use a single, albeit inadequate, scheme. Nonetheless, quotations in different languages have to be referred to different 'Bibles'. Even in the same author's work, references to multiple sources may be found, as in the case of Jerome with his use of Hebrew, Greek and various Latin texts.

Biblindex, like *Biblia Patristica*, requires biblical systems of reference so that analysts can give chapter and verse numbers easily identifiable to modern readers of the Bible. However, this practice raises the same problems faced by the *Thesaurus Linguae Latinae* when using reconstituted texts found in the *Vetus Latina* edition. A reference edition is normally a form of text unknown to Fathers who quoted the Bible. These referentials are in no way prescriptive and have no more real existence for the Fathers than the *Jerusalem Bible*, even if they are a better approximation. There is of course no question of our 'referring' Cyprian's text to the Vulgate: rather, when reading the biblical text of Cyprian, we may note what sets it apart from the Vulgate. *The only function of the biblical referentials is provisionally to relate any patristic text to a shared point of comparison*.

Insofar as the text of the patristic quotations will be gradually integrated into the database, we can eventually reconstruct the Bible of a particular author and if necessary set new referentials, depending on the interest of research. One

⁶ There are only 6 quotations of *Baruch* 6 in the whole database, so it is unclear whether all analysts took this *Letter of Jeremiah* into account.

could for example compare the Bible of two authors, or one author's Bible at different periods of his life, or several authors' Bibles in a specific geographic area over a given period, and so on. But this ideal phase will only be completed when a very consistent number of texts have been analysed and integrated into the corpus of Biblindex. It must be added that the use of biblical referentials allows, in this first phase of the project, the integration both of texts analysed anew and reference lists reconstructed from biblical apparatus or the available archives: this is a *sine qua non* for a significant increase of the corpus over the next four years, during which the funding of the project is assured.

Initially in Biblindex, in addition to translations into modern languages – the new *TOB*⁷ in French, the *New Revised Standard Version* (NRSV) with the so-called deuterocanonical books / Apocrypha⁸ in English – which will be seen only in the user interface, five biblical referentials will be proposed:

- the *Biblia Hebraica Stuttgartiensia*⁹ for the Hebrew texts;
- Rahlfs' Septuagint¹⁰ and the fourth edition of the United Bible Societies' Greek New Testament¹¹ for the Greek texts;
- the Weber-Gryson Vulgate¹² for the Latin texts, and in addition 3-4 Maccabees in the edition of the Septuagint;
- the *Peshitta* for the Syriac texts. Reference will be made to the Peshitta edition prepared in Leiden for the volumes already published.¹³ For the other books, one may refer either to uncorrected electronic texts, when available, or to the facsimile of Milan Ms 7a1.

⁷ Traduction Œcuménique de la Bible (TOB), new revised edition (Paris, 2010), including 3-4 Ezra, 3-4 Maccabees, Prayer of Manasses and Psalm 151.

⁸ New Revised Standard Version With the Apocryphal/Deuterocanonical Books, Division of Christian Education of the National Council of the Churches of Christ in the United States of America (1989), including Tobit, Judith, Additions to Esther, Wisdom, Ben Sira, Baruch, Letter of Jeremiah, Prayer of Azariah, Susanna, Bel, 1-4 Maccabees, 2 Maccabees, 1-2 Ezra, Prayer of Manasses, Additions to Psalms.

⁹ Rudolf Kittel, Karl Elliger, Wilhelm Rudolph, Adrian Schenker, *Biblia Hebraica Stuttgartensia*, Deutsche Bibelgesellschaft (Stuttgart, 1997).

¹⁰ Alfred Rahlfs, *Septuaginta, id est Vetus Testamentum Graece juxta LXX interpretes,* 2 vol. (Stuttgart, 1935, 1950⁴) is by far the most distributed version. In R. Hanhart's revised edition (2006) are only two textual modifications to be found: *Isa.* 5:17 ἀπειλημμένων becomes ἀπηλειμμένων and *Isa.* 53:2 ἀνηγγείλαμεν conjecturally ἀνέτειλε μέν. See Guillaume Bady, 'Quelle était la Bible des Pères, ou quel texte de la Septante choisir pour Biblindex?', this volume, 33-7.

¹¹ Kurt and Barbara Aland *et al.* (eds), *The Greek New Testament*, Deutsche Bibelgesellschaft-United Bible Societies (Stuttgart, 1966, 1993⁴).

¹² Robert Weber, Bonifatius Fischer, Jean Gribomont *et al.*, *Biblia sacra juxta vulgatam versionem*, Deutsche Bibelgesellschaft (Stuttgart, 1969, 1994⁴, 2007⁵).

¹³ The Old Testament in Syriac according to the Peshitta version, ed. on behalf of the International Organization for the Study of the Old Testament by The Peshitta Institute Leiden (Leiden, 1972-). Computerized files of these texts are currently being prepared by Wido T. van Peursen for Biblindex. Volumes still to be published are: *Ezra*, *Neh*, *1-2 Macc* (2012), *Jr*, *Lm*, *Ep Jr*, *Ep Ba*, *Ba*; *Si*, *Ru*, *Sus*, *Jdt*; *Esther*; *3-4 Mac*. - the Zohrab Bible (Venice, 1805, recently reprinted) for texts written directly in Armenian. For Armenian versions of Greek and Syriac texts, the Bible of the original source (*i.e.* Septuagint or Peshitta) is taken as the reference, with the note that it is a translation.

4.2. Verse numbering

There are various reasons why, in addition, no one Bible can be used as a single reference:

- Some books, whether canonical or not, are not included in some versions: *Jdt*, *Tob.*, 1-4*Macc.*, 1 or 4 *Ezra*, *Bar.*, 1 *Enoch*, *Jubilees*, *Odes*, *Ps.* 151-153, 3*Cor.*, *etc.*
- Some books and chapters are only included in some versions.
- Several verses are only included in some versions: *e.g.*, several verses of the Massoretic Text are not in the LXX text, such as 1*Kings* 6:11-3; conversely *Dan.* 3:24-90 (LXX) is not in the MT *etc.*
- The order, names and numbers may differ for books, chapters and even verses. Specifically, a verse in one version may relate to 2 or 3 verses in another: *e.g. Ex.* 39:41-3 (MT) = *Ex.* 39:18.22.23 (LXX); *Num.* 26:15-47 (MT) = *Num.* 26:24-27.15-23.32-47.28-31 (LXX), *etc.*

We aim to provide a data model allowing automatical switching between verse numbering in the different Bibles. A full correspondence table, verse by verse, when necessary part-verse by part-verse, will be included in the database. Each analyst and each user can thus choose a biblical referential without needing to indicate the various relationships between different versions.

For reasons of convenience, the verse is kept as the basic unit: one will always be able to search by verse number in Biblindex. Later on, once the full texts of biblical references have been added to the database, the corpus will be keyword searchable. A keyword search will be possible in the texts of the reference Bibles, but this is of course no guarantee as to the form of text quoted in the patristic text.

4.3. Deuterocanonical and Apocryphal Books

According to the guidelines, quotations of the most frequently used Apocrypha (*Psalm* 151; *Prayer of Manasseh*; 3 and 4 *Ezra*)¹⁴ should have been listed in *Biblia Patristica*. In practice, only the six Deuterocanonical books accepted by

¹⁴ *3 Ezra, i.e. 1 Ezra* of the *Septuagint*, whereas *2 Ezra* in the Septuagint is *Ezra-Nehemiah* in the Hebrew and Latin canons. See Guillaume Bady, '*3 Esdras* chez les Pères de l'Église: L'ambiguïté des données et les conditions d'intégration d'un "apocryphe" dans Biblindex', this volume, 40-1.

the Latin Catholic Church were taken into account and none of the four just mentioned, nor 3 and 4 Maccabees; the Prologue of Sirach was also omitted. Once again, a modern canonical definition was adopted as the rule for studying ancient texts. Biblindex seeks to avoid this by establishing the following principle: from the moment we know that a text was considered biblical by a Church Father at a given time, the statement of its occurrences is relevant in Biblindex. Our compilation of biblical referentials will therefore include all possible books quoted in a specific language; the lists of books will vary depending on the reference language. Other apocryphal texts, which were seen as part of the Bible in different Christian communities in antiquity, are included:

- the *Psalms of Solomon* (Greek, Syriac)
- the Odes (Greek, Syriac)
- the Letter to the Laodiceans (Latin)
- Psalms 152-155 (Syriac)
- 2 Baruch, the Letter of Baruch and the Revelation of Baruch, the Syriac Revelation of Ezra (Syriac)
- the 3rd Letter to the Corinthians (Armenian)
- the Ethiopian Revelation of Ezra, Jubilees, Enoch (Ethiopian)

Integrating apocryphal texts in Biblindex is a question which must be very carefully considered: where should we stop? At first, the referential will be limited to the list described above, but other apocryphal books might be added if they have been quoted as part of the Scriptures by the Fathers (*e.g.* the *Shepherd* of Hermas). This process will simply refine our understanding of the constitution of the canon of Scripture.

As for explicit quotations that cannot be identified, such as the *agrapha* (words of Jesus which are not preserved in any known biblical book), they will be identified in Biblindex by the acronym UBO (Unidentified Biblical Objects) and set aside for further study.

5. New ways to define a biblical reference

How did the Fathers use the biblical text?

5.1. Textual analysis

As we explored the boxes of *Biblia Patristica*, we became aware that contributors had distinguished between different sorts of references: they had to follow very precise guidelines and to fill in numerous fields in pre-formatted paper forms. They indicated if a quotation was complete, if two or three verses were to be considered together, if the quotation was continuous or discontinuous, if the Father quoted directly from a specific Greek or Latin version, and so on. They could even add comments on their decisions. Yet the main part of this work is no longer visible because, in spite of a few signs giving additional information, only columns of numbers appear in the published volumes.

We initially thought about recording data using spreadsheets and a series of signs, exactly the same way as *Biblia Patristica* but with the help of computers. But as this preliminary work done by the analyst is necessarily done on the text, we decided instead to move from the beginning to 'the textual phase' of Biblindex, with the analysis of the text itself launched through the web interfaces.

During the first stages this method will only apply to very few texts: this part of the project is experimental because considering entire works in this way is a very time-consuming process. Users would, of course, benefit from having the quoted text appearing in the results form: they would also be given the opportunity to search the corpus by keyword, to access the immediate context of the biblical reference and to visualise the exact way the author quoted. But for the time being full texts will only be used in the private input interfaces, because legal matters are still to be resolved: at present, we have no permission even to put Sources Chrétiennes' own critical texts online.

5.2. Definition of 'text units'

In the input interfaces, the critical text of the work to be analysed will be available in a text editor. On the left, page and line numbers from the reference edition will appear, with the text itself in the middle. The analyst will select parts of this text, which will then be highlighted. Then he or she will validate and define the type of the selected biblical reference (see the screenshots below).

The typology of references is of great significance: search criteria are determined by the distinctions made during the analysis. So we have to think ahead about every conceivable way to sort references, depending on the object of a user's search. The most common usage is to distinguish between quotation and allusion. *Biblia Patristica* had defined both of them as follows:

Quotation: 'Nous reconnaissons une citation chaque fois que l'auteur renvoie expressément le lecteur à un texte qui est (ou qu'il prétend être) biblique. Peu importent alors les erreurs de référence et les variantes de transcription; il suffit qu'il ait eu l'intention de citer l'Écriture.'

Allusion: the criterion is 'le renvoi conscient ou inconscient par l'auteur à un texte biblique particulier venant étayer sa réflexion (...): évocation d'un personnage, transcription d'un dialogue au style indirect, reprise en leitmotiv du contenu d'un verset biblique, etc.'¹⁵

¹⁵ Jean Allenbach, *Étapes, moyens et méthode d'analyse pour la constitution du Fichier microphotographique des citations de l'Écriture chez les Pères*, Faculté de Théologie Protestante, Université de Strasbourg (1967), 51.

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Yes it is not easy to distinguish between "the author intended to quote" and "a conscious reference to a particular text". In practice, using the volumes of *Biblia Patristica* to track down a reference, reveal that this distinction between quotations and allusions has not always been maintained. As Steven Harmon wrote, 'criteria for allusions are rather loose: each time an analyst has thought a place might conceivably be interpreted as an allusion, he had not ruled out this text.'¹⁶ Each researcher has their own definition of an allusion; we therefore decided *not to keep any distinction between quotation and allusion in Biblindex* and to search for more objective criteria.

The 'object' considered in Biblindex is an intersection of variable range between the biblical corpus on one side and the patristic corpus on the other, called a 'text unit'. A text unit is a part of a patristic text in which an author refers, explicitly or implicitly, through quotation, mention or reminiscence, to one or more parts of the biblical text. Multiple 'biblical references' may be found in a single unit. In each text unit, the author's thought and the biblical contents are nested together in such a way that they are often impossible to separate. This is why a unit is not constituted by the exact words of the Bible which also appear in the Fathers' text, but is defined as the coincidence between a patristic sense unit and a biblical one. The unit will be enclosed in braces, and inside it, the analyst will italicize the words shared by the patristic text and the biblical referential and put parentheses around any intervening authorial comments. Substituted words which replace part of the biblical reference, will stay in roman type.

E.g.: BERNARD OF CLAIRVAUX, *Parable* 1, §4¹⁷

Haec dicens, frenum discretionis imposuit fervido illi equo desiderii, eiusque habenas Temperantiae regendas commisit. Cumque Timor retro de vicinia et virtute inimicorum et tarditate fugae causaretur: « [*Vade*, (inquit Prudentia),

'We recognise a quotation whenever the author specifically refers the reader to a text that is (or that the author claims to be) biblical. Errors of reference and variations of transcription do not matter; the point is that the author intended to quote the Scriptures.'

'The conscious or subconscious reference by the author to a particular biblical text to support his thinking (...): the evocation of a character, the transcription of a dialogue in indirect style, the recovery in leitmotiv of the contents of a biblical verse, and so on.'

¹⁶ St. Harmon, 'A Note' (2003), 100.

¹⁷ Examples in this paper often come from Bernard of Clairvaux' works because this author, as the 'last Church Father', will be a test case during the first stage of Biblindex. A great work has already been done in Sources Chrétiennes since 1990 to improve the scriptural apparatus of his works: specific distinctions have been made between exact quotations, modified quotations, allusions; the sources of his variants have also been studied. See L. Mellerin, 'Intégration des références de Bernard de Clairvaux dans Biblindex', http://biblindex.hypotheses.org/methodolo-gie/accueil/bernardclairvaux.

retro Satana, scandalum es nobis]. [Fortitudo nostra et laus nostra dominus et factus est nobis in salutem.] $>^{18}$

There may be no words in italics, in the case of a complete paraphrase of the biblical text, or if, for instance, a *Vetus Latina* quotation has no textual intersection with the Vulgate: *e.g.* [Peccasti, quiesce] as a quotation of *Gen.* 4:7 (VL), as often found in Jerome, Gregory the Great and especially Ambrose.¹⁹

A single word, if relevant, can be a biblical reference and a unit: *e.g.* Ambrosius, *De Iacob* 1, 5, 19 refers to *Col.* 2:14 when he writes *chirographum*.

5.3. Typology of biblical references

Two types of biblical references have been established, depending on whether or not they are to be linked to precise verses. Each of these types falls into two cases.

5.3.1. Biblical references which do not refer to verses

The two first cases do not refer to verses.

5.3.1.1. CASE A: allusive reference to a biblical stretch of variable range

This case can be illustrated with the first reference in the first volume of *Biblia Patristica*, an allusion to the Pentateuch made by Irenaeus in *Adversus Haer*eses II, 24, 4:²⁰ In quinque libris legem populo Moyses tradidit. It would be pure nonsense to link this sentence to each verse of the five first books of the Bible; Irenaeus here does not quote the whole Pentateuch, but he refers to this part of the Bible as a textual entity. A user searching for *Gen.* 21:3 in Biblindex would not want to be presented with this result, but it is appropriate for it to be returned in a keyword search for 'Pentateuch' or 'Moses'.

Biblical stretches may be either continuous or discontinuous: Pentateuch is a continuous one, Johannine writings (*John*, 1-2-3*John*, *Rev.*) a discontinuous one. They may be a large part of the Bible, such as a series of books, a complete book, a series of chapters (*e.g. Psalms* 3 and 5), or a smaller one, like a parable, a pericope, or a stretch of verses inside a biblical book. If a Church Father writes: 'when Jesus healed the blind man', this may straightforwardly be linked to pericopes about the restoration of sight without implying that the Father actually quotes any verse from the gospels.

 ¹⁸ Vg: Vade retro me Satana (Mark 8:33 ≠); Vade post me Satana scandalum est mihi
(Matth. 16:23 ≠); fortitudo mea et laus mea Dominus et factus est mihi in salutem (Ex. 15:2 ≠).
¹⁹ See Vetus Latina, t. 2 (Beuron, 1951-1954), 82-3.

²⁰ Incinia da Lucas Contro las Hénérica ed Adelia Devecesos Le

²⁰ Irénée de Lyon, Contre les Hérésies, ed. Adelin Rousseau, Louis Doutreleau, Sources Chrétiennes 294 (Paris, 1982), 244, l. 145.

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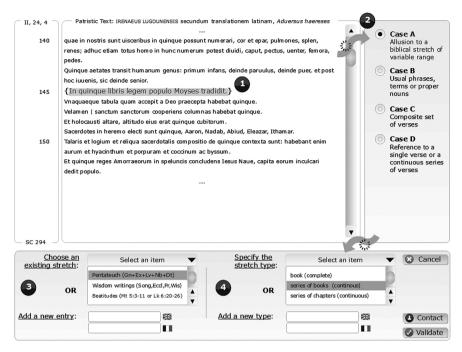


Illustration 1: Interface for analysts to define a biblical stretch of variable range

These stretches will be defined by analysts according to their needs, following the order of the biblical books of their referential. A user will be able to choose whether to see this type of reference or not as part of the search interface.

5.3.1.2. CASE B: use of customary biblical vocabulary or of a biblical proper noun.

5.3.1.2.1 CASE B1

Customary biblical vocabulary refers to recurrent words or phrases which come from the Bible, but cannot be related to any specific text: for example, 'the Tabernacle', or overall designation of events during Christ's life, or phrases such as 'the Twelve', 'disciples of the Lord', 'a heart of stone', 'servant of God', 'he ascended to heaven' and so forth. In order not to increase artificially the number of references, such commonly used words will not be recorded, although a list of them will be gradually established so that a common rule can be defined.

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Similarly, as the goal is not to define the biblical vocabulary used in the patristic texts, words whose relation to biblical text(s) is only contingent or lexical (*i.e.* unusual forms or *hapax legomena* in too different a context) will be excluded, as well as biblical-sounding phrases which are used too frequently to be referred to a specific text. The definition of this particular case is simply in order to create a list of such common words or phrases, not to return these references in the result form.

5.3.1.2.2. CASE B2

Case B2 is very close to Case B1: proper nouns used without a precise biblical context could be listed among the terms mentioned above. Nevertheless, as researchers may be interested in a search by proper nouns, a different list will be prepared. For instance, it can be useful to know when Babylon and Jerusa-lem are mentioned together as in the excerpt from Bernard's *Parables* given as Illustration 2. Another example: if the name of David occurs in a reference to a specific text of 1-2*Samuel*, the verse reference will be marked in a conventional manner. If, however, mention is made of David without further precision,

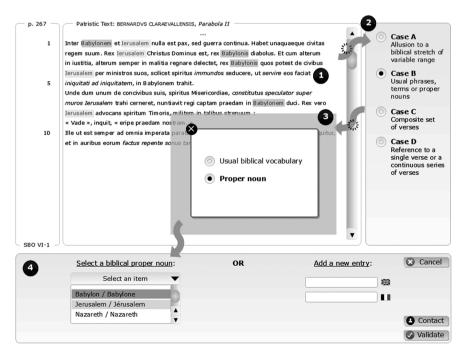


Illustration 2: Interface for analysts to record customary phrases or proper nouns

David's name can be put in braces and linked to the list of names, with a further information about the way he is mentioned. Finally, if 'David' means the Psalmist, we will not only link the name of David to the list of names, but also to the stretch 'Psalms' in the list of large references in Case A. It will be possible to find all occurrences of 'David'; to see when the Fathers wrote 'David' meaning 'Book of Psalms'; and, in the case of a verse search, not to clutter the list of references to events in David's life with irrelevant material.

5.3.2. Biblical references related to verses

The final two cases focus on the most important and interesting quotations, biblical references related to verses.

5.3.2.1. CASE C: reference to a single verse

When a precise reference to a single verse or a continuous series of verses has been found, the analyst selects a unit, in this specific case equivalent to the biblical reference, *Gen.* 1:1. He validates his selection, and a new 'combo box' opens with dropdown lists, as shown in Illustration 3. The biblical

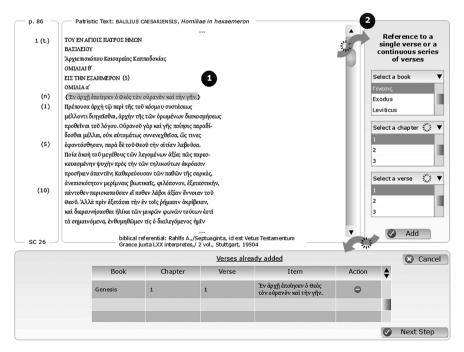


Illustration 3: Interface used by analysts for a reference to a single biblical verse.

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reference can be related either to a single verse or to a continuous stretch of verses.²¹

5.3.2.2. CASE D: several biblical references in a single unit

Case D is a more complicated variant of case C, involving units which quote several non-parallel verses. The analyst is faced with a composite set of verses, possibly nested within each other. The context of the unit is the same for all biblical references included in this set: in the analyst's interface, the unit selection will be made once; in the user's interface, the whole unit will be displayed. However, because each biblical reference is related to specific verses these have to be reviewed independently and successively, even if these various texts belong to what seems to be a long continuous quotation.

Two examples may be considered:

1) Jerome, *Prologue to Samuel-Kings*. See Illustration 4. The introductory phrase, *In Tabernaculum Dei [offert] unusquisque quod potest*, is common

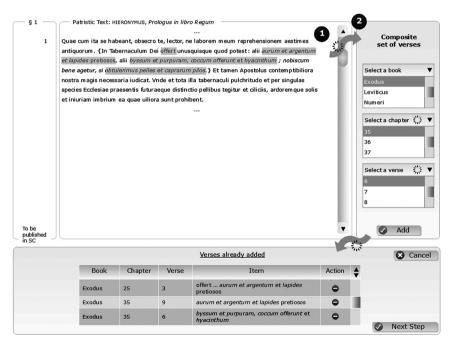


Illustration 4: Interface used by analysts for a composite set of verses (Jerome).

 21 A dropdown list of single verses will be seen by default, but a button 'series of verses' will enable another list to be opened, in which selections such as *Ex.* 15:15-6 or 1*Sam.* 3:21 to 4:1 can be made.

to all texts: the terms are interrelated and each is present in several verses; in contrast, *aurum et argentum et lapides* belongs to *Exodus* 25:3 and 35:9.

2) Gregory of Nazianzus, *Theological oration* 29, 18.²² See Illustration 5. Gregory develops a theological controversy against Arius. He makes a list of what he calls 'the words so dear to (his) ingratitude' about the Christ, as (...) 'he learned', 'he received orders', 'he was sent', and our sentence: 'he can do nothing of himself, neither speak nor judge, neither give nor want'. The phrase μὴ δύνασθαι controls all infinitives following, which each alludes to precise verses of the New Testament: μὴ δύνασθαι ἀφ' ἑαυτοῦ τι ποιεῖν, ἢ λέγειν, ἢ κρίνειν, ἢ δωρεῖσθαι, ἢ βούλεσθαι. The textual unit is this sentence as a whole, but each verb has to be referred to a different verse.

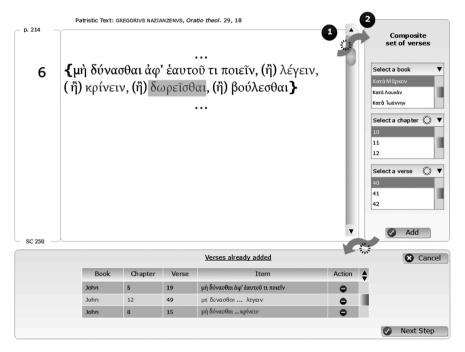


Illustration 5: Interface used by analysts for a composite set of verses (Gregory).

²² Grégoire de Nazianze, Discours Théologiques, Paul Gallay (ed.), Sources Chrétiennes 250, (Paris, 1978), 214-5, 1. 6-7.

6. Specifications of biblical references

Once the first step has been completed and a biblical reference has been allocated to a precise verse, features of the quotation may then be specified.²³ If it is an exact quote of a complete verse which appears only once, without any introductory phrase, a box 'nothing to report' will be checked: this will be sufficient to validate the entry and move to the next reference. But the situation is rarely so simple. For more complex cases, a chain of dialogue boxes can be deployed, always based on the principle that if the box at the highest level is not checked, more detailed choices will not be offered.

In the first box, the following selections are suggested (although distinct, they are not mutually exclusive):

- Differences from the biblical reference text
- Parallel(s)
- Explicit quotation
- Quotation used several times
- Quoted author quoting

6.1. Differences from the text of the biblical referential

A quotation may correspond exactly to the form of text in the biblical referential or be slightly different: tenses, grammatical persons, or word order may have been changed and certain terms may be substituted by synonyms. When a quotation does not exactly match the biblical referential, the box 'differences' must be checked. Once again, this is only a conventional means of classifying quotations, given that the biblical referentials may not correspond to the sources used by the Church Fathers. Five kinds of differences are listed:

- Omission, when a verse is not quoted in its entirety. *E.g.* Bernard of Clairvaux, *In Canticum Canticorum* 17, 6 quotes partially *Song* 1:2²⁴: Dicit Ecclesia redemptorum: [*Oleum effusum nomen tuum*].
- Translation. E.g. Jerome, Ep. 36 ad Damasum 12²⁵, quotes the Septuagint: ubi Septuaginta posuerunt: 'quinta autem generatione ascenderunt filii Israhel de terra Aegypti'. This quotation will be related to the Septuagint, as a translation.
- Transliteration. E.g. Jerome, Ep. 34 ad Marcellam 2²⁶: Vnde ad Hebraeum recurrens inueni pro 'pane doloris' scriptum esse 'leem aasabim', quod

²³ Searches may be made for quotations only referring to the Septuagint; or for exact quotations only, or for those involving a change in word order, and so on.

²⁴ Bernard de Clairvaux, Sermons sur le Cantique 16-32, Rafaelle Fassetta, Paul Verdeyen (ed.), Sources Chrétiennes 431 (Paris, 1998), 80.

²⁵ Jérôme, Lettres, J. Labourt (ed.) (Paris, 1951), 59, 1. 17.

²⁶ Jérôme, Lettres, J. Labourt (ed.) (Paris, 1951), 45, 1. 3.

Aquila interpretatus est ἄρτον τῶν διαπονημάτων, *id est 'panem elaborationum'*. *Leem assabim* will be connected to the Masoretic text, as a transliteration. As an example, the distinction translated/transliterated will allow systematic search to evaluate Jerome's skills in Hebrew.

- Lexical change (use of synonyms)
- Morphosyntactic change (usually due to the introduction of the biblical reference in the thread of the discourse), with subdistinctions: word order, recasting in direct or indirect form, addition of particles or conjunctions (δέ, καί, γάρ, οὖν, -que, et, enim, etc.), changes in tense, mood or person etc.

6.1.1. Reference to another source

If a quote differs from the biblical reference text, a source for these differences may be specified. Depending on the language, different options will be put forward.

For instance, if we return to Jerome's *Letter to Marcella, pane doloris* will be related to the Vulgate (*Psalms* translated from the Septuagint); $\ddot{\alpha}\rho\tau\sigma\nu\tau\tilde{\omega}\nu$ $\delta\iota\alpha\pi\sigma\nu\eta\mu\dot{\alpha}\tau\omega\nu$ will be referred to the Septuagint, with the indication 'other source/Aquila', *panem elaborationum* too, with the additional indication 'translation'.

6.2. Text with parallels: the issue of intrabiblical relationships

The Old Testament is often quoted in the New Testament, which may lead to difficulties in identifying the intended biblical referent. For example, how can we tell whether Augustine's videbunt in quem confixerunt is a quotation of John 19:37 or Zechariah 12:10?²⁷ Some stories are told twice in the Old Testament, such as 2Kings 24:18f. and Jeremiah 52:1f., and, more generally, in the Books of Samuel and Chronicles. Furthermore, it may be difficult to distinguish quotations from the Synoptic Gospels. A special sign was applied to this type of quotation in Biblia Patristica, but in case of uncertainty Matthew's text was always chosen. Quotations of this Gospel may thus be overestimated. To avoid this problem in Biblindex, fixed relationships between synoptic verses have been set up in the data model. A dropdown list will be proposed to the analyst, corresponding to consistent parallels that have already been identified. All or some of these may be selected, keeping only those relevant to the specific patristic passage. For each reference an indication is given of whether it is on the same plane as the first one or if it is secondary. New parallels can be added, along with an indication of their relationship to the first verse.

²⁷ For a discussion of this particular problematic case, see H.A.G. Houghton, *Augustine's Text of John* (Oxford, 2008), 348.

For example, Bernard of Clairvaux, in a sermon In Psalmum Qui Habitat,²⁸ preaches about the practice of monastic asceticism. Without any contextual information referring to a particular gospel, he quotes a passage from John the Baptist: Genimina viperarum, ait Ioannes, auis demonstravit vos fugere a ventura ira?²⁹ Facite dignos fructus paenitentiae. The use of vos instead of vobis seems to be a specific error of Bernard's text. The overall formulation seems to be that of a *Vetus Latina* text, also found in Gregory the Great, Bede and Heiric of Auxerre³⁰. To which biblical referents should it be attributed? The word *genimina* is mainly in Luke 3:9, but also occurs in some VL witnesses of Matthew 3:7, and is in Matth. 23:33: demonstravit is in the Vulgate of Matthew. but also in VL forms of Luke. Ventura is found in VL manuscripts and Vulgate manuscripts for both verses. This is a typical undecidable case.³¹ However, a single verse must be chosen because Bernard refers to a single phrase of John the Baptist. In this case, my preference is for Luke 3:9 because Bede's text is almost exactly the same in his *Commentary on Luke*, which Bernard may have read. While this is admittedly tenuous, we will therefore select Luke as the main reference and Matthew as the second reference, indicating the difficulty of choosing between sources by adding the label 'on the same plane as the first'.

In case of biblical doublets, we must search for all clues in the text which could indicate the right target to be chosen (introductory phrase, context of the other citations, etc.). In many cases, minor indications may help us decide because the source texts are not identical. For instance, when Augustine writes: *quamdiu, inquit, sum in hoc mundo, lux sum mundi*³², he quotes *John* 9:5; when he writes: *mirantur quod dictum est a Domino Iesu Christo: ego sum lux mundi*³³, he quotes *John* 8:12. Thomas Aquinas, in his *Reportatio super Euangelium Iohannis*, has quoted both *John* 8:12 and *John* 9:5. A few lines after these two clear quotations, he only writes: *Lux sum mundi*³⁴. To which verse are these three words, common to both verses, a reference? The truth is he alludes to both at the same time. Therefore, in this case, we have to put two biblical entries in Biblindex, related to the same text unit.

If certainty of choice is possible, the box 'text with parallels' does not have to be checked and the parallels will accordingly not be displayed. However, if it

²⁸ Bernardus Claraevallensis, In Psalmum Qui Habitat 10, 3, Sancti Bernardi Opera IV, (Rome, 1968), 445, 1. 5-8.

²⁹ Matth. 3:7 and Luke 3:7 (sic): progenies (Luke: genimina) viperarum quis demonstravit (Luke: ostendit) vobis fugere a futura (Luke: ventura) ira. Facite ergo fructum dignum (Luke: fructus dignos) paenitentiae.

³⁰ Gregorius Magnus, *Moralia in Iob* 3, 7; *Homiliae in Euangelia* I, 6, 4; Beda Venerabilis, *In Lucae euangelium expositio* 2, 7.

³¹ The apparatus of Sources Chrétiennes indicates: *Luke* 3:7-8 ≠, cf. *Matth.* 3:7-8.

³² Augustinus, In Iohannis euangelium tractatus 44, 5.

³³ Augustinus, In Iohannis euangelium tractatus 34, 2.

³⁴ Thomas Aquinas, *Reportatio super Euangelium Iohannis* 9, lect. 1, num. 1308.

is questionable whether the author intended to quote one verse or the other, or if we think that the author refers to several verses at a time, the 'Parallel(s)' box may be checked and other references related to the first verse will be indicated in the dialogue box. In addition, a statistical tool will be developed in Biblindex to note each time how far the quotation is from each parallel biblical text.

6.3. Explicit quotation

A reference is said to be explicit when the author indicates in one way or another that his text is taken from Scripture: *e.g.* through a reference to a book or an author – 'Like the Psalmist, ask God to free us from our enemies (*Ps.* 59:1)'; 'The Apostle said in his *Letter to the Romans* that we live and we die with Christ (*Rom.* 6:8)' – or with significant introductory terms: 'according to the Scriptures', *etc.* In modern editions, such a quotation may be marked with quotation marks or italicised. *E.g.* Bernard of Clairvaux, *On the Song of Songs* 17, 3³⁵ makes an explicit quotation of *Job* 19:4: [*Et si* quid *ignoravi, ignorantia mea mecum* est. Sancti Iob sententia est.]³⁶ The optional 'false attribution' box may be checked, and a distinction made between *agrapha* and mistakes.

6.4. Quotation being used several times

In commentaries, homilies or biblical *catenae*, the verses which are discussed are often indicated, usually but not always at the top of a paragraph. These 'lemmas' are not always to be found in the biblical apparatus of published editions, because they are mentioned in the titles or in the running heads. Nevertheless, all occurrences of lemmas, whether literal or not, explicit or not, modified or not, must be systematically recorded in Biblindex. The lack of these would significantly distort the statistical analysis performed on the corpus. At the same time, as they are texts which are subsequently adopted in the commentaries, lemmas should not overwhelm the other data concerning a work, and there is the option to choose whether or not to include them in a search.

In Biblindex, this principle applies not only to the 'lemmas' in the strict sense of introductory text commented in exegetical works, but to each biblical quotation subject to multiple uses in a section of text. Checking the box 'Quotation used several times' will permit the association of the biblical reference

³⁵ Bernard de Clairvaux, Sermons sur le Cantique 16-32, Rafaelle Fassetta, Paul Verdeyen (ed.), Sources Chrétiennes 431 (Paris 1998), 74.

³⁶ The introductory phrases of the explicit references, whether or not they are bonded to the text of the quotation, will not be surveyed. Instead a selection may be made of all the explicit quotations in the work of a given author, in order to compare the ways in which quotations are introduced.

of the repeated quotation to a new occurrence of it in the work, under the category 'reuse of quote', in order to relieve the burden of indexing this part of the work.³⁷

6.5. Quoted author quoting

Finally, a biblical reference in a patristic text may either be re-used within another work quoted by the author, or be attributed by the author to a particular source. For example, the *Letter of the Gallic Martyrs to pope Eleutherios*, quoted in the *Ecclesiastical History* of Eusebius of Caesarea V, 4, 2,³⁸ contains, among others biblical references, an allusion to *Rev.* 1:9 about Irenaeus, called 'our brother and companion ($\tau \delta v \ \delta \epsilon \lambda \phi \delta v \ \eta \mu \omega v \kappa \alpha \iota \kappa \sigma v \omega v \delta v$)'. In this case, the following boxes would be checked: quoted author quoting / quote taken from a work only known through others (as this work is known only in quotations) / Gallic Martyrs, *Letter to Eleutherios.* The goal is on the one hand to rebuild the remains of this work, scattered among different authors, but on the other to keep the full biblical references in the author where the quotation is found, as they are also in a way part of the secondary text, hence the need for a specific box. If this is a quote from a known source, the name can be specified in the comments box; if the work is also known, then the quotation will be connected with its initial occurrence, and a link will be created so that the two can be found together.

6.6. Comments

In all cases, analysts are given the opportunity to add comments in a text editor, where they may express a doubt on the validity of the reference, give further explanation about the differences from the reference text, or justify the changes (additions or deletions) made to the apparatus of the edition used, *etc*.

Conclusion

All this goes to show that, although *Biblia Patristica* made a unique and valuable contribution to scholarship through the scientific quality of its work and the considerable amount of data gathered, today we are both able and expected

³⁷ In case of a lemma expressed in different languages, each version of the lemma is linked to the corresponding reference Bible in its original language. See for instance Jerome, *Commentaire sur Jonas* II, 1b, Yves-Marie Duval (ed.), Sources Chrétiennes 323 (Paris, 1985), 222, 1. 22: Hebrew: *Et erat Ionas in uentre piscis...*; LXX: *Et erat Ionas in uentre ceti...* The first text will be referred to the Masoretic text and labelled as 'differences/translation'; the second one will be referred to the Septuagint and labelled the same.

³⁸ Eusèbe de Césarée, Histoire Ecclésiastique V-VIII, Gustave Bardy (ed.), Sources Chrétiennes 41 (Paris, 1955), 28, l. 5.

to go further. What I have presented here is, of course, a work in progress. We have to refine and adjust the distinctions outlined above by applying them to more and more real cases taken from the patristic works.

The methodological developments of the project may be followed on our research notebook and blog, http://biblindex-en.hypotheses.org/. Biblindex aims to provide researchers and the general public with a tool. The interpretation of results remains the task of scholars; Biblindex simply wants to provide the data in a form which makes this possible. Nonetheless, our methodological choices have far-reaching implications for the ability of users to retrieve all the relevant data from which to verify existing hypotheses or develop new insights. For this reason, we seek to discuss our principles and approach with as many researchers as possible; and we are always very pleased to receive any suggestions or comments by e mail to biblindex.sc@mom.fr.