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"Comprehensive Odyssey", a digital critical repository of the Odyssey and its sources: perspectives and consequences.

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**“COMPREHENSIVE ODYSSEY”, A DIGITAL
CRITICAL REPOSITORY OF THE ODYSSEY AND ITS
SOURCES: PERSPECTIVES AND CONSEQUENCES.**

**Chiara Salvagni
PhD Digital Humanities**

Abstract

This dissertation includes a digital proof of concept called the “Comprehensive Odyssey”, which provides the text of the first 105 lines of the *Odyssey*, the secondary sources for each line and the scholia. This digital project was the focus of an analysis of the possibilities of the digital medium to produce a digital critical edition or rather a digital critical repository of the Homeric poems and their indirect tradition. The dissertation presents all the stages in this analysis. As this edition deals with Homer’s *Odyssey*, one chapter here takes into consideration the present situation in Homeric scholarship. The analysis also embraces an overview of the theory of oral composition, traditional referentiality, notional fixity and the process from oral to print to digital, bearing in mind that the project deals with a poem whose origin is not in the form of a written composition, but of an oral composition in performance. To assess the possibilities of creating a digital project concerning Homer, a review has been carried out of digital projects in Classics, some of which are centred on Homer. We also discuss the theories both of digital editing and of textual editing. Assessing digital theories helps when deciding about which framework to use for a digital project, and it was what assisted us in understanding the difficulties that would have to be overcome in order to make this project feasible. Moreover, this dissertation includes a detailed overview of all the technical challenges encountered while producing it, by this meaning the encoding process with XML and TEI and the visualisation process with XSLT. One chapter aims to provide examples of research that can stem from the collection of secondary sources and their understanding as fragmentary authors, together with an awareness of the problems arising from the creation of an edition from printed critical editions. The purpose of this dissertation is to assess the chances that this proof of concept may become a fully functional project and help in understanding the Homeric tradition. Most importantly, this proof of concept would be a never-ending repository which, with the help of encoding in XML and TEI, would always remain open to changes and improvements. The hindrances that the digital medium faces, such as copyright and ‘comprehensiveness’, are also pointed out. The concept of crowdsourcing is discussed, as it seems that it might serve to complete the encoding of all the sources of the “Comprehensive Odyssey”. Finally, the outcomes that might result from the above-mentioned ‘voyage’ are examined, leading to the conclusion that a project such as the one we envisaged is too ambitious, since it contains several different aspects within one project, yet is not a failure. It is a worthwhile journey that helps us understand the importance of studying orality in connection with collaboration in the

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digital medium and the value of studies on quotations and fragmentary authors for the secondary sources.

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CD-ROM INCLUDED

COMPREHENSIVE ODYSSEY HOME PAGE.HTML (HOME PAGE OF THE PROOF OF CONCEPT, START FROM HERE)

ODYSSEY BOOK 1. XML

SCHOLIA BOOK A.XML

BIBLIOGRAPHY SECONDARY SOURCES.XML

VERSI.XSL

FINALE.XSL

BIBLIOGRAFIA.XSL

INDIRECT SOURCES.XSL

LIST OF MANUSCRIPTS BOOK I.XSL

SCHOLIA LISTA.XSL

SCHOLIALIST2.XSL

BIBLIOGRAPHY ODYSSEY.XSL

SOURCE FILES.XSL

FINALE2.CSS

SCHOLIA MYTEI.RNC

SCHOLIALIST.HTML

BIBLIOGRAPHY SECONDARY SOURCES.HTML

MANUSCRIPTSBOOKI.HTML

SCHOLIALISTA.HTML

DOWNLOADS.HTML

INDIRECT TRADITION.HTML

SCHOLIA FRAME.HTML

SINGLE AUTHORS.HTML

FOLDER ODYSSEY 8 WITH ALL THE RESULT DOCUMENTS.

The files are available inside a zip folder at: <https://doi.org/10.5281/zenodo.572712>
and www.salvagni.eu.

Introduction: the “Comprehensive Odyssey”, a Voyage.

Homer’s *Odyssey* is a work which has been read and repurposed in numerous ways over several millennia. The object of our research was to investigate how digital tools might be used to present the evidence resulting from this complex process while also providing a critical text. More broadly, this has involved considering the definition of a critical edition – with all the implications of judgement, choice and selectivity – in a digital medium. This area is developing very rapidly: even during the period of this dissertation new approaches have been proposed. Our main purpose is to describe what we did in our pilot project, along with its rationale; but we also aim to set this in the context of other ongoing research, and we have indicated, at various points, approaches which we might use if we were starting our work today. There is still a lack of theoretical work in this area, and we hope to have made a contribution to such discussion.

In this study, we describe the steps taken to assess the feasibility of a digital project on Homer’s *Odyssey*, which will be more thoroughly analysed in the following chapters.

This dissertation includes a digital proof of concept called the “Comprehensive Odyssey”, which provides the text of the first 105 lines of the *Odyssey*, the secondary sources for each line and the scholia. This digital project has been the focus for an analysis of the possibilities of the digital medium to produce a digital critical edition, or rather a digital critical repository, of the Homeric poems and their indirect tradition. The dissertation will depict all the stages in this analysis. As this edition deals with Homer’s *Odyssey*, one chapter here takes into consideration the present situation in Homeric scholarship. The analysis also embraces an overview of the theory of oral composition, traditional referentiality, notional fixity and the process from oral to print to digital, bearing in mind that this digital project deals with a poem whose origin is not in the form of a written composition, but of an oral composition in performance. To assess the possibilities of creating a digital project concerning Homer, a review has been carried out of digital projects in Classics, some of them on Homer. We also discuss the theories both of digital editing and of textual editing. Assessing digital theories helps when deciding about which framework to use for a digital project, and it was what assisted us in understanding the difficulties that would have to be overcome in order to make the project feasible. Moreover, this dissertation includes a detailed overview of all the technical challenges encountered while producing it, by this meaning the encoding

process with XML and TEI and the visualisation process with XSLT. Another chapter aims to provide examples of research that can stem from the collection of secondary sources and their understanding as fragmentary authors, together with an awareness of the problems arising from the creation of an edition from printed critical editions. The purpose of this dissertation is to assess the chances that this proof of concept might become a fully functional project and help understand the Homeric tradition. Most importantly, this proof of concept would be a never-ending repository which, with the help of encoding in XML and TEI, will always remain open to changes and improvements. The hindrances that the digital medium faces, such as copyright and ‘comprehensiveness’, are also pointed out. The concept of crowdsourcing is discussed, as it seems that it might serve to complete the encoding of all the sources of the “Comprehensive Odyssey”.

At the outset of this research, we planned to examine the direct and indirect tradition of the *Odyssey*, which includes manuscripts, papyri and secondary sources, and to compare and contrast paper and digital editions of each of them. The aim of effecting a digital project emerged from studying Ancient Greek and Latin and having to handle printed critical editions. Printed editions are, in some respect, a work of art but they are also published in a way that alienates them from the general public and restricts them to a small number of users. In this dissertation, we investigate the question of how the publication of a critical edition of the *Odyssey* could be transferred to the digital medium, analysing one of its main assumptions, that is to say, the promise that, for the first time, it seems possible to reveal all the background material employed by an editor for a printed edition, rendering it public for other scholars at least to peruse, or perhaps even re-use, in order to produce a different edition.

For someone who has always dealt with Classics only in printed critical editions, the digital medium might be considered a threat to the intellectual property of the scholar producing the edition in the first place. While developing the “Comprehensive Odyssey”, we also recognized that the standard of a digital project of this kind should be kept very high if the community of classics scholars were to use such an edition; it must remain faithful to the same principles that establish a printed critical edition as scholarly. Producing a digital project is a process that one can start very enthusiastically since it seems possible to effect almost anything and to attain new perspectives that at first sight, seemed unlimited. However, as this dissertation will demonstrate, one soon realises that the initial optimism and faith in the digital medium might easily wane when

confronted with the many difficulties encountered in putting into practice the original plan for a digital project.

Régnier (2014, pp. 71-75) states that nowadays scholars are faced with the perspective of creating editions that will have almost no limits and which will never be finished, in a continual progress hindered only by economic restrictions. From Régnier's viewpoint, a digital edition should also leave room for a simplified relationship between editor and user/reader because this could provide a reliable text, avoiding overloading the page with notes and commentaries. Not all this occurs in reality, but it is how the production of a new edition is perceived before starting a digital project, when the mind can easily charge forward not yet having clashed with reality. The greatest reality check, as one might call it, occurs when the digital edition is still at the construction stage. The editor realises that every single aspect of the digital encoding requires more thought and involvement than s/he envisaged in the early stages.

As far as the "Comprehensive Odyssey" project is concerned, a survey of printed editions of the scholia, the manuscripts and the papyri is a task within easy reach, but one must consider the different requirements of these sources, and a digital edition of them will necessarily have to follow different approaches. Furthermore, as every reader can see by looking at the printed critical editions of the *Odyssey*, what they mainly lack is a repertoire of secondary sources, the only one available being the seventy-eight pages reserved for the list of the *Testimonia Veterum* in the XIX century La Roche *Odyssey* edition. The digital project conceived for this project would make it possible to add secondary sources to the project, without the preoccupation of engulfing the page with text and notes. Furthermore, it would permit the critical apparatus to be rendered less cryptically than in printed editions. This objective stems from considering an edition with unlimited possibilities, downsized to achieve a specific goal that could enrich certain aspects of *Odyssey* research.

Due to time constraints, we decided to restrict the proof of concept to an edition hosting the first 105 lines of the *Odyssey* text together with a critical apparatus, with the Scholia and the secondary sources, both of which linked to the main text. This proof of concept incorporates the critical apparatus so that it functions as a critical edition but one which, by including all the secondary sources and scholia, may seem more like a repository or an archive. This repository exploits the possibility of providing the critical apparatus in a way that might seem less daunting to the user/reader than that on the printed page.

We shall provide four examples of the kind of investigation of the secondary sources that can be pursued by using the “Comprehensive Odyssey”: an analysis of i. the word πολύτροπος, ii. the occurrences of Homer in a single author¹, iii. two Homeric lines quoted in order to highlight a geographical description, and iv. a description of the use of Homeric lines concerning a philosophical question; the analysis further reveals how the authority of Homer did not diminish in the course of time.

This project attempts to look at the sources from a different angle because, besides creating a digital critical edition of the *Odyssey* focusing on the indirect tradition and on the scholia, it will build a repertoire of the secondary sources, hoping to offer the best edition possible at the time of the creation of the digital project. We shall explain that our aims cannot always be achieved, either for copyright problems, or for problems concerning the choice of which edition to encode.

If, at the end of this study, we ask whether it would be feasible to carry out this type of research without using the “Comprehensive Odyssey” approach, the answer may well not be univocal, and it is perhaps not even the right question to pose. However, we realise that the question will eventually be asked, particularly on the part of the community of classicists. The same research would somehow have been possible, but by using this “Comprehensive Odyssey” the connection among these authors stands out immediately by simply scanning the secondary sources. Although each author will have his/her own bibliographical entry, with his own edition cited, all the texts will be on the same page, hence easily retrievable for a direct comparison. Even if there are cases where using a critical printed edition would suffice, this digital project offers a first consideration of textual issues which it has hitherto only been possible to analyse when employing printed editions with secondary sources.

To achieve the results described here, there has to be consistency in the use of editions of secondary sources, and this is where the major hindrance to this kind of edition occurs: which kind of edition should be used to achieve a consistent work from a classical point of view? Should one use the most recent editions for each text or it is sufficient to use what is available in editions no longer protected by copyright? In the latter case, will classicists consider the project consistent enough? Another problem that might arise is that on certain occasions a decision concerning a specific variant cannot

¹We should stress here how this kind of research might expand as more and more lines are encoded with their secondary sources. It might even become one of the main important characteristics of this digital project, permitting the study of Homeric quotations in one author or of a specific line found in other sources. In conclusion, however, this might seem a shift from the study of Homer towards his users and a journey too far-removed from a philological analysis, but we shall explain how, up to a certain point, they might travel together before separating.

be taken merely by analysing the sources directly and citing the line, with or without the variant; this brings us to the question as to how many secondary sources should be encoded in such an edition.

There has to be an evaluation of what the digital medium has achieved thus far and whether, after considering both the advantages and disadvantages, using it in a project of this kind continues to be worthwhile. A change is underway because a different medium is being used, which creates problems. On the other hand, many of them help the editor to refocus his/her attention on what we may term the text itself, particularly on the text of a specific author.

The reason for this is that a decision needs to be made every time a source is encoded about which edition to choose, and this makes the fact that there are problems in the editions available even more evident, something that might not be deemed very important while producing a paper. The “Comprehensive Odyssey” will provide texts of sources, not a discussion about their content. Hence, having to focus on the textual aspects of a work, the lesson about printed critical editions to be learnt from producing this digital proof of concept is very important for a digital project such as this, which is based on printed editions.

Therefore, to sum up, we shall offer an example of what can be obtained by surveying the first 105 lines of the first *Odyssey* book. At this stage, we cannot state what might be achieved should this digital project one day be completed.

After recognising the aforementioned issues, the form of this “Comprehensive Odyssey” changed from a platform holding the entire transmission of the *Odyssey*, to a platform holding a repository of the *Odyssey* text with its critical apparatus, the secondary sources and the scholia.

A further problem related to users/readers’ concerns about how a text may be seen on screen as opposed to on paper and how this may change the user/reader’s examination of the work of an author. The question of its feasibility concerns how many people should be involved in effecting it and how we should place the edition within the publishing field concerning the copyright of its contents and the funding needed for its completion.

We shall describe how the opportunities provided by the digital medium, which are almost certainly still evolving, require an amount of work that may be underestimated at the outset of a project, with the risk is the project might then remain unfinished. It is very difficult, if not impossible, to go back and reconstruct stages in the work that were not contemplated at the outset. This is another reason why the amount of

knowledge required by a digital project entails more than the knowledge of one editor alone, who may well be a leading expert on the author to be edited but does not necessarily have the competence to understand the requirements of the digital medium thoroughly.

We could compare its creation to a journey from omnipotence to reality. As soon as work started on the digital project, it became clear that, unless the author of this dissertation knew *a priori* all the steps to be followed in order to publish a digital project, it would never be completed. This is not to say that once one step has been taken, then that task is actually over. The digital medium offers no sense of completion. It will always permit the editor to go back and change, if not every feature, at least some minor details. To do this, the editor must have a direct, active knowledge of XML and XSLT, not a passive one. The editor must be the one to know how to handle the edition when no major changes are required.

It is not feasible for one editor alone to handle this entire process by her/himself, in terms of both time and capabilities. S/he must work alongside the developer so that the project may grow stage-by-stage, following a reciprocal exchange of ideas. Furthermore, the editor will thus be aware of how the edition functions and, despite not knowing how to handle certain technical aspects of the project, s/he will know the characteristics of the edition they are dealing with. Classics scholars always consider the word ‘collaboration’ suspect, valuing very highly the importance and the recognition their peers give to their work. This project is not the edition of the work of one ancient author but an edition/repository of many diverse ones. What collaboration should we envisage for a project of this scale? Understanding the difficulty of assembling different editors for every author, since scholars are unlikely to publish new digitally born editions of every author in the secondary sources merely thanks to a project aiming to congregate all the secondary sources of the *Odyssey*, we investigated collecting printed editions. Starting from analysing the Homeric poems as works composed through oral composition in performance and orality as a communicative medium relying on an exchange between the speaker, in our case a rhapsode, and the listener, the public, we look at how the digital medium could be compared with orality and whether crowdsourcing could be employed in the “Comprehensive Odyssey”. To achieve this, we analyse in sequence the tradition of the *Odyssey* and orality, digital projects on Homer and Classics, digital scholarly editing and textual scholarly editing. We shall proceed from first describing the principles and encoding process of the “Comprehensive Odyssey”, followed by a chapter on secondary sources, the choice of

edition and the collection of quotations. The dissertation will end with a summary of the most important points raised, together with an investigation into crowdsourcing and its possible positive implications for the “Comprehensive Odyssey”.

What will be the outcome of this voyage of discovery? Will the “Comprehensive Odyssey” be seen as an unfeasible, over-ambitious project or will it have a future?

Whatever the result of this question, it will be a worthwhile journey towards the understanding of the importance of studying orality in connection to collaboration in the digital medium and of the value of the studies on quotations and fragmentary authors for the secondary sources.

Chapter 1 The Tradition of the *Odyssey*: Direct and Indirect Tradition, Orality, the Theories of Unitext and Multitext and Printed Editions.

1.1 Introduction.

The texts of the *Iliad* and the *Odyssey* have been handed down to us both directly and indirectly. Here we focus on the tradition represented by the medieval manuscripts (the codices), the scholia, the papyri and the indirect tradition. Regarding the *Odyssey*, the material at the disposal of the editor concerns both the textual and the exegetic tradition, hence all the transmitted material pertaining to the commentary on the text. The following sections first describe the direct and indirect tradition, after which the theory of Orality is presented in detail, in order to understand what distinguishes Homeric poems from other texts in the Ancient Greek tradition, and how this is a focal point of Homeric scholarship. The concepts of oral composition in performance and a comparison between orality and literacy will be depicted as fundamental for the comprehension of the oral and written modes of communication. This chapter will stress the evolution of these modes and how the relationship between users and readers can be reshaped by the digital medium. The Homeric poems will be seen as the link between the cultures of orality and literacy and the digital medium. Understanding the importance of orality in the Homeric tradition is indispensable for the comprehension of the two most significant theories behind the critical editing of Homeric poems, i.e. the theory of unitext and multitext. The final sections include an account of van Thiel's edition of the *Odyssey* and of Pontani's edition of the *Odyssey* scholia and why they were chosen as the printed editions on which this digital project is based.

1.2 The direct and indirect tradition of the *Odyssey*.

Papyri:

All the papyri testimonies were produced from the third century B.C. to the eighth, or even ninth, century A.D., whereas the chronological timeframe covered by the papyri that specifically report the exegetic tradition of the *Odyssey* can be restricted to a phase that extends from the first to the sixth century A.D. A list of the Homeric papyri can be found online at the *Homer and the Papyri Database*, hosted by the Centre for Hellenic Studies: <http://www.stoa.org/homer/homer.pl>. A bibliographic record for

the published papyri is in the *Catalogue of Greek and Latin Literary Papyri or Mertens-Pack*³, now available online in the form of a database: <http://promethee.philo.ulg.ac.be/cedopal/index.htm>, on the online platform of metadata text databases coordinated by the project Multilingualism and Multiculturalism in Graeco-Roman Egypt called *Trismegistos* <http://www.trismegistos.org/index2.php>. Another place where aggregated information about the Papyri can be obtained is the web site <http://papyri.info>, with links to papyrological resources and an editing application called Papyrological Editor. It should be stressed that papyri.info is not a database or a list of papyri, but a web site where papyri from multiple sources can be displayed together, by this meaning collections of texts which could be edited through a Papyrological Editor, thus producing a compendium of documentary editions of papyri.

The papyri concerning the exegesis of the *Odyssey* can be divided into various categories:

- papyri with annotations in their margins
- papyri that contain a hypothesis
- papyri with glossaries (first century A.D. to fourth century A.D.)
- papyri that contain the *Mythographus Homericus*, a collection of mythographic histories drafted in the first century A.D.
- papyri with commentaries.

The annotations in the margins are mostly glosses; there are a few cases of papyri bearing no annotations, merely critical signs referring to a commentary, and cases of papyri with a high density of explanations. The most interesting papyri hand down commentaries describing a tradition that in certain cases no longer exists in the medieval manuscripts (Pontani, 2005. pp. 105-113).

Scholia:

The scholia to the *Odyssey*, as they are now called, are a collection of various commentaries found in the margins of medieval manuscripts, especially from the ninth or tenth century, perhaps even from the fifth century (Pontani, 2005. pp. 145-152). The scholia are a collection of various exegetic materials, determining the form of the ancient critical material available, and the product of selective processes decisive for the survival of the heritage of ancient interpreters and grammarians. The data derive from three collections of scholia, each originating from the remodelling of previous material:

- scholia V
- the Apion Herodorus scholia (ninth century)
- the codex Venetus A scholia (tenth century).

Scholars of the *Iliad* can refer to all three collections, whereas an editor of the *Odyssey* can use only scholia V, the other two making no reference to it (Pontani, 2005. p. 149). The Apion Herodorus and the codex Venetus A are the only testimonies of a summa of the commentaries of four ancient Grammarians (Didymus, Aristonicus, Nicanor and Herodianus first century BC - second century A. D.) called the Vier Männer Commentaries assembled between the fourth and sixth century A.D. but lost for the *Odyssey*. Scholia V are first attested in a medieval manuscript of the late tenth century, the V^o= Oxford, Bodleian Library, Auct. V.1.51 (MISC. 288; OLIM SAN MARCO 231) and are a compilation of glossaries dated from the first to the sixth or seventh century A.D (Pontani, 2005. pp. 145-148). Van Thiel (1991, p. xix), on the contrary, dates the V scholia to the eleventh century. Erbse did not include the V scholia in his edition of the *Iliad* scholia published between 1969-1988, but Pontani incorporated them in his edition of the *Odyssey* scholia. They are available as a separate, independent edition, published by Ernst in his 2006 doctoral dissertation, freely downloadable via the University of Köln portal². It should be stressed that these scholia are not always cited using the sigla of the manuscript, but the initial of the pseudo-epigraphic title of the first edition, Διδύμου τοῦ παλαιστάτου εἰς τὴν Ὀδυσσεΐαν ἐξηγήσεις, which was published by F. Asulanus for Aldus Manutius in 1528. Pontani, who is followed in this description, uses the sigla V for this corpus of scholia (2007, p. x-xi), adding suprascript letters to distinguish between manuscripts and editions that derive directly or indirectly from the archetype V^o (2007, p. xxxvii). Sometimes the lemma in the D-scholia cannot be found in the direct transmission. This, together with a textual comparison of manuscripts and papyri, shows how not all the late antiquity readings were carried over to the minuscule manuscripts (see Haslam, 1997, p. 95-96).

Before providing a brief description of the manuscripts' chronology, it is important to offer a short overview of the principal sources we can recover from the scholia. They are highly important, being the product of the accumulation of sources from different ages, some even from late Antiquity, such as the work of the ancient scholars of the 'Alexandrian school' (Pontani, 2005. pp. 42-57), who provided a version and commentary of the Homeric text. The so-called Alexandrian school was a productive milieu created under the Ptolemaic dynasty in the Alexandrian museum in the third and second century B.C. Its founders were Philitas of Cos and his pupil Zenodotus of Ephesus, who wrote one of the first revised editions of the Homeric

² <http://kups.ub.uni-koeln.de/1831/>. Accessed 7th. August, 2015. See page vii for a detailed page on the editorial history of the D-Scholia.

poems, between the second half of the fourth century and the early third century B.C.³. The Alexandrian school reached its apogee with Aristophanes of Byzantium⁴ and Aristarchus of Samothrace⁵. The study of the 'Alexandrian school' continued during the Roman age with many scholars, among whom we should recall Didymus Chalcenterus, whose works in the Augustan age make him the most important collector of previous centuries'⁶ scholarship.

Manuscripts:

Research into the history, connections and readings of the manuscript tradition is complex due to the entangled distribution of readings among the manuscripts. There is not only contamination among them, but also the influence of the intricacy of the earlier tradition. A study of the manuscript tradition of the *Odyssey* should follow Allen (1910) and Tachinoslis (1984). The number of minuscule manuscripts of the *Odyssey* is less than of the *Iliad*, and only two come before the 13th century.

Those two most ancient medieval manuscripts are the G= Florence, Biblioteca Medicea Laurenziana, Laur. 32, 24, from the tenth century, and the F= Florence, Biblioteca Medicea Laurenziana, CONV. SOPPR. 52, from the eleventh century. They do not bear scholia, the first manuscript to do so being the P=Heidelberg Palatinus 45, dated 1201. The most ancient testimony to the tradition as a whole is the tenth century codex V^o written in Constantinopolis, not containing the text of the *Odyssey* but the corpus of scholia V. The major difference between the poems is that there are no manuscripts from the eleventh and twelfth century for the *Odyssey* and, for this reason, it is more difficult to trace the history of the scholia tradition. The manuscripts of the 13th-14th centuries bring inherited readings not derived from earlier manuscripts. We can find scholia in them and variants and collation from another exemplar, but very few are of certain provenance. Important readings may also be discovered in 15th century

³ The most famous scholars of the Alexandrian school who dealt with Homer and his poems are: Agathocles of Cyzicus (third century B.C.), Hellanicus (third century B.C.) and Aratus of Soli (third century B.C.). In the mid-third century we also find Apollonius Rhodius, Rhianus, Comanos of Naucrati, Athenocles of Cyzicus, Agallis of Corcyra, and Timolaus from Larissa (Pontani, 2005. pp. 45-47).

⁴ Aristophanes of Byzantium, director of the Bibliotheca Alexandrina around 195 B.C, produced an edition of the Homeric poems with critical signs in a coherent system, following those adopted by Zenodotus, who was influential in the progressive accentuation and punctuation of the Greek language and wrote an important Greek lexicon (Pontani, 2005. pp. 48-49).

⁵ Aristarchus of Samothrace (ca. 216-144 B.C.), librarian of the Alexandrian library, wrote two editions of the poems, critically discussed his editorial choices, produced papers on Homer, broadened the system of critical signs describing his choices of punctuation and accents and contributed to the development of the normative grammar, interpreting Homer in the light of what it is possible to find in Homer (Pontani, 2005. pp. 50-52). There were many other scholars after Aristarchus, especially Demetrius Ixion and Dionysius Thrax (ca. 190 - 179B.C.) (Pontani, 2005. p. 55).

⁶ Didymus Chalcenterus lived in Alexandria in the second half of the first century B.C. and published commentaries on Aristarchus, raising discussions about what he had actually inherited from his predecessors and what derived, on the other hand, from his own research (Pontani, 2005. pp. 62-63).

manuscripts. Furthermore, as Haslam points out (1994, p.94), the number of readings attributed to Aristarchus is greater and distributed in a more orderly fashion than in the *Iliad*.

The subdivision of the manuscripts into families effected by Allen in 1910 is still followed, albeit criticised, in subsequent editions. Firstly, Allen gives a detailed list of the 76 manuscripts that were found up to 1910. They fall into seventeen families depending on “a process of noting all the cases of variants presented by ten or less than ten MSS. and casting them away” (1910, p. 17). The ones that “agree most often in presenting such variants have a claim to the title of family” (1910, p. 17). Each family is described first by the “specimen of agreement between the members” (1910, p. 17) and second by its characteristics. In the latter case each family is put under a specific head, “Alexandrian, Ancient but-non Alexandrian, coincidences with Eustathius or with variants in other MSS., unguaranteed but noteworthy” (1910, p. 18). Allen further details the importance of each family under each head. He stresses the impoverished tradition of the *Odyssey*, compared with the *Iliad*, two hundred manuscripts versus seventy, this offering help to the scribes when copying them. Furthermore, “many MSS. are so closely and systematically corrected that, what between text and margin, they contain the whole tradition” (1910, p. 61). In conclusion he describes the readings of Eustathius and of the *editio princeps* followed by a list of the papyri up to 1910.

The following division of the medieval manuscripts is that described by Pontani in his book about the exegetic tradition of the *Odyssey* (Pontani, 2005, pp. 273 ff.). He divides the manuscripts according to their provenance and to the age in which they were written, without taking into account the readings they carry (Pontani, 2005, Index, pp. 597-600):

- The Byzantine age and Constantinople
 - the dark ages (sixth-eighth century)
 - Constantinople, ninth-tenth century: early Byzantine humanism
 - Constantinople, eleventh-twelfth century: the major Homeric philology (V^o, G, F).
 - The thirteenth century: Nicaea and the provincial areas (H, P, y, Marc. GR. 410, Y, M)
 - Constantinople, 1261-1350: the age of the *palaiologos* Renaissance (D, E, X, s, C, I, T, B, N, S, k, n, h, Z)
- Renaissance Humanism
 - 1350-1450: the transition and early Humanism (J, I, Vat. Gr. 906, V¹)

- 1450-1500: the flourishing of Italian Humanism (here the manuscripts are listed under the name of the scholar to whom they are attributed or who copied them, called by Pontani the masters: Andronico Callisto, Teodoro Gaza, Demetrio Calcondila, Giovanni Argiropulo, Angelo Poliziano, Costantino Lascaris and the copyists, Giovanni Scutariota, Giovanni Roso, Demetrio Xanthopulos, Demetrio Trivolis, Demetrio Raul Cabaces, Demetrio Mosco, Antonio Damilàs, Michele Lygizos)
- 1500-1550: the autumn of Italian Humanism

The subdivision is first by time and then by place but there is a further description in relationship to their readings, the different hands that can be found and the variants they carry. Pontani helps place the Homeric manuscripts in an historical perspective, letting us understand the tradition we are dealing with while attempting to reshape a critical edition in digital form.

Indirect tradition:

The indirect tradition, on the other hand, is composed of all the works of ancient Greek literature quoting a line of the Homeric poems. Its study involves first an analysis of all their printed editions available as there is no single printed edition where all the secondary sources are to be found. However, the best publication with which to start is one of two editions published in the second half of the nineteenth century: that edited by Jacob La Roche in 1867-1868. In the second volume, there is a section called ‘*testimonia veterum*’, which holds a list of secondary sources under every line in each book, adding sources to those in the critical apparatus. The other edition is Ludwig’s work of 1889. Here, as in every later edition, there is no specific place dedicated to the indirect tradition; all the indications concerning the secondary sources can be found in the critical apparatus. Other editions checked were those of P. von der Muehl (1912), Allen (1917), Stephanie West (1981) and van Thiel (1991). The sole examination of these editions does not provide a comprehensive overview, particularly because one can only assume that there is a general tendency to cite in the critical apparatus only those sources considered important for understanding variants, and, hence, there are fewer and fewer secondary sources cited in them. In order to obtain the most comprehensive list of secondary sources available it is necessary to use the *Thesaurus Linguae Graecae* (TLG) and carry out a textual search into every line. We should stress that this research was carried out using the previous version of the TLG and not the new one created using the Extraction for Structured Knowledge from Ancient Resources for Classical Studies - Extraktion von strukturiertem Wissen aus Antiken Quellen für die

Altertumswissenschaft (eAqua⁷) approach, which will be described in detail in the following chapter. At this point we should state, as this dissertation will demonstrate, that it is almost impossible to follow the change in technology while developing a proof of concept, and every project will always be shaped by the technology available at the time of its elaboration.

The addition of the secondary sources to a critical edition involves two different aspects, a survey of the variants and the understanding of Homer in different periods, from late antiquity to the early Christian age. There is the risk of doing too much, of not understanding that these aspects are different and of being overambitious, taking the concept of “Comprehensive” too far. It might be difficult to make users/readers understand the goal of the “Comprehensive Odyssey”. Nevertheless, we should never forget that the aforementioned parts are linked. It is almost impossible to connect them in a single project despite it being obvious that the latter cannot exist without the former. Comprehending Homer in other authors begins with an understanding of their texts, which is impossible without employing a critical edition. Firstly, there should be the production of a critical edition of the Homeric poems, which can be completed only with the variants extant in the secondary sources. A project constructed in this way could then follow a second path, the analysis of the secondary sources and of the meaning of Homer within them. Here we stress that, starting from a critical edition of the *Odyssey* together with the indirect tradition, inferences and studies could be made on the re-use of Homer and on his meanings and characteristics in those works. This does not mean that such an endeavour should be pursued along with a critical edition, only that this is one kind of research that could arise after its completion. The two paths are different and do not run alongside but in sequence. The discussion on how secondary sources should be treated in a proof of concept such as the “Comprehensive Odyssey”, described later in this dissertation, will depict both approaches as possible researches that will be available for classicists and how they could be differently shaped by a digital critical edition/repository.

The notion of edition proposed for this proof of concept is based on existing printed editions, and those chosen will be used as a basis for describing the challenges that lie behind a project on the Homeric poems. Furthermore, the edition will highlight two different aspects that will be later analysed, the concept of unitext versus multitext and the importance of orality in the understanding of the Homeric tradition.

⁷ <http://eaqua.e-humanities.net> Accessed 15th. August, 2015.

1.3 Single editions of the sources.

The aforementioned tradition includes the sources an editor of the *Odyssey* should consult when creating a critical edition of the poem. The product of this in-depth analysis is the critical edition, and the reader can inspect the sources only in the critical apparatus, where editorial choices are discussed and explained. West explains in his book on *Textual Criticism and Editorial Technique* (1973, imprint 1991, p. 88) the rules which allow the reader to understand the information in the apparatus because the reader can only refer to the editor for specific information about the sources. Every entry in the apparatus, normally written in Latin, provides first the place where the variant is found, secondly the lemma and thirdly the alternative readings in the direct tradition, indirect tradition, and conjectures. In constructing the apparatus, it is mainly important to identify the witness of every reading via a *siglum* representing a codex, with no discussion on the importance of a lection over another.

The sources are not edited within the edition of the text; the reader will normally find specific information about them in the different editions of papyri, epigraphy, fragments and scholia (West, 1973, imprint 1991, pp. 95-99), each being the result of the studies of different scholars, according to their own experience, hence with definite characteristics. No edition contains all the sources edited alongside the text: the tradition of the *Odyssey* is treated separately. A printed critical edition cannot convey all the variants in the medieval manuscripts, the scholia, the papyri and the secondary sources (West, 1973, imprint 1991, pp. 88-89). Sources are edited separately from the text not only because each one was edited by an expert in a specific field, such as a papyrologist or a palaeographer, but mainly because of the limitations of the printed page. Taking the *Odyssey* as an example, looking at the editions of the text, one finds it on one entire page with the critical apparatus at the bottom. The edition of the scholia and of the papyri are similarly prepared, with the difference that only those of the papyri are normally accompanied by images due to the expense of reproducing high quality pictures. Despite the nineteenth century being called by Frédéric Barbier the “siècle de l’image” (Barbier, 2012. p. 276), thanks to printers’ innovative techniques for including pictures in books, the costs of reproducing an entire codex would still be too great for any one edition. For this reason, the pictures of papyri can be reproduced because papyri are usually small, while codices contain hundreds of pages. However, there is also the need to provide a means for understanding the readings presented by the editor, which usually involves the collection and combination of fragments. These editions work alongside one another, yet only their combination can give the scholar a complete

and full understanding of the text, while printed editions focus only on one source or only on the text itself. In the *Homer and the Papyri database* mentioned above, each of the papyri listed has its own printed edition or digital publication, so it is fair to say that not even the papyri have one unique edition. An edition of the scholia carried out by Filippomaria Pontani is now on-going, while Helmut van Thiel published the last critical edition of the *Odyssey* in 1991. If we add the secondary sources, there are also their single editions to be analysed while carrying out the digital edition.

How could this status of single detached editions change in a different kind of edition which will maintain a scholarly status yet at the same time provide something new to be considered worthwhile? Digital editions can challenge the classical view of critical editing as an endeavour carried out by single scholars in the course of time, concerning only one aspect of the textual tradition, separate from the text on which they are commenting. Creating a digital edition in reality means far more than merely contemplating how to combine different editions. We will show that there are many decisions that need to be made by a digital editor even before starting to construct the edition itself.

1.4 The importance of orality in the tradition of the Homeric text.

Before describing the two above-mentioned editorial theories, another phenomenon needs to be explained, the importance of which within the two editorial practices is widely recognised, albeit to varying degrees. This is the oral-formulaic theory, connected also to mnemonic techniques, such as “metre, alliteration, rhyming, repetitive phrasing, formulaic word patterns” (Danziger, 2011, p. 59). This concept will be analysed through a review of the notions of formula, theme, style, transition from orality to writing, ending with the evolutionary model of Nagy. After describing the reaction to oral-theory, attention will shift towards the notion of ‘word’, Foley’s traditional referentiality and Gonzalez’ notional fixity. In conclusion, following Ong on orality and literacy, we shall stress how oral-theory and the study of the Homeric poems could help understand the digital medium as a medium for interaction that might reconnect the history of communication to its oral origins.

The study of orality involves the analysis of practices of oral recitation because the first didactic texts on memorization techniques, such as Aristotle’s *On Memory*, Cicero’s *De Oratore*, the *Rhetorica ad Herennium* and Quintilian’s *Institutio Oratoria*, to mention just the most important ones, refer to a period of time when the advice given was connected to the recollection of information in written documents, with literacy becoming more prominent. Our notions about orality are usually inferred from the study

of orality in modern societies, carried out particularly at the beginning of the last century, because the mnemonic techniques analysed by reading these ancient sources do not refer to the devices acquired by bards in their training (Danziger, 2011, pp. 60-61). Danziger describes the change in the importance of memory with the development of writing and rhetorical techniques. In his opinion, two ideas of memory existed at the time of oral compositions, the memory of words and the memory of things, which is what the words refer to. Oral performers were more interested in the general meaning behind their recital, than in the exact words used to convey that meaning. The advent of writing made the words become material objects, detached from their meaning. Writing first became an aid, being read aloud, before becoming an object that would be visually reproduced, mainly using the same aids as we do, aids that can be called mnemonic devices, formed particularly in the Middle Ages and in the monasteries. From being a reminder of actions and events for the reader, texts became a method for retrieving information for practical purposes. This was possible through the development of text retrieval indexes with numbering in the text and collections of excerpts, available mostly when printing appeared. During the Enlightenment (Danziger, 2011, p. 84), with the spread of print, memory of facts became far more closely connected with writing, while personal memory became more “personal and idiosyncratic” (Danziger, 2011, p. 85). Writing is used for accuracy and fidelity, meaning the exact reproduction of a written text. Despite being far-removed from the notion of oral composition in performance nowadays associated with the Homeric poems, this, as it will be shown, is only another step in the history of communication reaching our age of the digital medium.

To return to the Homeric poems, the question of orality is as old as modern Homeric studies. How the oral-formulaic theory works helps comprehend how the Homeric text may have been transmitted before, and after, its transition into the written form since it is widely recognised that it was not born as a written text but as an oral text performed by rhapsodes. Minna Skafte Jensen reviewed the theory of orality in her book of 2011, *Writing Homer: a Study Made on Results in Modern Fieldworks*, where she analyses the transition of the poems from orality to writing, comparing them with the studies on formulaic language by Milman Parry (1928-35) and Albert Lord (1960). The oral-formulaic theory they outlined is based on the concepts of formula, theme and style. A formula is “a group of words that is employed under the same metrical conditions to express a given essential idea” (Parry, 1928-35, imprint 1971, p. 272). A theme (Lord, 1960, pp. 63-69) is a narrative pattern also seen as a formulaic unit that

can be repeated with no precise verbal correspondence, with possibilities of omissions, additions and the union of different patterns in case of weak points “where episodes of one thematic pattern can come together with those of another...and lead a singer logically on to another story pattern or to confusion, points at which a singer is faced with a choice” (Arant, 1963/1990, pp. 118-119; 160-161 in Jensen, 2011, p. 64). The notion of style (Jensen, 2011, pp. 70-73) describes how the line is structured as a basic unit. “Each verse brings the narrative to a meaningful stop” (Jensen, 2011, p. 70), even if the sentence continues in the following lines, which is very important in an oral tradition. The line is considered a place for the singer to stop amidst the problems and emotions peculiar to a story.

It has been said by Russo (1997) that a formula is a part of speech with a specific configuration, part of a new series of definitions that would overcome the constraints of Parry’s explanation: the structural formula, the flexible formula and the variable formula. The structural formula is connected to the structure of the hexameter and the syntax. The flexible formula (Hainsworth, 1964-1968; Hoekstra, 1965) is associated with a change in the structure but not in the content. It explains the adaptability of composition in performance with a change in the word order, in the syntactic forms, and in the modernisation of archaisms, with no changes in the content (Russo, 1997, p. 246). The generative or variable formula (Nagler, 1974) does not consist in a specific series of words but rather a “pre-verbal mental template” (Russo, 1997, p. 251), a “psychological cola or rhythmical group, a derivative of some pre-verbal mental entity underlying all the phrase at a more abstract level than that realised at the moment of utterance” (Edwards, 1997, p. 274). They are trying to express a sense of a formula whose elements cannot vary semantically but from a grammatical or syntactical point of view. There should be words used to express a specific idea with other words that can vary depending on the kind of hexameter line needed, as Visser put it in his “nuclear” theory of 1987 (Russo, 1997, p. 254).

Furthermore, Bakker in his article ‘The Study of Homeric Discourse’ (1997), sees formulae as “phenomena of spoken language” (Russo, 1997, p. 258), meaning that studies need to link the formula to the medium that first expressed it, i.e., the spoken language. Bakker does not separate oral and written literature but compares Homeric poems with speeches and how different thoughts come to mind in succession because he is distinguishing two different meanings of the word ‘oral’. Firstly, what is oral can be contrasted stylistically with what is written: if the language is more informal and unplanned, then it is oral, not written. Secondly, “oral” also means that a discourse is

spoken aloud, with the voice, not through graphic signs, so orality becomes a medium of expression, a different way of using language, with no differences between formality or informality and no need to consider the Homeric poems' transitional texts. It is as if Bakker were keen to stress that there was not a time when writing appeared and orality disappeared, because for him orality is connected with speaking, saying things out loud, which did not disappear when writing appeared as a medium (Bakker, 1997, p. 287).

In his opinion, the flow of Homeric lines works like a speech with "a series of short speech units that are more or less loosely connected syntactically" (Bakker, 1997, p. 292), which cannot be read separately or be grammatically correct, because they create "a context for a listening audience". There is no need to forget the concepts of formula and meter as they can be added as "*enhancement, stylization* of the basic properties of speech" (Bakker, 1997, p. 300). A formula is "an intonational phrase, the primary bit of ordinary discourse" (Bakker, 1997, p. 300), and it can be what transforms everyday speech into a literary work, a poem. The formula gives to the discourse a rhythm that is not confined just to a single line or part of a line, a cola, but thanks to enjambment, can be linked to the following line, forming "enjambing intonation units" (Bakker, 1997, p. 302). For him this occurs in special places in the poems, clusters, where there are metrical difficulties. Bakker argues that these specific, varying changes can be better seen as important and effective if connected to speech and to its need to avoid being too correct, creating what he describes as a "dull sequence of cognitive units" (Bakker, 1997, p. 303).

It is impossible to describe orality at the time of the *Iliad* and the *Odyssey*. We can only analyse the material collected by Parry and Lord. One of the characteristics of oral epic is its being stable and ever changing: stable because it holds formulas and phrases that are part of the tradition accompanying the narration of a specific story, and ever-changing because, despite always being narrated in a specific and recurrent way, it deals with a collective folklore not repeated in the same way in the various recitals, performed by different or by the same singers in several performances (Jensen, 2011, pp. 72-73). Even if performances may convey a sense of reliability, singers could also adapt them to the vision of the world and the ideology of different audiences (Jensen, 2011, pp. 128-130).

Jensen derives this concept mainly from an analysis of the material recorded in the last century, in particular that collected by Parry and Lord, which can only be partly related to the origin of the *Iliad* and the *Odyssey*, and to the concept of singers and rhapsodes. Nevertheless, it gives a clearer view of how an oral epic poem might be

produced and survive throughout the centuries. If the same or similar processes occurred during the original composition of the Homeric poems, it is highly likely that the Homeric text that was handed down to posterity is the result of several changes and reformulations of a various nature. Greek culture shifted from orality to writing, but it is uncertain how the written text was perceived at that time and how long orality remained the more significant way of communicating among people. The presence of books, looking at vase paintings, can be attested from the sixth century B.C. in Athens with Peisistratus, who seemed one of the first to own a library at around 550 B.C. Jensen stresses that attestations of an omnipresence of books and writing might be seen from around 300 B.C. (Jensen, 2011, p. 195-196).

Another question connected to the interaction between orality and writing is when, and how, the transition from a purely oral transmission to a written text occurred for the poems. The evolution from the oral to the written form can be described as a transition between two media, and the Homeric poems have been defined as transitional texts (Jensen, 2011, pp. 197-203), the term transitional signifying many things, from considering the passage to the written form as an evolution to a superior medium, to being a simple process of changing one old form of transmission to another. Jensen (2011, pp. 182-187) describes two types of transitional texts. One is a work composed in writing and performed orally, with writing considered an aid to composition, such as with public speeches. The other considers epics as a composition by an oral poet who writes poetry rather than performing it orally, an oral poet who decides to write and, by so doing, combines elements from the two media.

Nagy, however, proposed an evolutionary model, a cumulative process entailing a diachronic perspective for the variants in different versions of Homeric readings. Nagy expresses his ideas with formulae:

- Transcript is “the broadest possible category of written text, a record of performance, but not the equivalent of performance”
- Script is “the written text as a prerequisite for performance” and scripture is “when the written text does not even presuppose performance” (Nagy, 2009, p. 5).
- Fluid and rigid are “degrees of rigidity or fluidity in the evolution of Homeric poetry” (Nagy, 2009, pp. 6-7) and are metaphors in the composition of his evolutionary model.
- Definitiveness means “to examine relative degrees of definitiveness in the status of Homer from one age to the next” (Nagy, 2009, p. 7).

- PanHellenic and formative (terms used together) are relative terms and are “absolute only from the standpoint of insiders to the tradition at a given time and place, and [...] relative from the standpoint of outsiders, such as ourselves, who are merely looking in on the tradition” and PanHellenic “poetry would have been the product of an evolutionary synthesis of traditions, so that the tradition that it represents concentrates on traditions that tend to be common to most locales and peculiar to none”. (Nagy, *Pindar’s Homer*, 1990, chapter 2, par 2 / *Homeric Questions*, 1996, pp. 39-42).

Nagy (in *Homer the Classic*, Prolegomena, 2009) describes five stages of development, from a “most fluid” period to a “relatively most rigid” period. It may be of interest to report here Nagy’s exact division (2009, pp. 4-5):

- 2000-750 B.C. most fluid period and no written text
- 750-550 B.C. formative period or Pan Hellenistic
- 550-320 B.C. definitive period with transcripts in Athens
- 560-510 B.C. beginning Pisistratid Athens
- 320-150 B.C. standardising period with scripts
- 317-307 B.C. reform of Homeric performance beginning with Demetrius of Phaleron
- 150 B.C. rigid period with texts as scripture, thanks to the work of Aristarchus of Samothrace in Alexandria.

The first two periods are stages where there is no presence of a written text and the third is the stage where writing begins as transcripts. At this stage, according to Nagy, the transition from orality to literacy begins, which lead characteristics of oral compositions on the path towards a written transmission. These may stem from a tradition of continual performances, which for Nagy is part of his evolutionary model; variations are stages in transcribing the oral tradition. On the contrary, Parry talked of variations in the text as variants coming from different oral traditions.

Summing up our reasoning from Nagy, we can state that without prejudice towards the reasons for a passage from an oral tradition to a written tradition, in the case of the written tradition we think that we are in a sphere that will take us back to a more evolved mentalization, if it can be thus defined, i.e. a rational one, which takes into

consideration the differences in time, place and motive within which the same contents needed to be transmitted; we do not deny, even with these modifications, that an essential moment of poetical creativity might have occurred. Undoubtedly, verbal transmission places us in the face of the greater plasticity of an irrational and affective world, where even the sole sound aspect influences the different past aspects. Taking as a model the aspect of the “point de capiton” of Lacanian influence⁸, it is possible to presume that the link between words and content becomes more and more rigid, shifting from the preverbal to the verbal and from the verbal to the written.

As Jensen says, the studies of Parry and Lord seemed a breakthrough in the tradition that until then had been divided between considering the Homeric texts as the result of different materials by various authors assembled in the course of time and believing that a single individual stood behind the poems. Orality, as a new alternative theory to the explanation of their composition, sparked criticism as well as praise. The development of this theory came not only from a direct analysis of the Homeric text but also from fieldwork, and one question was how to develop laws from different traditions and diverse genres and media.

Another question was that the Homeric poems were regarded as being of better artistic quality than those discovered by Parry and Lord in Yugoslavia, so a comparison with something of lower quality was considered impossible. As regards this concept of artistic quality, Edwards (1997, pp. 262-263) recalls the opinions of Combellack (1959) and Notopulos (1949). They wonder whether the notion of literary criticism could be applied to a work created by using convenient formulas, strictly adhering to Parry’s point of view. Combellack (1959, p. 196) argues, “It is now hard, or impossible, to find artistry in many places in the Homeric poems where critics of the pre-Parry age found beauty and where contemporary critics often still find it”. Notopulos (1949, p. 1) asks, “Do the same principles of literary criticism apply to both written and oral literature? The answer is no”. It is as if the artistic expressions in the Homeric poems are nullified by the presence of the repetition of the formula.

We must now look at two very essential concepts that will be important in our description of the connection between orality and the digital medium as a new communication method: ‘words’ and ‘traditional referentiality’ in the works of Foley.

In Foley’s opinion a “‘Word’ is a unit of utterance rather than typography” (1997, p. 152) and ‘Words’ are “cognitive units of traditional expression” (Foley, 1999,

⁸ See Lacan, J., 1981. *Le seminaire livre III, Les Psychoses 1955-56*. Jacques Alain Miller ed. Paris: Edition du Seuil. pp. 293-306.

p. 22) expressed solely through the tradition and medium they are in and not universally defined⁹. Foley believes that if ‘words’ were not to be recognized as units of utterance and as parts of a larger phraseology, this would “cancel their idiomatic function and fracture their meaning” (Foley, 1999, p. 202).

Connected to the notion of ‘Word’ is the concept of traditional referentiality, which, in Foley’s opinion, means creating an identifiable context thanks to the addition of different signs. Every sign is a *sêma*, a sort of entrance into the world of communication immanent in the Homeric poems¹⁰. Regarding signs, one of the most important notions expressed by Foley in many places throughout his book *Homer’s Traditional Art* (1999) is that “oral traditions work like languages, only more so; using such language means reading behind as well as between the signs” (Foley, 1999, p. 20). Modern readers would understand better the Homeric poems by accepting their hidden structure, the relations that come about by reading behind the signs, “these larger words [that] can evoke associations that are nowhere to be found in the literal denotation of the smaller words that make them up” (Foley, 1999, p. 205).

In Foley’s opinion traditional oral expression depends on the performance arena, registers and communicative economy. The performance arena is where the communication between the narrator and the audience takes place, registers¹¹ are the kind of language that will be shared during the recital. They are languages that vary within a set of traditional rules. Communicative economy is where a “simple part projects a complex whole” (Foley, 1999, p. 25). It means that referring to a single element, be it either a word, a sentence or an event, will stir the memory of the audience and make them recall an entire array of events¹². Every line of the *Odyssey* carries a meaning, which signals the register and communicative economy exclusive to the Homeric poems.

Foley connects ‘words’ and ‘traditional referentiality’, stating that traditional referentiality works side-by-side with traditional morphology, which designs the various metrical functions a sign can cover, depending on its morphological inflections, even

⁹This concept of ‘words’ can be better understood by a comparison with the word used by the south Slavic singers, the guslars, which is ‘reči’. They define ‘reč’ as a pattern at least of the length of a metrical unit and which should constitute a “speech act” (Foley, 1999, p. 68) of any length starting from a single hexameter to an entire poem.

¹⁰Foley thinks that, in traditional poetry, a small single part stands for a more complex background. He calls this “*pars pro toto*” (Foley, 1999, p. 18).

¹¹Register is not spoken language and can bear archaisms understood because they are all part of the same structure and narrative and are the only ones that could achieve the specific goal of narrating such traditional stories.

¹²We are not saying that every performance will be exactly the same, but using a traditional language and register means that every change will be rooted in the malleability of those traditional expressions and that the signs will be like an enormous instrument for the unlocking of traditional association.

becoming “words formulaically or lexically unrelated to one another” (Foley, 1999, p. 207), without its losing its “traditional implications” (Foley, 1999, p. 207). Foley describes first the signs and their meaning, checking only later whether each of them is part of an “expressive system”. He wishes to understand the diction of the *Iliad* and the *Odyssey* as a shared language between the poet and the listeners, not wanting to impose our references on their diction.

We can look at traditional referentiality in action in the work of Kelly (2007) concerning Book Eight of the *Iliad*. He starts by looking at the relationship between orality and texts and their ‘artistic quality’, believing that an expression is sometimes imposed in a particular context due to the weight of the tradition, yielding to the idea of the inferior quality of an oral composition. Kelly stresses, instead, the great importance of the context because it helps understand the meaning of the expressions that are part of the narration. Homeric poetry consists in a large but finite number of “repeated units”, which “adds a connotative level of meaning to the denotative level represented by the story pattern, typical scene, action or expression itself” (Kelly, 2007, p. 4), placing much value on the context. Ancient audiences could identify the hidden meaning within an element, while a modern audience “[is] not trained to but it is the purpose of this [Kelly’s] book to argue that they should be so trained” (Kelly, 2007, p. 5). Kelly thinks that we need to be able to understand the denotative and connotative levels within which the Homeric poems operate. The latter is the one that “provides the audience with intimations about the element which are not clear from its denotative or lexical meaning alone” (Kelly, 2007, p. 6), without which we would never be able to understand Foley’s reading behind the signs. Kelly limited the foundation for his research to the *Iliad*, reducing the chance of including material that might seem part of the tradition while it is not. Kelly’s aim is to study the “units...at any level” from “individual expressions...to story patterns” (Kelly, 2008, p. 14), trying to capture what would have an effect on the audience during a recital, which is different from what can be grasped from the study of concordances with the *TLG*. Kelly uses specific references for indicating the parameters for the various units in the text: a unit name, number and description. These references refer to the chapters called ‘Lexicon’ and the ‘Textual Discussion’. The ‘Lexicon’ “sets out in detail all the traditional units in the order encountered in the course of Θ ’s narrative, together with the examples” (Kelly, 2007, p. 15), while the ‘Textual Discussion’ “seeks to apply what has been learned in the rest of the book to the most fundamental scholarly questions surrounding the Homeric text...” (Kelly, 2007, p. 17). The consequences Kelly draws about Book Eight are not wholly

appreciated. Huxley (2008) and de Jong (2009) suggest a tendency to generalize and over-interpret, which leads to the addition of usages and interpretations that might never have occurred. De Jong stresses that Kelly's interpretations of Homeric lines in his 'Lexicon' are not always correct. Nevertheless, despite the difficulty of understanding it, the work provides an example of where studies on traditional referentiality are headed and also on how to approach the echoes of Homeric poetry and its communicative system. Kelly guides the reader towards acquiring an insight into the units and 'words' of the poems, trying to approach as closely as possible the way in which an ancient audience reacted during a performance.

Foley expresses one view on how the relationship between performers and listeners/readers of the Homeric poems can be defined. In his book on Homeric performance, González (2013) introduces the concept of 'notional fixity', which means insisting on what the story tells, its never changing character. Notional fixity and artistic freedom are connected via a depiction of fixation as an aspect that happens gradually, going through various phases of different compositions in performance. González stresses that the invocation to the muses is an important voucher for reliability. Due to virtuosity and innovation, the story the singer recites every day will not literally be the same. The muses, his source of inspiration, offer an understanding of how epic poetry can be fixed, yet also changing, with innovations within a specific, traditional path. If singers are inspired by the muses, then the epic tradition narrated "could not possibly change from one divine telling to another" (González, 2013, p. 201). The Homeric song is a divine and sacral speech act, whose authority is overseen by the god who inspires the singer. Fixity derives from the performance, the place where the tale is told. The focus is on the story and the actions more than on the words, which, in González's opinion, are given a divine performative sanction by the muses. Singers are relating words that derive their accuracy from "the song's full correspondence to an original-only, here the original has a divine source, a matter of the greatest moments, which implies in turn, [...] the notional fixity of the story" (González, 2013, p. 208). The audience expects an authentic delivery, an action that cannot be otherwise because the gods are the source of the narration and ensure its accuracy.

The performance, according to González (2013), is where the fixation of the Homeric text occurred, where tradition met change and innovation. The rhapsode related Homeric poetry interacting with the audience, together with competing with other rhapsodes. Competition increased inventiveness and at the same time helped fix the sequence of events. González connects inspiration and skills, the divine source of

the song and the ability of “stitching and weaving as metaphors for the performance of epic” (González, 2013, p. 361). This capability occurs at various levels, from the single line to an entire performance. The recitals the author mentions took place mostly in Athens during the fourth century B.C., when oral performers were not only rhapsodes but also actors and orators who referred to written texts for help in their preparation. The traditional diction of the Homeric poems is the product of the cooperation during performance and the faithful delivery ensured by the muses. This collaboration was both diachronic and synchronic and resulted in a dialogue between the rhapsodes and in the building of a sequence of events in the narration. The author believes that by reciting in succession the singers produced the thematic and artistic unity found in the poems; it is as if they were recomposing a unity from “scattered members” (González, 2013, p. 379). Composition in performance is connected both to a group performance, and to the recital of a single rhapsode, which diachronically, in González’s opinion, comes before relay performance. Audiences were conscious of the “traditional character of Homeric poetry” (González, 2013, p. 417) and, as soon as the tradition became distinguishable, rhapsodes started stitching together “identifiable episodes and plot lines” (González, 2013, p.417). These were not the only recognizable features because listeners were also aware of the individual construction of the single verses and how they could be stitched together. In the end, it could be affirmed that composition means a connection of prosodic, syntactic and semantic elements, all of which are understood and felt by the audience. As González stresses, “The rhapsode performed his song by stitching smaller units one onto another...artfully expanding and abridging his material according to the need of the moment” (González, 2013, p. 419).

We stressed in the previous paragraphs how oral composition in performance shaped the diction of the Homeric poems as we now know them. Both the notions of traditional referentiality and notional fixity refer to the relationship between the singers and the audience. It will be shown now what this analysis of orality could add to the understanding of the digital medium and of the relationship between editors and users/readers of digital editions. This will be effected with the help of the theories on orality and literacy expressed by Ong (1982).

Ong describes our age as an age of ‘secondary orality’, where orality cannot be separated from writing and printing. Furthermore, he stresses that it is difficult to depict a primary phenomenon from the point of view of a secondary one. Ong does not have a low opinion of literacy versus orality but merely underlines that there are achievements and other performances that are specific to a world without writing. In Ong’s opinion,

“sustained thought in an oral culture is tied to communication” (1982, p. 34) and unites human beings in groups, making them a unique audience, which, in a constant exchange, might shape the traditional content of a recital. This is because oral composition lives in connection to the social place where it is performed and pertains to what the audience tolerates (1982, p. 66). Ong’s ideas stem from depicting of sound as something that “incorporates” (1982, p. 71), that stems from within a human being and moves towards somebody else, incorporating that person in the speaking situation. Using Plato’s argument against writing in the *Phaedrus*, Ong stresses that “speech and thought exist essentially in a context of give-and-take between real persons. Writing is passive, out of it, in an unreal, unnatural world. So are computers.” (1982, p. 78-79) If the Homeric poems originate in this world of speech, this is not how modern readers learn about them. They read a written text, missing the “phonetic qualities... and the extratextual content” (1982, p. 100). Ong thinks that while the manuscript culture remained mostly oral-aureal, the letterpress changed everything and the text became consumer oriented. Ong believes that there were no differences between published books then and that “two copies of a given work did not merely say the same thing, they were duplicates of one another as objects” (1982, p. 124). We should remember here the counter-argument, which disproves Ong, stressed by Tanselle (for more about his view, see Chapter 3) in his book *A Rationale of Textual Criticism* (1989) concerning the difference between the ‘texts of works’ and the ‘texts of documents’. In his opinion it is impossible to achieve a reconstruction of the original text, “the abstract, comprehensive idea of a literary composition...the intended text in the mind of the author at the time of writing”. The scholar can aim to reconstruct the “text of a work the author considered to represent the work most satisfactorily at a given time” (Tanselle, 1989, p. 83). On the contrary, documents are “each physical embodiment or instance of this literary composition”. He concludes that “it is always difficult to replicate the characteristics of a document, its three-dimensional aspect, without adding another document to the tradition. Furthermore, copies of documents are only convenient artefacts and are, therefore, all different” (Chapter 3.2.3).

One of Ong’s final remarks is that print furthered the sense of personal privacy that pervades modern society. There has been a shift from community and shared knowledge to a “sense of private ownership of words” (1982, p. 128). Apart from privacy, there is also the idea that a text is definitive and cannot be changed, that it has a fixed tone and point of view. Ong stresses that our world, fashioned by electronic devices, has moulded a sort of “secondary orality...with participatory mystique, its

fostering of a communal sense, its concentration on the present moment, and even its use of formulas...a more deliberate and self-conscious orality, based permanently on the use of writing and print” (1982, p. 133). What is very important here is the creation of a new “strong group sense”, a new movement from “inward” to “outward” (1982, p. 133). Communication always involves an interaction either between two people or between a writer and an imagined audience. The movement inward fostered by writing introduced both “a sense of self and...more conscious interactions between persons” (1982, p. 175). In the postscript in the thirty-year anniversary edition of Ong’s work, Hartley (2012) stresses that Ong’s theory did not remain isolated. The most important author cited there is Pettitt (2007) with his concept of “Gutenberg parenthesis” (2007, p. 1-3). This is called the period of time from Gutenberg’s invention of the printing press to our time of ‘secondary orality’. Pettitt believes that we might be part of a remediation and restoration process of previous methods of communication, more connected to immediacy and oral interaction. This development takes the authors/editors and the users/readers from an age of control and truth delivered only by print to an age of “unprecedented convergence among oral, written and print-literate modes, where oral forms like phatic communication are migrating to the web...” (Hartley, 2012, p. 208). This notion can be transferred into the sphere of digital editing if, for example, we consider a platform where it would be possible to add comments, as Professor Crane expounds in his paper on “Getting to open data for Classical Greek and Latin: breaking old habits and undoing the damage” (2015), and Professors Berti and Almas state in “Perseids Collaborative Platform for Annotating Text Re-Uses of Fragmentary Authors” (2013). Professor Crane talks about the need for open data in modern scholarship. He describes how to provide reconstructed texts and textual notes as open data using a Creative Common License. Because textual notes are considered a separate copyrightable work, he is looking at how we could maintain any important annotation that might be in a critical edition that is still under copyright. His idea is to create a “series of machine-actionable commentaries that could automatically flag all passages in the CC-BY-SA editions where copyrighted editions made significant decisions” (2015), an amount of data within a framework that could be expanded in a self-regulating way. A similar example could be the collaborative platform on text-reuse *Perseids*. Apart from an interface that could contain together the source text, witnesses and parallel text, there is also space to “build and implement a shared environment of multi-level annotations of text re-uses...*Translations alignments, Commentaries,*

Alignments of witnesses and parallel texts, Syntactic annotations of text re-uses...Links” (2013).

Both the above-mentioned papers describe the involvement of users, the creation of a community that, in order to achieve a specific goal, exchanges ideas and is not afraid of the opinion of every member. Furthermore, it is a collaboration occurring between users and editors, both sharing some background knowledge, but also both increasing their knowledge through the exchange that will happen while building the project. The Homeric poems are very important because they are the first example of shared knowledge and, if we compare Foley’s performance arena to modern digital platforms of communication, we can see the proximity with the digital medium and how their sharing aspect might help to comprehend collaboration in the digital medium.

What can be obtained in this way could be seen as a new aspect of ‘secondary orality’, with comparisons and contrasts of ideas not in an oral exchange, but in a written one, with the mediation of writing and of the digital medium. The Homeric poems and their tradition return as the focal point at which this study started, from an understanding of oral communication during oral composition in performance to an inkling of the possibilities offered by the digital medium for reproducing these interactions.

1.5 Orality and restructuring the communication model using the digital medium.

The description of notional fixity and traditional referentiality together with an overview of Ong’s theory concerning the relationship between orality and literacy are fundamental to understanding the change in the communication method from orality to writing and transferring this to the digital medium. The model of communication that shaped the so-called ‘Gutenberg parenthesis’ involves the readers dealing with written texts, which is an evolution of the depiction of the transmission of a message described by Jakobson¹³. Following Jakobson (1960, p. 353), the addresser sends a message to the addressee. For this message to be received and understood by the addressee it must have a comprehensible context, whether verbalised or not, i.e. a code understood by both the encoder and the decoder and a contact, a “physical channel and psychological connection between the addresser and the addressee, enabling both of them to enter and stay in communication” (1960, p.353).

¹³For an enriched version of this schema, see Kerbrat-Orecchioni, C., 1980.



Figure 1 Image taken from Jakobson, 1960

A better grasp of this transmission concerning a written text can be obtained by following Mordenti (2001, p. 53-83). His discussion begins by stressing that we have on one side the author and on the other the reader, communicating by using a shared code.

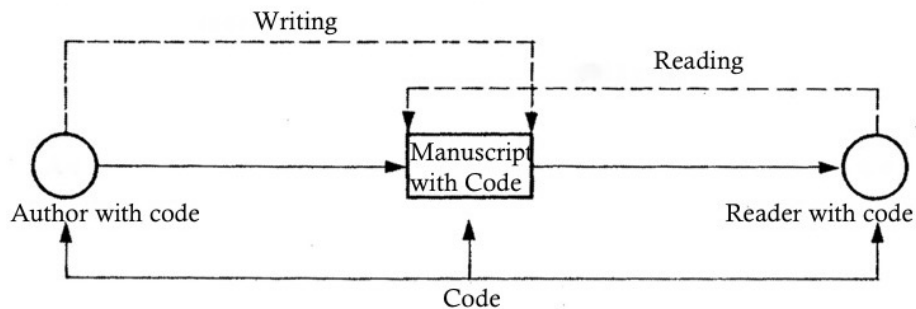


Figure 2 Mordenti, 2001, p. 62 (my translation)

The author and the reader have to share the code because if the meaning of the message written in the manuscript (MSc) is misunderstood then the communication is interrupted.

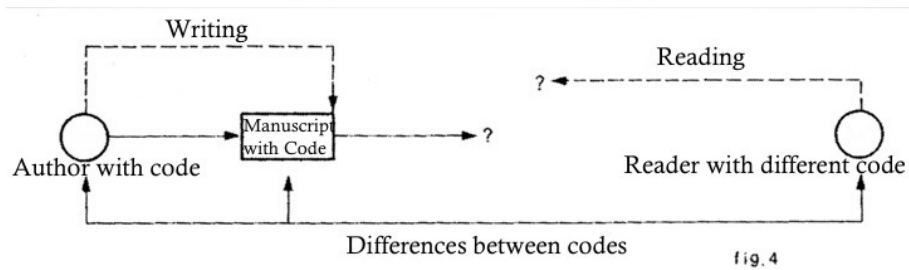


Figure 3 Mordenti, 2001, p. 64 (my translation)

This is the case of a critical edition, where a mediator is needed between the author and the reader, the editor who works with the direct and indirect tradition and produces an edition, whether critical or not. In the communication method described by Mordenti, the manuscript, which the reader cannot understand, is transformed into a printed text that uses the same code that the reader understands, as can be seen in the following picture.

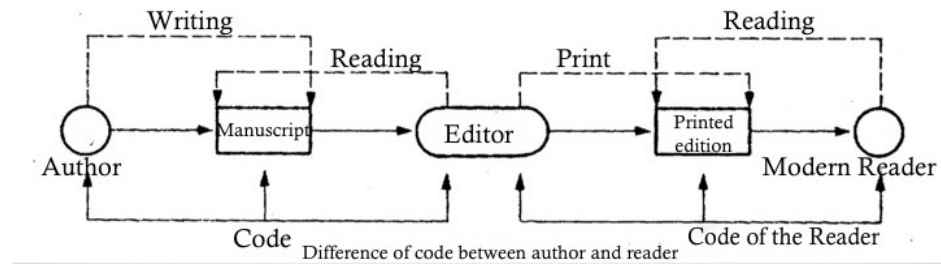


Figure 4 Mordenti, 2001, p.65 (my translation)

The model of communication achieved describes the reader as someone who plays no part in the transformation process of the written text/tradition into a printed text. We should stress here that the reader shares the code with the editor in a process that goes only in one direction. How do the Homeric poems fit into this description? It might well be a portrayal of a printed critical edition of the poems but it does not take into account their origin as oral compositions in performance. We strongly believe that the digital medium could recreate, albeit with hindrances, a communication environment that could become as close as possible to that of the ancient tradition of the poems. Since the Homeric poems may be the first example of shared knowledge, and Foley's concept of performance arena is now the digital platform where the communication takes place one can see how the digital medium can take them back to their roots and how a study of their origin might help shape the collaborative aspect of the digital medium.

The digital projects and structures described in the following chapters will elucidate on how the aforementioned communication method described by Mordenti could change in the digital medium:

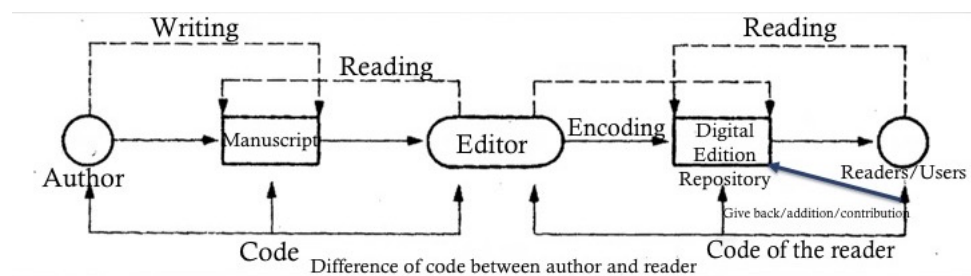


Figure 5 My modification of Mordenti, 2001, p. 65

The unidirectional relationship between the editor and the reader changes into a bidirectional relationship between the editor and the users/readers, with a never-ending movement back and forth from the digital edition/repository to the editor and the users. This interchange will work only if they both know the same code, with a shared knowledge both of the text they are editing and of their social environment. Regarding the Homeric poems, we need to add a previous stage to the model, where an unlimited

number of rhapsodes did not write the poems down, but recited them to an audience. The tradition of the poems is what remains from those ancient recitals, and the editor and the users/readers are the new audience. The editor, being the person who mediates the content of the tradition, could be the new rhapsode of modern times, and the users/readers are the final audience. They collaborate and understand the tradition, so the relationship they have with the editor is not unidirectional, but it is almost the same as what modern studies on orality describe could well have happened in the past.

This last paragraph has depicted an idea of the evolution of the model of communication seen starting from orality, taking especially into account the relationship between authors, editors and users/readers. We have seen here that orality pervades the modern understanding of the Homeric poems, which entails far more than just thinking about a composition in performance. This is why, while imagining a digital project on the Homeric poems, one must always remember that the editor is dealing with something far more than a simple written text: an ensemble of public reading, reciting and shared knowledge, which made the Homeric poems fundamental to the culture of the ancient Greeks for several centuries before they were surpassed by the Bible. In the same way, a digital edition is more than just a transfer of notions from one medium to another, and the Homeric poems become once more the starting point of this new journey into the world of communication. Even if we take a positive attitude to the digital medium and to the changes it brings, such transformations might be seen not as steps forward but as movements backwards from the stability of the printed text to a text more subject to changes, from composition back to performance. The ‘Gutenberg parenthesis’ might seem more distant to the digital medium than the previous stage of oral composition in performance. As Pettitt stresses, we are “reversing the changes inherent in the shift from scribal copying to print, and before that from memorial (preservation of verbal material in the memory, and the retrieval of material, in performance, from the memory) tradition to scribal, and before that from improvisational to memorial” (Pettitt, 2007, p.7). We are experiencing a new sense of openness, but at the cost of its “effectively taking us back into the Middle Ages” ...and of our “surfing to serfdom” (Pettitt, 2007, p. 7). Scholars have to act as guides in the shaping of this movement ‘backwards’ so that the characteristics of oral composition in performance will not outweigh the positive aspects of printed editions, which are the basis of a critical edition, and in merging the two forms, so that the post-Gutenberg world will not be seen merely as a step backwards, but also as a positive move forwards.

1.6 The Unitext and Multitext Theories.

Hitherto, there have been two main ways of dealing with the tradition of the *Iliad* and the *Odyssey* and of creating their critical edition. One is expressed in the works of Martin L. West and stems from the archetypical model of Lachmann, and the other derives from orality and the concept of multiform and Multitext expressed in the works of Gregory Nagy.

West's (2001) idea of a full recovery of an original text follows the unitext explanatory model stemming from the Lachmannian theory. The goal of a scholar who follows the Lachmannian idea of collating the manuscripts and carrying out a complete *recensio* is to reconstruct the archetype, the non-preserved copy of a manuscript from which all the other manuscripts derive. West clearly explains that the text of the *Iliad* he tried to restore is "the best approximation that may be possible to the *Iliad* as its original author left it", "the pristine text" (West, 2001, pp. 158, 160). West believes that every epic is a text written by a poet who delivered his poetry orally, and that the transmission originates from the papyrus rolls left by the poet. From that moment on, major and minor interpolations began, such as the insertion of an entire episode like the Doloneia in the *Iliad*, and the addition of single lines. In connection with what has already been said about orality, West recognises the existence of oral performances but he attributes greater importance to the written transmission as something that started at the very beginning of the existence of the poems after the death of the poet/author. For this reason, it is important to describe his view concerning the tradition of the Homeric poems.

According to West (2001), the whole *Iliad* and *Odyssey* were heard for the first time in public under Hipparchus in Athens, at the Panathenaea, in around 522 B.C., where they were attributed to Homer and divided into twenty-four books. West explains that it was not until the Alexandrian period that Homeric criticism, as it is known today, started. Any change made to the text of the poems until that time is to be ascribed to the will of the *rhapsodes*, who thought that the text was theirs to change. The first editor of Homer in a modern fashion was Zenodotus of Ephesus, whose readings can be found in several scholia, which themselves either derive partly from older readings found in his sources in the Library of Alexandria or, again according to West, from interferences from a *rhapsode's* copy. After Zenodotus, West analyses the work of Dydimus Chalcenterus and his citations of ancient sources, in particular Aristarchus, who created the last of the editions that bear the name of its editor in our tradition. Dydimus Chalcenterus worked on sources, trying to reconstruct Aristarchus' text, and West

thinks that it was Didymus Chalcenterus who collated the manuscripts and searched for variants. In West's opinion, some Aristarchean variants can be considered part of the tradition, while others are only conjectures, so Didymus Chalcenterus is not the source for Aristarchus, but the scholar who made the collation from manuscripts for the first time, developing many editorial criteria.

On the contrary, the theory of Multitext moves away from the traditional concept of finding one original text. Nagy (2003, 2004, 2000)¹⁴ states the need to pay attention to multiformity, "multitext", composition in performance, orality and formularity. For him they cover an important aspect in the history of the Homeric tradition. To Nagy's mind, it is not possible to reconstruct a single version. The multitext idea is his way of expressing how the *Iliad* and the *Odyssey* evolved. In this way, every variant in the two poems may be a different version of the Homeric tradition created in the course of history.

Nagy's Multitext studies the tradition from a diachronic perspective, trying to recreate a kind of history of oral performances. Nagy focuses on Aristarchus of Samothrace, Aristophanes of Byzantium and Zenodotus of Ephesus of the Alexandrian school. The methods these authors employed can be divided into *diorthosis*, *ekdosis* and *hypomnema*. Starting from the *diorthosis*, "corrective editing", of Aristophanes of Byzantium, Nagy (2004, pp. 85ff.) describes the *hypomnemata*, commentaries, of Aristarchus of Samothrace, upon which were based his *ekdosis*, editions that emerged as the new standard text after that of Aristophanes. Regarding the Alexandrian school, he concludes that for him Didymus Chalcenterus was only the successor of Aristarchus, whose authority derives from the latter's.

Nagy wonders how far back it is possible to go in reconstructing the Homeric text. Two of the earliest modern editors of the *Iliad*, Friedrich August Wolf and Pierre Alexis Pierron, believed it is only possible to reach respectively the third century A.D. and the middle of the second century B.C., the ages of Porphyry's *Homeric Questions* and of Aristarchus of Samothrace. Pierron (1869) was following Jean Baptiste Gaspard d'Ansse de Villoison, who based his 1788 edition of the *Iliad* on the Venetus A (Marcianus 454), trying to recover a text trailing Aristarchus, who "rescued the text from the corruption of rhapsodic transmission" (Nagy, 2000). On the contrary, Wolf (1795) revealed a pessimistic diffidence towards the Alexandrian scholars, considering their readings mere conjectures. A similar view, Nagy explains, is shared by the editions

¹⁴ *Gnomon* 75, 2003 pp. 481-501; *Homer text and Language*, 2004, pp. 75-109; *BMCR*, 2000.09.12

of the epics by van Thiel, who favours in many places the readings of the medieval manuscripts over the scholars of the Bibliotheca Alexandrina.

The neo-Aristarchean Karl Lehrs (1st/2nd/3rd eds. 1833/1865/1882) and Arthur Ludwich (*Iliad*, Teubner, 1902) judged correspondingly the evidence provided by Homeric poetry and that in the manuscripts, attributing great importance to Aristarchus because he possessed evidence no longer available to modern scholars. This debate can also include the anti-Alexandrian positions symbolized by Marchinus van der Valk (1963) and Hartmut Erbse (1959), which can be considered partly the viewpoint underlying van Thiel's *Iliad* and *Odyssey* (1991-1996).

The analysis of the transmission of the Homeric texts could cover further aspects of their tradition, such as the *numerus versuum*, the division between vertical (fewer or more lines) and horizontal (different wordings in a single line) variants, and the concept of the Homeric vulgate (a standard version of Homer). To put things in a nutshell, the most important point that concerns us here is that there are two ways of editing the Homeric text, both connected to the theory of orality and to the analysis of the Alexandrian school.

1.7 Helmut van Thiel's Edition of the *Odyssey*.

It is obviously impossible to decide irrefutably which edition of the *Odyssey* one should choose, but effecting a digital edition is not simply collecting different kinds of material: as we have already said, it is intended as an editor collecting material following precise critical editorial principles.

Therefore, van Thiel's edition, published in 1991, was used as the basic text for our digital critical edition. Bearing in mind the aforesaid discussion, it was considered the one edition that expressed a well-defined aspect of the tradition, that of the medieval manuscripts. A PDF version of this edition can be downloaded simply through his web page, but this text is not the complete text of the printed edition, as the editor explained on his web page¹⁵:

“Vollstaendiger Homertext nach meinen kritischen Ausgaben der Ilias und Odyssee (s. u.), gedacht als digitaler Suchtext, freigegeben fuer nicht-kommerzielle Zwecke. Der Text kann in Acrobat Reader kopiert und in Textprogrammen bearbeitet werden. Mit durchgehenden

¹⁵ <http://ifa.phil-fak.uni-koeln.de/index.php?id=12991>

Versangaben (grosse Buchstaben Ilias, kleine Odyssee), ohne Akzentzeichen und Interpunktion."¹⁶

He provided a text without accents or punctuation, which can be used in textual programs but only for non-commercial purposes. This creates a problem for our digital edition because, even if this proof of concept is non-commercial, it is a digital critical edition and therefore should also offer the user/reader the critical apparatus, which entails requesting copyright permission.

The text is accompanied by an introduction in German and English, with a bibliography and a list of the Papyri and the manuscripts employed by the author. J. R. Tebben (1994) used the work for his *Concordantia Homerica, Pars I and II: Odyssea. A Computer Concordance to the Van Thiel Edition of Homer's Odyssey*. Van Thiel's edition is based on a new collation of a number of manuscripts, first conducted by Nikolaos Tachinoslis in his book of 1984, *Handschriften und Ausgaben der Odyssee*, and compared to T.W. Allen's report in the Oxford Classical Text edition of 1917. Reviewing the van Thiel edition, M. J. Apthorp (1993) said that, it provides a better understanding of the early mediaeval tradition, subsequently arguing that it would help scholars acquire a better knowledge of "What Homer actually sang" (Apthorp, 1993, p. 228). We should stress that this expression might seem somewhat exaggerated, given the fact that we do not even know who Homer was and whether he even existed; perhaps Apthorp was following West's idea that at the beginning there was a poet, whatever he was called, and he is giving this poet the name Homer.

We should explain here what his critical edition consists in, according to the author's own introduction. It seems that the salient point of the edition is its criticism of some aspects of Allen's and of the notion that a critical text of Homer should comprehend the entire transmission of variants. He tries to establish the text transmitted by a few select manuscripts, mainly the oldest ones, strongly believing that every variant they carry should be considered to be as ancient as those in the papyri and in the indirect transmission. The other readings are provided, when relevant, in the apparatus, thus freeing the editor from the obligation of recording every reading. As van Thiel points out, the true problem is that, in an edition like this, there is no choice but to accept most of the editor's decisions, particularly because the editor made many of them unassisted, and the apparatus does not account for all of them.

¹⁶ "The complete Homer text from my critical editions of the *Iliad* and the *Odyssey*, established as text for digital research, is given freely for non-commercial purposes. The texts can be copied to Acrobat Reader and can be worked on in textual programs. With a continuous flow of verses (capital letters for the *Iliad*, small for the *Odyssey*)". (My translation.)

It is significant that the author should acknowledge that with the technology available he could have created an edition with all the necessary sources and conjectures. At the same time, he asks one important, fundamental question: Was it worth the effort and the expense? Unfortunately, the discussion is not taken any further, and there is no other point in the introduction where this notion is detailed after this point. From what we can understand, van Thiel is referring to both timing and quantity issues because he writes of an apparatus that could be “supplemented at regular intervals” (1991, p. xxii). In his book *Textual Criticism and Editorial Techniques* (1973), Martin L. West opens the chapter on the preparation of an edition with the question whether one person’s edition is absolutely necessary. Scholars in the field of digital humanities always ask themselves about the same issue when they start a project, and it is primary even for a proof of concept such as this “Comprehensive Odyssey”.

Van Thiel describes three major points concerning his edition. First, he says that he considered the direct tradition of the medieval manuscripts to be the best, when it is uniform. Second, his apparatus will contain documentation from the chosen manuscripts, but no orthographic or other obvious mistakes. There would also be special readings from the papyri where they agree with a manuscript minority, a selection of variants of the indirect tradition with the indication of the earliest witness, reference to parallels and a manuscript collated for the first time. Third, he carried out the numeration of the lines using a word processor, thus opening the edition to future analysis when improved technology became available. This leads to Tebben’s *Concordantia Homerica*.

Moving on to the consequences of his choices, he says that, being strong, the textual transmission of medieval manuscripts maintains all the influences not belonging to the main tradition. His idea is that manuscripts should be followed when agreeing in their readings, even if the previous editions preferred the principle of linguistic uniformity. For van Thiel, the idea that the poems were written by the same author, and that the poet would use the same form in the same metrical conditions, are not sufficient to choose one variant. M. L. West says that a variant must correspond to the author’s intention in sense of meaning, language, style and technical aspects. It must be clear how the original reading became corrupted. Van Thiel (1991) argues: “A critical edition should not standardize the readings *in usum delphini seu thesauri*” (p. xxvii) in trying to produce the first written text. For him even the readings from ancient scholars must be regarded as proposals not evidence. On the contrary, van Thiel follows West’s idea when dealing with the plus-lines of the *Odyssey*, which are attested, but not in the manuscripts. He inserts into the text the well attested, not anything suspect. It appears

that van Thiel relies fully on these manuscripts when there are no risks of misunderstanding, not noting in the apparatus the orthographic fluctuations either in the manuscripts or in the papyri used in the edition.

Critics of this edition focused on van Thiel's choice of manuscripts, verses and variants, the general ideas at its root, the concept of text in computer form, his point of view on the Alexandrian tradition and the general structure of its introduction. One of the most widely debated points is his choice of verses and variants. In his highly critical review, Apthorp (1993) disapproves of the decisions concerning the numerous *versuum*: "He (van Thiel) is unpredictable and inconsistent" (1993, p. 229). He added a number of lines, badly attested in the manuscripts as a result of the Alexandrian scholars' choices. He remains close to most of the manuscripts, but sometimes chooses a minority, and "rarely does he venture to print an emendation" (Apthorp, 1993, p. 229). Reviewing Tebben's *Concordantia Homerica* (1998), J.B. Hainsworth says that the text of van Thiel is available in computer form; it presents the medieval tradition, free from editorial improvement, adding some lines not generally present, but marking them to avoid confusion in the numbering. Janko thinks that van Thiel underestimates the lines omitted for orthographical and mechanical reasons, such as concordance interpolation or "interpolated (a) speech-introductions, (b) speech-conclusions, (c) whole-line vocatives, (d) to supply a subject, object or verb, (e) for greater specificity or (f) for consistency" (Janko, 1994, p. 293). Van Thiel's idea not to bracket many of these lines does not contribute to progress, to Janko's mind. The manuscripts were carefully selected, preserving many un-metrical formulae and phrases, and restoring many augments. This confirms, as Janko said, Parry's idea that repetitions are less similar than scholars thought. Janko argues that van Thiel did not fully appreciate the worth of earlier manuscripts compared to later ones and went much further in his denial of archaisation. Janko affirms that when there is manuscript evidence one should follow the *lectio difficilior*. Concerning other points, his opinion is mainly positive.

Evaluating Tebben's *Concordantia Homerica* (1995), Apthorp repeats his views on van Thiel, saying that he "relegates many plus-verses to his apparatus and omits all mention of many others. However, van Thiel's text does include many post-Aristarchean interpolations, most of them not even bracketed..." (1995, p. 221). M.L. West (1998) criticised van Thiel's edition of the *Iliad*, which is the companion to that of the *Odyssey*. To his mind, van Thiel cites ten manuscripts and rightly says that they are sufficient to represent the medieval tradition. The problem with the edition is that only the papyri that supported known variants were cited, even if they were consulted in full.

Van Thiel's choice of the verses and manuscripts is connected with his reasoning on the Alexandrian tradition. This partially reflects his idea that the medieval tradition has a pre-Aristarchean version, but the papyri and the indirect tradition are important only in a very selective way. Associated with this notion of van Thiel's is the second criticism that West makes, that van Thiel does not like the idea of West's application of modern linguistics to the spelling and orthography of the *Iliad*, using his "prejudice" (West, 1998, p. 1) against more ancient sources, preferring the manuscripts which for him "better illustrate the distribution of weight within the transmission" (West, 1998, p. 2). After having read van Thiel's introduction to the *Odyssey* and Apthorp's criticism, it is clear the main problem West found in this edition was how van Thiel refers to ancient scholars, which for West is "wilful" (1998, p. 2). Zenodotus' readings are conjectures or errors, meaning that the variants from the "Alexandrian scholars were in fact merely parallels from other passages which they had noted in their margins...a perverse thesis" (1998, p. 2).

As Janko wrote (2000) in his review of West's *Iliad*, West's choices are less obtrusive than those of van Thiel because West "aims both to remove weakly attested lines and to report the evidence from ancient scholarship. That he has not fully succeeded in either respect must not diminish our gratitude for the immense labor, knowledge, and text-critical acumen..." (Janko, 2000, p. 1). Nevertheless, Janko (1994) states that the new text of van Thiel should become indispensable because, by using the best medieval manuscripts he gives us a very conservative, reliable text after years of orthographic restoration and reliance on the Alexandrians. Earlier the problem was the continued search for the best text, but now there is the innovative idea that we can establish the text from a dozen manuscripts and from the papyri. Even if Janko's position is on the whole positive, he points out some problems. First, there is a "failure to bracket lines inadequately attested by the paradoxes" (Janko, 1994, p. 289). The reason is, contrary to what other reviewers said, that van Thiel did not fully appreciate the earlier medieval manuscripts. Secondly, Janko disagrees with his choice not to report the complete Alexandrian readings.

This opinion derives from the assertion that direct tradition must receive complete support when unanimous. The manuscripts are attentively selected and carefully reported, while the papyri and the indirect transmission are critically chosen, not leaving any room for recording unimportant variants. In this way, the degree of importance within the tradition can be fully understood. Notes in the apparatus explain passages and readings offering parallels, a valid procedure, but for Janko of dubious

outcome, given the uncertain value attributed to some of them. Another positive feature is the recognition that merely identifying the same metrical forms in the same positions, as early editions did, is not sufficient. The first requirement is to establish the exact readings of the manuscripts and only check for standardisation after this. Janko believes that perhaps the problems scholars find in the text may derive from how it came down to us as the result of the dictation of a single oral poet. An edition such as van Thiel's, created following his "separatist and, indeed, Analyst views" (Janko, 1994, p. 290), could also become something in accordance with the suggestion of an oral transmission. Van Thiel's edition started a new era, but Janko says that creation has just begun. The treatment of the Alexandrian tradition is the most important idea in van Thiel's new edition. He suggests that the ancient scholars were only talking about conjectures and their discussion should be confined to an apparatus. He, therefore, sometimes decides not to list all the ancient readings, some of which would have been, according to Janko's opinion, better put in the apparatus. Van Thiel says that they are merely a way of analysing literary aspects of the work.

Van Thiel's edition does not play a major role in *Homer's Text and Language* written by Nagy (2005). Nagy writes about the importance of the Homeric Scholia in creating an edition. As far as the latter are concerned, the edition of Monroe-Allen, published in Oxford in 1920, was considered to be the most important. Van Thiel's edition challenges it for being defective in method; it even changes the sigla of the manuscripts. Haslam (1997), when describing the transmission of the text, underlines his own view of modern editions and their relationship with the tradition of the poems. In his opinion, van Thiel's edition is founded on "the exclusive authority of the vulgate" (1997, p. 100), that is the medieval tradition, distinct from the scholia, the papyri and the indirect tradition. Van Thiel's method of considering the readings of the Alexandrian scholars' conjectures is often seen as conservative, but Haslam (1997, p. 100) says: "... not that there is actually anything conservative about preferring medieval manuscripts to ancient ones". His edition can be regarded as a shift towards a "Wolfian vulgate" (Nagy, 2005, Chapter 1, par. 32), an edition with a more negative judgement of the Alexandrian scholars. Wolf's edition was a prominent work produced between 1804 and 1807. Erbse, the editor of the major scholia of the *Iliad*, expressed the same thought. It seems that in this new edition by van Thiel Wolf's ideas reappear, following a line that tends to disregard the Alexandrian tradition, which stems from the works of Wolf. In Nagy's opinion, van Thiel's edition follows Wolf's pessimistic idea of considering the Alexandrian editions to consist almost entirely of conjectures when they differed

from the medieval manuscripts. Van Thiel represents “an extreme case of that pessimism” (Nagy, 2005, Chapter 3, par. 12); another case is West’s *Iliad*, but he was very confident that he had found the closest text to the original *Iliad*.

Critics include van Thiel’s edition in this tradition, but he is mainly concerned with contesting Allen’s edition of 1917/1920 and his method. They criticise van Thiel merely because he takes Wolf’s opinion to the extreme, but, if this edition is to be judged as one that describes only a specific part of the tradition, rather than trying to reach a unified text through uniting and weighing up the whole transmission, it will gain the importance that it deserves. Haslam (1997, p. 100) argues that: “As reviewers have not failed to point out, it prints even more interpolations than the OCT, but its apparatus is unusually reliable: an exemplary ‘conservative’ edition, destined to be highly influential”.

The aforementioned opinions are mostly criticisms and analyses of the ideas at the basis of his edition. There is one other aspect discussed, i.e. its introduction. The author adds an introduction in German followed by an English translation. Apthorp’s review says that this translation is “inaccurate, ungrammatical, unidiomatic, or marred by strange omissions” (Apthorp, 1993, p. 229). According to Janko, the translation is regarded as competent but it lacks the list of the papyri, the manuscripts and the signs and abbreviations. Thanks to these omissions, the translation flows more easily, but leads Janko to question whether we should continue writing the introductions in Latin rather than in a modern language. A further problem is that the edition requires Ludwich’s edition to obtain information about the Manuscripts and the Pack for the papyri.

Even if van Thiel’s ideas are sometimes declared “strange” (Apthorp, 1993, p. 229) and confused, his edition is considered an attractively produced book (Apthorp, 1993). The notion of creating a project that would transfer all the material concerning the tradition of the Homeric poems into the digital medium, aiming to preserve the concept of a critical edition, was, for the purpose of this proof of concept, restricted to the use of printed editions. In this section, we have explained why van Thiel’s edition was chosen for the *Odyssey* text: not because it is the latest one, but because its aim to accord importance to the medieval manuscripts tries to achieve a result in a field where it is possible to achieve one. It omits the polemics about the prominence of the Alexandrian tradition, whether such readings were more important than those of the pre-Aristarchean vulgate, and whether the editions that came before and after Aristarchus are superior in every aspect. This is not to say that we should not discuss the

Alexandrian tradition and Aristarchus, but it was decided to choose for this project, where the focus is on the secondary sources and the scholia, van Thiel's edition simply because of its straightforward aim. From the point of view of the reasoning behind this edition, we have just said that it recommends itself for this digital project. There is one aspect, however, that makes it more difficult to deal with while encoding it: the critical apparatus. As Janko (1994) stresses, the text is neatly printed, although the numeration is disconcerting and the signs in the apparatus are sometimes difficult to understand. The critical apparatus is encoded using abbreviations and signs ($\omega \sim \equiv (\sim \sim) \approx \prec \sqcup \downarrow$) whose explanation is only available in the German introduction. Therefore, they are not easy to comprehend, even if they help create a visually short critical apparatus, albeit exhaustive in content. As will be described in the chapter on the encoding process, they have been kept in the digital encoding, but a description has been added under the *Odyssey* text, so that the user/reader may understand their meaning. Once they are understood, reading and comprehending this edition can proceed with no more hindrances than those in the Homeric text itself.

1.8 The Scholia to the *Odyssey* by Filippomaria Pontani.

6	Scholia Graeca in Odysseam α 1	
	ἀριθμῶ [λ 449]· καὶ τὸν γήμαντα, ἄνδρα μὲν, ὃ ἔδοσαν με πατὴρ καὶ πότνια μήτηρ [T 291]· καὶ τὸν φύσει, ἄνδρες κίκλησκον καλλίζωνοί τε γυναικες [H 139]. DE ² M ¹ TVYZ	65
	b3. ἄνδρα: ἐξάλλαξις εἰδους· τὸ εἶδος ἀντὶ τοῦ γένους. τὸν φύσει, οὐ τὸν ἀνδρεῖον, ἐπεὶ δύο ἐπιθετα οὐχ εὐρηται ἀνευ κυρίου ἢ προσηγορικου, ἀλλὰ τὸν φύσει, τουτέστιν ἄτομον ἀνθρώπων καὶ μερικόν. Y	
ex.	c1. ἄνδρα] ὃ ἀντιδιαστέλλεται ἡ γυνή. ἐκ τούτων οὖν τὸν σημα- νομένων οἰκειότατον τὸν ἀνδρεῖον σημαίνει ὁ ποιητής. T	70
	c2. ἄνδρα] ἀνδρεῖον GIM ^b N	
Choer.	d1. ἄνδρα] ἀνὴρ σημαίνει δ· τὸν φύσει, τὸν γήμαντα, τὸν ἀνδρεῖον καὶ τὸν ἀνδρὸς ἡλικίαν ἔχοντα. τὸν φύσει, ὡς τὸ ἄνδρα μοι ἔννεπε, Μοῦσα· τὸν γήμαντα, ὡς τὸ ἄνδρα μὲν, ὃ ἔδοσαν με πατὴρ καὶ πότνια μήτηρ [T 291]· τὸν ἀνδρεῖον, ὡς τὸ ὧ φίλοι, ἀνέρες ἐστέ [E 529]· καὶ τὸν ἀνδρὸς ἡλικίαν ἔχοντα, ὡς τὸ ὅς ποῦ νῦν γε μετ' ἀνδρῶν ἵζει ἀριθμῶ [λ 449]. M ¹ ZY	75
	d2. ἄνδρα] ἀνὴρ σημαίνει δ· τὸν ἀνδρεῖον, ὡς τὸ οὐ γάρ ποῦ τοίους ἴδον ἀνέρας [A 262], καὶ τὸν ἐν ἀριθμῶ ἀνδρῶν ἵζοντα καὶ τὸν φύσει καὶ τὸν γήμαντα. H	
ex.	e. ἄνδρα...πολύτροπον] περὶ τοῦ ἀνδρὸς τοῦ πολυτρόπου. λέγεται δὲ Ἀττικισμός. H	80
	f. ἄνδρα] ἀνὴρ παρὰ τὸ ἀνύειν δύνασθαι γέγονε, γυνὴ δὲ παρὰ τὸ γεννᾶν. DE ² H ἄρσιν δὲ παρὰ τὸ ἀρόσαι. DE ²	
ex.	g. <μοι> ἔννεπε: ἐν μὲν τῇ Τλιάδι ἄειδε [A 1] φησὶν ἡδονὴ γὰρ αὐτά	85
b3) ἀποιον... καὶ μερικόν: Aristotelicam doctrinam redolent c1) schol. T prob. scholio b2 (quod male intellexit) subiungendum (q1) = Choer. epim. Ps. 6, 24-32 (fort. ex Oro; c Choer. EM 107, 40-45 = a 1393 L.-L.); quinque vero significationes praebent Ap. gl. Hom. 74, 220, 10 et Tr. in Hes. op. 1 (p. 39, 19-21 Gaisf.; cf. Eust. in Od. 4, 16) q) cf. schol. Ar. Ach. 204b; Attica enim omisio praepositionis et immutatio casuum, cf. e. g. schol. AT Γ 2b1, AbT Γ 5 etc. j) ἀνάναν: cf. Or. 16, 17; Choer. epim. Ps. 6, 13; EGén a 875 L.-L.; EGud 145, 1 Stef.; γεννᾶν Ptol. diff. verb. γ 62; EGud 326, 26 Stef., alibi potius γέναι vel γοῆν (cf. Plat. Crat. 414a; Or. 39, 19; EM 243, 16; EGud 207, 1 et 326, 14 Stef.); ἀρόσαι nusquam, potius ἄρσαι (cf. EGén a 1235 L.-L.; EGud 207, 1 Stef.) g) ἐν μὲν - φησιν = schol. T A 1e1 (ubi l. 48 lege σέκειν pro καλύπτειν); paulo 63 ἀριθμῶ om. TY γήμαντα ὡς τὸ E²Y ἄνδρα μὲν οὖν δόξαν μοι Y: ἄνδρα μὲν ἔδοσαν μοι M¹* μὲν om. DE² 64-65 καὶ - γυναικες om. M¹*TY φύσει ὡς τὸ E² 68 τουτέστιν ἕνα τινὰ ἄτομον καὶ μερικόν ἀνθρώπων in mg. habet Y 72 totum schol. in mg. extremo vix legitur Y: post hoc scholium Choer. epim. Ps. 6, 33 - 7, 23 paulo brevius (ed. Ludw. p. 6, 7-14) exscriptis Y 73 τὸν φύσει: τὸν ἀνδρεῖον Y 74 γήμαντα: φύσει Y 78 τοιοῦσδ ἀνέρας οἶδον H, ex Hom. corr. Ludw. 83 ἀνὴρ δὲ γέγονε παρὰ τὸ E² 85 hic illic permulta		

Figure 6 A page from Pontani's scholia edition .

This section of the chapter examines the printed edition of the scholia produced by Filippomaria Pontani, which is the last in a long series. One has to remember that Pontani's work came over a hundred years after Ludwich's previous edition.

The most recent editions of the *Odyssey* scholia, as one can read in Pontani's (2005) book about the exegetic tradition of the *Odyssey*, are three¹⁷: Buttmann's of 1821, Dindorf's of 1855 (republished in 1962) and Ludwich's partial edition of 1888-90 (republished in 1966). The last complete edition is that of Dindorf in 1855. Pontani (2005, p. 532) states that, despite its containing omissions recognized during the course of the XXth. century, no project had been created to supplement it. Pontani (2005, p. 532) indicates that Dindorf used the scholia of the Oxoniensis edition of 1827, adding some new findings, but in particular describing his collation of scholia V, H, D, and T. Dindorf was greatly indebted to his predecessors, which is mainly why Pontani thinks that a new analysis is necessary and a new edition should afford a better insight into the tradition of the scholia. However, Pontani realises that in 1888 Ludwich recognized the problems in the Dindorf edition and created a new edition, albeit only of the first book. He increased the *recensio* and provided more specific collations, offering a slightly more precise image of the relationship among manuscripts. However, even his edition is not without faults, as Pontani states, since it does not enquire sufficiently into the relationships among manuscripts, includes a huge apparatus that is difficult for the reader to understand, does not examine the correlation between witnesses properly, does not consider the indirect tradition and makes no distinction among the scholia on a chronological basis (Pontani, 2005 pp. 533-534).

The printed edition of Filippomaria Pontani is an on-going edition of which three volumes have hitherto been published. The edition is based on Pontani's studies on the exegetic tradition of the *Odyssey*, published in his book *Sguardi su Ulisse: La tradizione esegetica greca all'Odissea*, 2005. The first three volumes provided a critical edition of the scholia to the first six books of the *Odyssey*, α β γ δ ε ζ.

After the introduction, written in Latin, the scholia are divided according to the books of the *Odyssey* and the lines in each book. The text is divided into paragraphs, indicated by letters of the alphabet, each letter referring to separate scholia on the same

¹⁷The list of scholia editions comprehends (Pontani, 2005, pp. 520-534): the *princeps* edition of scholia V published by Gian Francesco Asola in 1528, several reprints of these scholia such, as in Paris, 1530, Basel, 1535, Strasburg, 1539, Basel, 1541, 1551, Amsterdam/Leida, 1655-1656, Cambridge, 1711, London, 1740, Oxford, 1780-82; 1792-97; 1811-15, Venice, 1803, Leipzig, 1824, Oxford, 2000. There are also editions of all the scholia apart from scholia V: Alter 1794, Porson 1800, Mai 1819, Buttmann 1821, Baumgartner-Crusius 1822-1824, Oxford 1827, Preller 1839, Cramer 1841, Dindorf 1855, Ludwich 1871, Ludwich 1884, Ludwich 1888-1890, Schrader 1890. These editions include also other material connected to the history of the *Odyssey*.

line, not necessarily on different words, and not on every single word. Numbers may follow the letters in sequence, if Pontani thinks that the scholia had a different origin but came from the same root.

A lemma, the word on which the scholia comments, precedes every scholia, separated by a colon if that word exists in the manuscript; if it does not exist, the lemma is put in square brackets. At the end of each single scholia, there are the sigla of the manuscripts where the entire scholia, a sentence, or even a word in it was found.

Pontani uses square brackets to describe a *lacuna*, curly brackets to describe an expunction and angle brackets to describe something he has added. He uses an oblique line to separate the scholia of different origin, which refer, however, to the same word. The same line is used to divide the Homeric line found in the scholia and signalled in the text.

Following the standard rules for critical editions, there are two apparatuses: the critical apparatus and the apparatus *testimoniorum*. The critical apparatus is at the bottom of the page and is divided following a line division, not a word division. Over the critical apparatus is the apparatus *testimoniorum*, which describes the places where the scholia were found, then similar places in other commentaries, in chronological order. Another characteristic of this edition is how the author coped with the question of the nature and period of the scholia. He puts sigla in the margins of the page to express where the scholia come from, for example, scholia V originating from Constantinople manuscript V^o of the Xth. century, the ex. Scholia, whose topic is grammar, rhetoric, antiquaria and historica, the *Homeric Questions* of Porphyrio, and many others.

When trying to create a digital edition of the material described above, the question is how to encode its various parts, without omitting what is essential, but also enriching it, exploiting the new possibilities provided by the digital medium to their utmost. The enormous amount of material studied by Pontani needs to be understood in every detail because it is from this edition, the most recent one, that our encoding will proceed. Eleanor Dickey (2008¹⁸) considers Pontani's edition to be "...the first proper attempt to make sense of the manuscript tradition in more than a century and for most of its notes either the first edition in over 150 years or the first edition altogether" and "an edition..., done to a high standard from almost every perspective". Dickey affirms "Pontani sets out to surpass his predecessors in his understanding of the whole tradition

¹⁸ Dickey Eleanor, 2008, Bryn Mawr Classical Review 2008.07.39, Filippomaria Pontani (ed.), *Scholia Graeca in Odysseam: 1. Scholia ad libros α-β*. Rome: Edizioni di storia e letteratura, 2007.

of Homeric interpretation...and in conveying that understanding clearly in the edition...He succeeds in these aims admirably.”

1.9 Conclusion.

In conclusion, this chapter describes the tradition of the poems and their being oral compositions in performance. Most important is the connection made between the digital medium and orality and between users/readers and listeners of oral compositions. The reason why the Homeric poems seem the perfect work for a critical digital edition is that their importance goes beyond their being the foundation of modern literature, embracing the history of communication. The aforementioned shift in the communication model is not considered only a positive step forward. It is depicted mostly as an on-going phenomenon, whose origins are not totally detached from previous stages of communication. In the following chapter there will be a description of digital projects in Classics and especially in Homeric studies, to understand from an historical point of view where digital critical editions stand now, mainly in relationship with the possible collaborations of users/readers in a project. A digital critical edition is not an oral composition in performance, but it is not a closed environment either and, depending on its structure, the role of the users/readers in the bidirectional exchange described will always change, in a more direct or indirect manner. As we have described in this chapter, a study on communication in oral times can make us comprehend better the modern connection between users/readers and editors. Finding the differences with readers in the printed medium and highlighting the characteristics of a printed critical edition mean that nothing will be entirely lost but will be kept in mind during the transitional passage into the digital medium.

Chapter 2 Digital Projects on Homer and Other Digital Projects in Classics.

2.1 Introduction.

The second part of this dissertation presents a discussion on the notions behind the proof of concept developed for this dissertation, but before this we shall analyse a number of digital projects examined while developing the digital files and provide some initial guidelines for my “Comprehensive Odyssey”. All the projects described pertain to digital classics, not all of them, however, concern Homer. They are set out in chronological order in order to understand that the ideas behind each of them were influenced by the possibilities offered by the digital medium at the time of their conception.

The digital publications involving Homer are the *Chicago Homer*, *Eumaios*, *WordHoard* and the *Homer Multitext*. They concern two spheres of digital publications in the Classics, quantitative and linguistic analysis and the documentary editing of manuscripts. Neither of these includes a digital critical edition of the poems. The publishing of digital repositories of ancient Greek works, albeit in totally different ways, is the preserve of the *Thesaurus Linguae Graecae* and the *Perseus Project*. The *Loeb Classical Library* is digitising its pre-existing printed editions. *Perseids* and the *Digital Fragmenta Historicorum Graecorum* are part of the Open Philology project of the University of Leipzig. Connected to the digitalization of the *Odyssey* scholia are the *New Testament* project and the *Euripides Scholia* of Professor Mastronarde. The notion of collaboration will be looked at starting from the *Suda On Line*.

The following paragraphs will describe the projects in chronological order:

Thesaurus Linguae Graecae 1972 ongoing

Perseus Project 1987 ongoing

Chicago Homer, Eumaios 1998

Suda On line 1998-2014

Homer Multitext 2000 ongoing

WordHoard 2004

New Testament 2005 ongoing

Euripides scholia 2009-2010 ongoing

Digital Fragmenta Historicorum Graecorum 2013 ongoing

Perseids 2013 ongoing

Digital Loeb Classical Library 2014

2.2 *Thesaurus Linguae Graecae*¹⁹ (TLG).

The *TLG* is a digital library of Ancient Greek texts, a searchable repository of Greek texts, considered a foremother of the involvement of classics scholars in digital projects. It was started in 1972, its online database has 2434 authors in its canon and it has been running up to September 2016. Via open access we can access the *TLG* canon, an abridged version and four lexica (Liddell-Scott-Jones, Cunliffe lexicon of the Homeric dialect, Powell lexicon to Herodotus and Trapp Lexikon zur byzantinischen Gräzität). Two aspects of the *TLG* are important for the development of the proof of concept for this dissertation: its search interface and its access as a subscription service.

The search engine of the *TLG* has changed profoundly in the last year, with the implementation of the Extraction for Structured Knowledge from Ancient Resources for Classical Studies - Extraktion von strukturiertem Wissen aus Antiken Quellen für die Altertumswissenschaft (eAqua²⁰) approach. The aim of eAqua is to apply modern information technology methodologies to the study of classical texts and data. The eAqua project, started in 2009, will work on a great number of data that will be dealt with via the use of algorithm applications. “Interface” supports research in the “semantic reconstruction of lost works, after-effects of Platon’s work, classification of papyri, extraction of significant templates for different kind of inscriptions, Plautin metric and text completion for fragmentary texts” (Buechler, Heyer, Gründer, 2008, par. 3.1). In the case of the *TLG*, the algorithms come from the field of Natural Language Processing (NLP), referring mainly to inter-textual phrase matching and the concept of N-grams, “overlapping sequences of content words in text. They provide an efficient mechanism for identifying common passages between texts...” (*TLG* user’s guide). There are three possibilities of using N-grams in the *TLG*, the comparison of two texts or authors, the browsing of one text and finding its attestations in the corpus and parallel browsing of two passages. Searching goes two ways: one retrieves the exact repetition, while the other allows for changes in the word-forms.

The editors of the *TLG* clarify in the “Single-User Network License Agreement” that every text published in the *TLG* is meant for non-commercial, scholarly use, and the *TLG* will always hold its copyright. The permitted use is granted to the user after obtaining and paying for a licence: after payment, the resource will become accessible via a Network Access, and the Licensee can log into it through an individual account only once at a time. The user is subject to Fair Use Provision, not entitled to print or

¹⁹<http://stephanus.tlg.uci.edu> Accessed 11 September 2016.

²⁰<http://eaqua.e-humanities.net> Accessed 15 August 2015.

download a large amount of text or entire texts or make back-up copies. The material can be used for research, but not for “producing a commercially published document”, which also comprises the reproduction of the material even if it “differs from the original form primarily as a result of mechanical, electronic, or other manipulation”. The following part of the Agreement explains why a project like the “Comprehensive Odyssey” would breach the Licence Agreement: “Examples of uses which are not permitted are the publication of a Greek text...if such text does not reflect the addition of significant value by the editor, the downloading and reformatting of the texts for redistribution, or the production of scholarly tools...a mechanical, electronic or other similar rearrangement of text...intended for commercial publication and distribution” (Single-User Network License Agreement²¹). It is not forbidden to use the *TLG* for scholarly research and to publish its results, “acknowledging the *TLG* as the source of the material” (Single-User Network License Agreement). Following this agreement, it would not be possible to re-use the *TLG* material in the “Comprehensive Odyssey”. In turn, the editors of the *TLG* also cope with copyright by encoding the bare texts with no notes and no critical apparatus, but ensuring that every text is “essentially an electronic mirror image of the source edition from which it derives” (Pantelia, 2000, pp. 2-3).

The *TLG* requires a subscription from single users and institutions and lives off various fundings. Apart from financing the work needed for the encoding, it is not clear whether they need the funds for settling agreements with publishers to permit the reproduction of their published texts. Pantelia (2000, p. 4) does not mention copyright issues, stressing that the editions are chosen considering “the scholarly reputation..., its relative recency and availability and in some cases the typeface itself...”. As new editions appear, they will be added, offering the chance to compare more than one edition. Pantelia considers this a strong point because the *TLG* does not have the critical apparatus to do so itself. Pantelia (2000, p. 10) states that this was “a result of technical considerations” conceived in the early days of the project. Current encoding techniques could facilitate such an encoding, but the task of adding the critical apparatus to all the texts already available would be too great. At one point, while evaluating the *TLG*, Crane (2007, p.35-36, 57) discusses copyright and the circulation of texts. In his opinion, the *TLG* is an important tool for classics scholars, but it is accessible only on a “single propriety site, ... with no interoperability”, becoming a hindrance to the progress of Hellenic studies (Crane, 2007, p. 36). Furthermore, reporting on the texts published in *TLG*, he points out that “according to at least one of the participants at the

²¹ http://www.tlg.uci.edu/subscriptions/single_license.php?page_type= Viewed on 4 August 2014

international gathering of Hellenists which launched the *TLG*..., the experts in the field assumed that the texts of ancient authors, as published in editions, were not copyrightable” (Crane, 2007, p. 57). The Sächsische Landesbibliothek - Staats- und Universitätsbibliothek (Dresden) (SLUB) in a project in connection with the *Open Greek and Latin Project* of the Humboldt Chair of Digital Humanities at the University of Leipzig²² also considers the critical apparatus as the copyrightable part of a critical edition. They are scanning editions from the year 1922 to 1984, following the European law on public domain. Editions whose author died before 1943 are published completely, while later ones are scanned with the critical apparatus covered. The main hindrance of the *TLG* is its not allowing the reuse of its material for the publication of other editions. Digital editing should allow not only performing semantic and textual researches but also not typing the text of a work again every time it is needed, making a work less prone to mistakes and the presence of errata corrigenda. Furthermore, the source files, tied to a proprietary and closed platform, are not available and the platform is too tightly bound to a single user and his/her own account, due to a change in the way of accessing it. Now, every user has a private account into which s/he needs to sign in together with his/her private or institutional subscription. It is shifting more and more towards being closed within itself, excluding every other opportunity the digital medium offers. It is not a totally negative notion, once understood, but it does not seem open to collaborative advancements.

2.3 The *Perseus Project*.

The *Perseus Project* is a digital library that contains collections of Ancient Greek texts and other materials. The compilation in its present state also includes Arabic materials, Germanic materials, 19th century American, Renaissance materials, Richmond Times dispatch and Humanist and Renaissance Italian Poetry in Latin. It is described as being interoperable, modular and open source, offering the possibility to interact with different kinds of texts. The search interface is available in two forms: one based on the ‘Hopper’ source code and the other on the Philologic system. Looking at the web site based on Hopper²³, we can understand that it can provide support for the automatic lemmatization of texts in Greek, Latin and Arabic. It works on bidirectional links, supplying translations, commentaries, dictionaries and other secondary sources on

²² <http://ancientworldonline.blogspot.it/2015/01/sachsische-landesbibliothek-staats-und.html> Accessed 23 September 2015.

²³ <http://www.perseus.tufts.edu/hopper/> Accessed 11 September 2016.

a given text. It allows searching for words, phrases and lemmas, includes texts encoded in XML/TEI, many of which available as public domain XML files through a Creative Common licence. The interface works with an online library of texts but is also available for interaction with texts outside the library. It permits a search for name entities, timelines, lemmas and accents. Tufts University retains the copyright, and the material is available only for personal use.

Looking at Perseus under Philologic²⁴, Philologic²⁵ is a tool for textual search, retrieval and analysis of large collections developed in the early eighties by the American and French Research on the Treasury of the French Language (ARTFL²⁶), which holds North American digitized French resources. The texts found are the same as in the Hopper web site but the search tool is based on a research environment for “large databases of literary, religious, philosophical, and historical texts” (Philologic web site). The version of Philologic of the *Perseus Project* was developed particularly for collections of texts encoded following the TEI. Its simplest function is to retrieve documents or parts of them, even producing a corpus on which to perform word searches, text extraction and format conversion. This is a bibliographic search, which can be effected starting from author and title. This investigation is assisted by the possibility of asking for help and being given the entire list of authors and titles from which to choose. It is also possible to search from the editor’s name, the publication data, the language, the name of the file, the genre and a short quotation. The availability of lists even for those other searches is important because the retrieval is connected to the employment of the exact terms used in the database, including accents and breathings. While this is an aspect of Philologic described in its user manual, in the *Perseus Project* it is also possible to search without diacritics and in transliteration. The result of a bibliographic search gives a table of contents and links to other resources such as translations and commentaries. A word search lists all the occurrences of a word, producing either a concordance or a Keyword in the centre report, both with bibliographic details. We can search particular morphological characteristics, using formulas such as position and lemma followed by abbreviations. Those searches can also be performed in a corpus created via a bibliographic search. As an example, the first two images that follow are the search for πολυτροπ* in context with no diacritics, where we can see a list of all the occurrences of the word in the entire corpus, with bibliography. The subsequent picture shows the same search with the key work in

²⁴ <http://perseus.uchicago.edu/index.html> Accessed 24 September 2015.

²⁵ <https://sites.google.com/site/philologic3/> Accessed 24 September 2015.

²⁶ <http://artfl-project.uchicago.edu> Accessed 24 September 2015.

context. The last two pictures show the search for πολύτροπος using the command similarity search and the refinements that can be performed in order to select some texts.

Greek Texts & Translations

[search](#)
[help](#)
[report a problem](#)

Hom. Il. 2.345

Citation Lookup

Bibliographic criteria: **none** (All documents document(s))Search criteria: **πολυτροπ.***Your search found **34** occurrences
[Click here for a KWIC Report](#)

Occurrences 1-34:

1. Apollonius Rhodius. *Argonautica* [Ap. Rhod. **book 3** line 600]

ποτε βάξιν
 λευγαλήν οὔ πατρός ἐπέκλυεν Ἥηλιοιο,
 χρεῖώ μιν πυκινόν τε δόλον βουλὰς τε γενέθλης
 600 σφωιτέρης ἄτην τε **πολύτροπον** ἐξαλέασθαι·
 τῷ καὶ ἐλδομένους πέμπειν ἐς Ἀχαιίδα γαῖαν
 πατρός ἐφημοσύνη, δολιχὴν ὁδόν. οὐδὲ θυγατρῶν
 εἶναί οἱ

2. Appian. *The Civil Wars* [App. BC **book 2** chapter 14 section 97]

τῷ τέλει ἐλέφαντες ἐς τὰ σημεῖα ἐπείκινται. Μακρὰς δὲ καὶ ἐπιπόνου κατὰ πάντα τὰ μέρη τῆς μάχης καὶ **πολυτρόπου** γενομένης, περὶ ἐσπέραν μολὶς ὁ Καῖσαρ ἐνίκα καὶ τὸ στρατόπεδον
 εὐθύς ἐξῆρει τὸ τοῦ Σκιπίωνος, οὐδὲν ἀνιεῖς οὐδ’

3. Appian. *The Syrian Wars* [App. Syr. **section 48**]

ὑπὸ Μιθριδάτου τοῦ Ποντικοῦ βασιλέως, ὁ Μιθριδάτειος πόλεμος ἐπὶ τῷδε καὶ ἐφ’ ἑτέροις ἤρξατο συνίστασθαι, μέγιστός τε καὶ **πολυτροπώτατος** ἔθνεσι πολλοῖς γενόμενος, καὶ παρατείνας
 ἐς ἔτη μάλιστα τεσσαράκοντα, ἐν οἷς πολλὰ μὲν ἀρχαὶ Σύροις ἐκ τοῦ

4. Diogenes Laertius. *Lives of Eminent Philosophers* [Diog. Laert. **book 4** chapter 7]

τε καὶ Φιλωνίδης ἱστοροῦντες αὐτά· σκόπει δέ με ἐξ ἑμαυτοῦ. Καὶ ἦν ὡς ἀληθῶς ὁ βίων τὰ μὲν ἄλλα **πολύτροπος** καὶ σοφιστῆς ποικίλος καὶ πλείστας ἀφορμὰς δεδωκώς τοῖς βουλομένοις
 καθιππάζεσθαι φιλοσοφίας· ἐν τισι δὲ καὶ πομπικός

5. Flavius Josephus. *Antiquities of the Jews* [Joseph. AJ **book 1** section 8]

Figure 7 πολυτροπ* in context and with no diacritics

33. Thucydides, *The Peloponnesian War* [Thuc. **book 2 chapter 44 section 1**]

“δι’ ὅπερ καὶ τοὺς τῶνδε νῦν τοκέας, ὅσοι πάρεστε, οὐκ ὀλοφύρομαι μᾶλλον ἢ παραμυθήσομαι. ἐν **πολυτρόποις** γὰρ ξυμφοραῖς ἐπίστανται τραφέντες· τὸ δ’ εὐτυχές, οἱ ἂν τῆς εὐπρεπεστάτης λάχωσιν, ὥσπερ οἶδε μὲν νῦν, τελευτῆς,

34. Thucydides, *The Peloponnesian War* [Thuc. **book 3 chapter 83 section 3**]

γὰρ δεδιέναι τό τε αὐτῶν ἐνδεές καὶ τὸ τῶν ἐναντίων ξυνετόν, μὴ λόγοις τε ἥσους ὥσι καὶ ἐκ τοῦ **πολυτρόπου** αὐτῶν τῆς γνώμης φθάσωσι προεπιβουλευόμενοι, τολμηρῶς πρὸς τὰ ἔργα ἐχώρουν. οἱ δὲ καταφρονοῦντες κἄν προαισθῆσθαι

Results Bibliography

Apollonius Rhodius, *Argonautica* (XML Header) [genre: poetry; hexameter] [word count] [Ap. Rhod.].

Appian, *The Civil Wars* (XML Header) [genre: prose] [word count] [App. BC].

Appian, *The Syrian Wars* (XML Header) [genre: prose] [word count] [App. Syr.].

Diogenes Laertius, *Lives of Eminent Philosophers* (XML Header) [word count] [Diog. Laert.].

Flavius Josephus, *Antiquities of the Jews* (XML Header) [genre: prose] [word count] [Joseph. AJ].

Flavius Josephus, *Jewish War* (XML Header) [genre: prose] [word count] [Joseph. BJ].

Herodotus, *The Histories* (XML Header) [genre: prose] [word count] [Hdt.].

Hippocrates, *Regimen in Acute Diseases* (XML Header) [word count] [Hipp. Acut.].

Homer, *Odyssey* (XML Header) [genre: poetry; hexameter] [word count] [Hom. Od.].

NA, *Homeric Hymns* (XML Header) [genre: poetry; hexameter] [word count] [HH].

Plato, *Hippias Minor* (XML Header) [genre: prose] [word count] [Pl. Hp. Mi.].

Plato, *Statesman* (XML Header) [genre: prose] [word count] [Pl. Plt.].

Plutarch, *Alcibiades* (XML Header) [genre: prose] [word count] [Plut. Alc.].

Polybius, *Histories* (XML Header) [genre: prose] [word count] [Polyb.].

Thucydides, *The Peloponnesian War* (XML Header) [genre: prose] [word count] [Thuc.].

Figure 8 πολυτροπ* in context and with no diacritics – bibliography

Occurrences I-34:

νόν τε δόλον βουλὰς τε γενέθλης σφωιτέρης ἄτην τε καὶ ἐπιπόνου κατὰ πάντα τὰ μέρη τῆς μάχης καὶ ὧδε καὶ ἐφ' ἐτέροις ἤρξατο συνίστασθαι, μέγιστός τε καὶ . Καὶ ἦν ὡς ἀληθῶς ὁ Βίων τὰ μὲν ἄλλα δὴ μεγάλοις μὲν αὐτὸς ὁμιλήσας πράγμασι καὶ τύχαις ὑπὲρ τῶν Ἑβραίων· θηρίων γὰρ παντοίων καὶ τοῖς ἀγνοοῦσιν εἰρήκαμεν, ὅτι ποικίλῃ τέ ἐστι καὶ ν τὸ τέλος Ὑγκανῶ συνέπεσεν τοῦ βίου ποικίλαις καὶ ἐκατέρωθεν. αἱ δ' ὁροφαὶ Ξύλοις ἐξήσκητο γλυφαῖς αγενομένης ἀδείας ἐξέφερον εἰς μέσον ὅποσα εἶδεῖν. ιογοποιεῖ, καὶ τῶν τολμηροτέρων κατὰ στίφος ἦσαν ληστεῖαι καὶ τῆς ἐσχάτης τοῦ βίου τελευτῆς, ἣν ὑπέμειναν ἐν ιομεῖναι καταγνώσεως, οὐκ εἰς μακρὰν δὲ νόσω καταληφθεῖς ἰν φῶρα πυθόμενον τῶν εἵνεκα ταῦτα ἐπρήσσετο, βουληθέντα ν ἄξιον λόγου, καίτοι μέγα τοῦτο παρήκαν. Τὰς μέντοι ἄνδρα μοι ἔννεπε, μοῦσα, ἀκλήητος νόος ἐστίν. ἡ σύ γ' Ὀδυσσεύς ἐσσι ἀρίσημά τε ἔργα τέτυκτο· καὶ τότ' ἐγένετο παῖδα τα διακρινέεσθαι οἶω· νῦν δ' ἄγε μοι τόδε εἰπέ, Ἀχιλλεὺς τῶν εἰς Τροίαν ἀφικομένων, σοφώτατον δὲ Νέστορα, δὲ τὸν Ὀδυσσεῖα εἶπες ὅτι πεποιηκῶς εἴη ὁ ποιητῆς εἰπέ, ἄν τι ἐνθένδε μᾶλλον μάθω· ὁ Ἀχιλλεὺς οὐ νῦν ἤδη, ὦ Ἥπια, κινδυνεύω μανθάνειν ὃ λέγεις· τὸν δὴ, ὡς ἔοικεν, εἰσὶ κατὰ τὸν σὸν λόγον καὶ ν λόγον καὶ πολύτροποι· ἡ γάρ, ναί. α ἀληθὴ εἶναι, τὸν δὲ Ὀδυσσεῖα ψευδῇ καὶ ἐν Ὀδυσσεὺς οὐδαμοῦ φαίνεται ψευδόμενος, ὁ φαίνεται ψευδόμενος, ὁ πολύτροπος, ὁ δὲ Ἀχιλλεὺς ἐτέροις, πάμπολλοι δὲ Σατύροις καὶ τοῖς ἀσθενέσι καὶ ν ὕστερον, ὡς εἰκὸς ἐν πράγμασι μεγάλοις καὶ τύχαις παρ' αὐτῷ πρῶτος καὶ μέγιστος. τὸ μὲν γὰρ πρόσωπον λέγει πως οὕτως· ἄνδρα μοι ἔννεπε, Μοῦσα, ὅσοι πάρεστε, οὐκ ὀλοφύρομαι μᾶλλον ἢ παραμυθῆσομαι. ἐν ξυνητόν, μὴ λόγοις τε ἥσσους ὥσι καὶ ἐκ τοῦ	πολύτροπον ἐξαλέασθαι· τῷ καὶ ἐλδομένους πέμπειν ἐς Ἀχαιίδα γαῖαν πολυτρόπου γενομένης, περὶ ἐσπέραν μόλις ὁ Καῖσαρ ἐνίκα καὶ τὸ πολυτροπώτατος ἔθνεσι πολλοῖς γενόμενος, καὶ παρατείνας ἐς ἔτη μάλιστα πολύτροπος καὶ σοφιστῆς ποικίλος καὶ πλείστας ἀφορμὰς δεδωκώς τοῖς πολυτρόποις, ἐν ἅπασι δὲ θαυμαστὴν φύσεως ἐπιδειξάμενος ἰσχύον καὶ πολυτρόπων, ὧν εἰς ὅσιν οὐδεὶς ἀπηντῇκει πρότερον, τὴν χώραν πολύτροπος καὶ καθ' ὥραν ἀπαντᾷ τεταγμένως, ἃ τε δεῖ γενέσθαι πολυτρόποις χρησαμένων ταῖς ἐν τῷ ζῆν τύχαις· εὐθὺς μὲν γὰρ πολυτρόποις σχημάτων ιδέαις, καὶ τὸ τῆς μέσης βάθος ἐπὶ μεῖζο πολύτροποιί τε κακίων ἀποδείξεις ἦσαν οὐδαμόθεν ψεύδους αἰτίαν ἐγκαλεῖς πολύτροποι, μάλιστα τὰ περὶ τὴν πόλιν ἀρπαζόντων ἐπιτήδεια καὶ πολυτρόποις αἰκίαις ἀποθανόντες, οὐ μὴν ἀλλὰ φαίη τις πολυτρόπων καὶ δυσιάτῳ χαλεπῶς ἀπήλλαττεν, οὐ τὸ σῶμα μόνον κο πολυτροπήν τοῦ βασιλέως περιγενέσθαι ποιεῖν τάδε· νεκροῦ προσφρά πολυτροπίας τὰς ἐν ἐκάστη τῶν νούσων καὶ τὴν πολυσχιδίῳ αὐτ πολύτροπον, ὃς μάλα πολλὰ πλάγχθη, ἐπεὶ Τροίης ἱερὸν πτολίεθρον πολυτρόπων, ὃν τέ μοι αἰεὶ φάσκεν ἐλεύσεσθαι χρυσόρραπις ἀργεῖφόντη πολύτροπος, αἰμυλομήτην, ληιστῆρ', ἐλατῆρα βοῶν, ἡγήτορ' ὀνείρων, νυκτ πολύτροπε Μαιάδος υἱέ, ἡ σοί γ' ἐκ γενετῆς τάδ' ἄμ' πολυτροπώτατον δὲ Ὀδυσσεῖα. βαβαῖ, ὦ Ἥπια· ἄρ' ἄν τ πολυτροπώτατον, τοῦτο δ', ὡς γε πρὸς σὲ τάληθ' εἰρήσθαι, παντ πολύτροπος τῷ Ὀμήρῳ πεποιήται; ἥκιστα γε, ὦ Σώκρατες, πολύτροπον ψευδῇ λέγεις, ὡς γε φαίνεται. μάλιστα, πολύτροποι· ἡ γάρ, ναί. πολύτροποι δ' εἰσὶ κα πολύτροποι δ' εἰσὶ καὶ ἀπατεῶνες ὑπὸ ἡλιθιότητος καὶ ἀφροσύνης, πολύτροπον; ναί. νῦν οὖν αἰσθάνη ὅτι ἀναπέφονται πολύτροπος, ὁ δὲ Ἀχιλλεὺς πολύτροπός τις φαίνεται κατὰ τὸν σὸ πολύτροπός τις φαίνεται κατὰ τὸν σὸν λόγον· ψεύδεται γοῦν, προε πολυτρόποις θηρίοις· ταχὺ δὲ μεταλλάττουσι τὰς τε ιδέας καὶ τὴ πολυτρόποις, ἀνομοιότητος πρὸς αὐτὸ καὶ μεταβολὰς ἐπεδείξατο. φύσει δὲ πολύτροπον καὶ περιττὸν αὐτοῦ τῆς δεινότητος οὐκ ὦν ἀπλοῦς, πολύτροπον, ὃς μάλα πολλὰ πλάγχθη, καὶ προβάς, πο πολυτρόποις γὰρ ξυμφοραῖς ἐπίστανται τραφέντες· τὸ δ' εὐτυχές, οἱ πολυτρόπου αὐτῶν τῆς γνώμης φθάσῃσι προεπιβουλευόμενοι, τολμηρῶς πρὸς τ	1. <i>Ap. Rhod. 3.600</i> 2. <i>App. BC 2.14.97</i> 3. <i>App. Syr. 48</i> 4. <i>Diog. Laert. 4.7</i> 5. <i>Joseph. AJ 1.8</i> 6. <i>Joseph. AJ 2.303</i> 7. <i>Joseph. AJ 10.142</i> 8. <i>Joseph. AJ 15.179</i> 9. <i>Joseph. AJ 15.416</i> 10. <i>Joseph. AJ 17.125</i> 11. <i>Joseph. BJ 1.347</i> 12. <i>Joseph. BJ 7.272</i> 13. <i>Joseph. BJ 7.451</i> 14. <i>Hdt. 2.121E.3</i> 15. <i>Hipp. Acut. 1</i> 16. <i>Hom. Od. 1.1</i> 17. <i>Hom. Od. 10.330</i> 18. <i>HH 4.10</i> 19. <i>HH 4.435</i> 20. <i>Pl. Hp. Mi. 364c</i> 21. <i>Pl. Hp. Mi. 364e</i> 22. <i>Pl. Hp. Mi. 364e</i> 23. <i>Pl. Hp. Mi. 365b</i> 24. <i>Pl. Hp. Mi. 365e</i> 25. <i>Pl. Hp. Mi. 365e</i> 26. <i>Pl. Hp. Mi. 369b</i> 27. <i>Pl. Hp. Mi. 370a</i> 28. <i>Pl. Hp. Mi. 370a</i> 29. <i>Pl. Plt. 291b</i> 30. <i>Plut. Alc. 2.1</i> 31. <i>Plut. Alc. 24.4</i> 32. <i>Polyb. 12.27.10</i> 33. <i>Thuc. 2.44.1</i> 34. <i>Thuc. 3.83.3</i>

Results Bibliography

Apollonius Rhodius, *Argonautica* (XML Header) [genre: poetry; hexameter] [word count] [Ap. Rhod.].

Figure 9 Same search using KWIC

Greek Texts & Translations

search

help

report a problem

Hom. Il. 2.345

Citation Lookup

Found 34 matches, shown with frequencies in entire database.

Select words to search in the entire database. Select output options and bibliographic criteria below.

SEARCH or CLEAR

- 5 ☐ lemma: Πόλυτροπος
- 2 ☐ lemma: Πόλυτροπος; pos: ne-s---ma-
- 1 ☐ lemma: Πόλυτροπος; pos: ne-s---mg-
- 2 ☐ lemma: Πόλυτροπος; pos: ne-s---mn-
- 2 ☐ lemma: πολυτροπία
- 1 ☐ lemma: πολυτροπία; pos: n--p---fa-
- 1 ☐ lemma: πολυτροπία; pos: n--s---fd-
- 5 ☐ lemma: πολύτρητος
- 3 ☐ lemma: πολύτρητος; pos: a--p---md-
- 1 ☐ lemma: πολύτρητος; pos: a--s---ma-
- 1 ☐ lemma: πολύτρητος; pos: a--s---mn-
- 32 ☐ lemma: πολύτροπος
- 7 ☐ lemma: πολύτροπος; pos: a--p---md-
- 1 ☐ lemma: πολύτροπος; pos: a--p---mg-
- 4 ☐ lemma: πολύτροπος; pos: a--p---mn-
- 6 ☐ lemma: πολύτροπος; pos: a--s---ma-
- 2 ☐ lemma: πολύτροπος; pos: a--s---mas
- 1 ☐ lemma: πολύτροπος; pos: a--s---md-
- 2 ☐ lemma: πολύτροπος; pos: a--s---mg-
- 6 ☐ lemma: πολύτροπος; pos: a--s---mn-
- 1 ☐ lemma: πολύτροπος; pos: a--s---mns
- 1 ☐ lemma: πολύτροπος; pos: a--s---mv-
- 1 ☐ lemma: πολύτροπος; pos: a--s---na-
- 2 ☐ lemma: πολύτροφος
- 2 ☐ lemma: πολύτροφος; pos: a--s---mv-
- 2 ☐ Πόλυτροπος
- 1 ☐ πολυτροπίας
- 2 ☐ πολυτρόπου

Figure 10 πολύτροπος using the command similarity search

- 1 ☐ πολύτρητος
- 1 ☐ πολύτροποί
- 3 ☐ πολύτροποι
- 7 ☐ πολύτροπον
- 5 ☐ πολύτροπος
- 1 ☐ πολύτροπός

§Limit your search by the following fields:

Genre		Terms (e.g., prose; science; medicine)
Publisher		Terms (e.g., Trustees of Tufts University)
Pubplace		Terms (e.g., New York)
Editor		Terms (e.g., E. C. Marchant)
Pubdate		Terms (e.g., 1967)
Language		Terms (e.g., Greek)
Shrtcite		Terms (e.g., PlatoEpinomisEn)
Filename		Terms (e.g., AristophanesPeaceEn.xml)
Filesize		Terms (e.g., 101025)

§ Refined Search Results:

- ☒ Occurrences with Context (default) ☐ Occurrences Line by Line
- ☐ Frequency by Title ☐ Frequency by Title per 10,000
- ☐ Frequency by Author ☐ Frequency by Author per 10,000 [Check ☐ to hide titles]
- ☐ Frequency by Years ☐ Frequency by Years per 10,000
- Select Year Group [Check ☐ to hide titles]
- ☐ Collocation Table Spanning words Turn Filter Off: ☐
- ☐ Word in Clause Position (Theme-Rheme) Display Options:

or

Figure 11 πολύτροπος using the command similarity search

As Crane (2007, p. 36ff.) describes it, the *Perseus Project* offers open access to everything not under copyright in its collections. Its material can be reused, provided it is published under the same terms, and is accessible without a subscription. He believes that interoperability and open access publication are the only ways for humanities scholars to produce a more transparent work. *Perseus* is open to customizations and additions. Trials have been carried out concerning user profiles and adding commentaries, for example as classroom assignments for students²⁷. Crane talks about producing resources for learning and for interdisciplinary research, and the *Perseus Project* can offer both. It will benefit from the work on Open Philology underway in Leipzig, of which there will be a description in this chapter of one of its branches, *Perseids*, a platform for the publication of annotations in an integrated environment.

2.4 The *Chicago Homer*, and *Eumaios*.

The *Chicago Homer*²⁸, published in 1998 by the University of Chicago Press, is devoted to early Greek poetry; its editors are Ahuvia Kahane and Martin Mueller; the technical editors were Craig Berry and Bill Parod. It is now free but, at the time of publication, was available only through an institutional site license obtained by paying an annual subscription.

The same editors are working on *Eumaios*²⁹, a project that expands the *Chicago Homer*. Looking at the *Chicago Homer* web site, we should notice how the editors describe it. This helps us understand its original purpose and how using it as a digital text of Homer with a translation can be somehow disconnected from its main goal, that of a tool for quantitative analysis. The *Chicago Homer* is called a “multilingual database that uses the search and display capabilities of electronic texts to make the distinctive features of early Greek epic accessible to readers with and without Greek” (*Chicago Homer* front page). The data of this website are connected to the website *Eumaios* and the application *WordHoard*³⁰, to exploit their potential. *WordHoard* (see paragraph 7), is “an application for the close reading and scholarly analysis of deeply tagged literary texts” which allows “the simultaneous display of all forms of a given lemma, a metrically parsed version of the text, and the display of the scholia adjacent to the text” (*WordHoard* front page). The *Chicago Homer* contains the *Iliad*, the *Odyssey*,

²⁷ <http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.01.0199%3Abook%3D1%3Achapter%3D1%3Asection%3D1> Accessed 25 September 2015.

²⁸ <http://digital.library.northwestern.edu/homer/> Accessed the 17th. August, 2016.

²⁹ <http://panini.northwestern.edu/AnaServer?eumaios+0+frame.any> Accessed the 17th. August, 2016

³⁰ <http://wordhoard.northwestern.edu/userman/index.html> Accessed the 4th. August 2014

the *Theogony*, *Works and Days*, the *Shield of Heracles* and the *Homeric Hymns*, available in Greek, English, German and in transliteration. On the website *Eumaios* one can also find the scholia of the *Iliad*, but not those of the *Odyssey*.

The *Chicago Homer* is proof that the active involvement of classical scholars in the digital medium is greater from a quantitative point of view than from an editorial one. It does not offer a critical edition of the Homeric Poems, but, as will be explained below, provides the means for a quantitative analysis. Martin Mueller (1997), one of its editors, explicitly states that this project is a “Web-based edition of Early Greek Epic.... behind the relatively user-friendly Web interface there is a relational database with a substantial query potential for linguistic data at the lexical and morphological level”. This database aims to analyse phrasal repetitions using “grammatical, narratological, contextual and statistical categories” (1997). The project is composed of three parts: an electronic edition of the texts, database tables and a Web-based user interface.

Contrary to our original decision for the “Comprehensive Odyssey”, the texts in the *Chicago Homer* do not come from the *Thesaurus Linguae Graecae* (TLG), but from the *Perseus Project*, the Loeb Library and the Oxford Classical Library. Tufts University holds the copyright of the material of the *Perseus Project*, allowing only personal use, providing XML files through a Creative Commons licence. Furthermore, certain texts in the *Perseus Project* are the transcription of editions of the Loeb library and the Oxford Classical Texts, which remain the owners of these copyrights. In the case of the *Iliad*, Hesiod and the *Homeric Hymns*, the edition is the same as the TLG. Commercial use requires authorization.

In the *Chicago Homer*, both Homeric poems were collated with the van Thiel edition. Quoting from the *Chicago Homer* web site introduction, “...where the texts diverge, we followed that text [van Thiel’s edition] in most instances. Van Thiel’s edition has a marked preference for the readings of the vulgate text, on the sensible ground that this is the text that was read through much of antiquity”. The editors “standardized orthographic conventions across the texts...The resultant text is best described as a standard edition tweaked a little to make it compatible with the database environment in which it functions”.

In order for all queries concerning research to be answered, every word was considered a token with multiple properties. It is impossible to see how the text is tagged because the source files are not provided; however, every word is given a lemma following the Liddell-Scott-Jones dictionary, detailed frequency information such as the number of lemmata, word forms, repeated phrases and their variants. Every lemma has

a word type (noun, adjective etc.) and a word state (tense, mood, case, etc.), and every line is tagged to understand whether it refers to narrative or to speech. The user interface stores all this information hidden in the database. The editors, aware of the constraints that a web search causes to its query potential, attempted to reach a compromise between the number of available queries and a user-friendly interface. The information necessary for the use of the web site and its search functions can be found under the sections “using the *Chicago Homer*” and “a tutorial”.

There are two stages that lead the user/reader into the web site:



Ahuvia Kahane and Martin Mueller, editors
Craig Berry and Bill Parod, technical editors

The Chicago Homer is a multilingual database that uses the search and display capabilities of electronic texts to make the distinctive features of Early Greek epic accessible to readers with and without Greek. Except for fragments, it contains all the texts of these poems in the original Greek. In addition, the Chicago Homer includes English and German translations, in particular Lattimore's *Iliad*, James Huddleston's *Odyssey*, Daryl Hine's translations of Hesiod and the Homeric Hymns, and the German translations of the *Iliad* and *Odyssey* by Johan Heinrich Voss. Through the associated web site Eumaios users of the Chicago Homer can also from each line of the poem access pertinent *Iliad* Scholia and papyrus readings.

The data of the Chicago Homer have also been integrated into *WordHoard*, an application for the close reading and scholarly analysis of deeply tagged literary texts. *WordHoard* does not replicate all functionalities of the Chicago Homer but has some features of its own, notably the simultaneous display of all forms of a given lemma, a metrically parsed version of the text, and the display of the scholia adjacent to the text.

ENTER

For proper display of Greek you must set your browser font to Palatino Linotype or Arial Unicode MS on Windows and to Lucida Grande on the Macintosh. These fonts support the extended Greek character set of precomposed characters, on which the display depends.

[About the Chicago Homer](#) | [Using the Chicago Homer](#)
[Understanding the Chicago Homer](#)
[A Tutorial](#) | [Technical Requirements](#)

Figure 12: Introductory page to the *Chicago Homer*

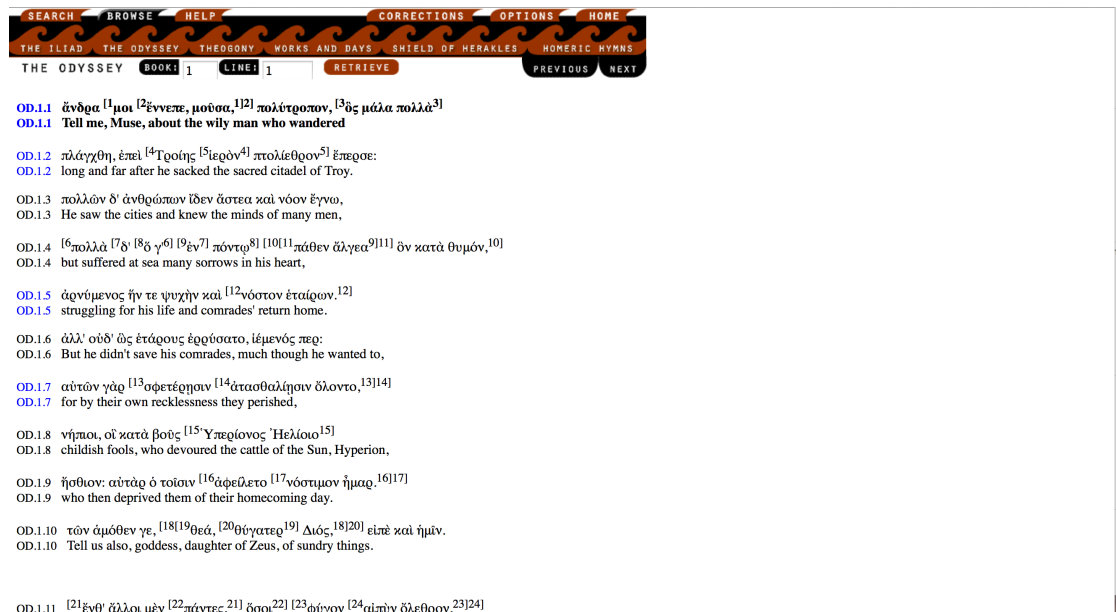


Figure 13: The text of the *Odyssey* with the English translation

The user/reader moves from the introductory page with the initial explanations to the main user interface from where it is possible to browse the texts or to pose queries. We can search for words or phrases by looking at terms, frequency, word type, inflectional categories, line ranges, narrative speech and speakers, terms contained, frequency and length, fuzzy matching and line ranges. By looking at the text, one can discover when, and if, repetitions of a word or a sequence of words have been tagged.

Mueller (1997) defined the *Chicago Homer* precisely as a “Pedagogical and Scholarly tool”, since what it offers in terms of the quantitative search for repetitions, frequency of words and concordances is of interest not only to students but above all to scholars. There can be no doubt that it “provides a foundation for the study of many linguistic data...that lend themselves to quantitative analysis...its potential to mapping data...what reasonable inferences can be drawn about the genesis of the poems from the frequency and distribution of repeated phrases in them” (1997). The editor hopes that, by providing new access to repetitions and other data, he may “reshape the Homeric Question by putting some old controversies to rest and opening fields for new enquires” (1997). As much as this project affords access to linguistic data and quantitative analysis, it can be seen simply as a digital textbook, where the text of the *Odyssey* together with a translation can be found. It can be used in a classroom ignoring the additional characteristics that it can provide, such as the frequency of a word and the occurrences of phrasal repetitions. This is not to undermine those qualities which play an important role in the study of the Poems as oral compositions in performance. We understand that every digital publication may be seen as a digital textbook, but, in this case, it seems to be even more so. Its various layers do not overpower the user/reader:

they are there if needed and leave room for an edition that may be used by different users with distinct needs. Its various capabilities are suitable for different kinds of utilizations by various users/readers.

Following the *Chicago Homer*, its editors published the XML/TEI compliant platform called *Eumaios*, produced in order to extend the *Chicago Homer*, and directly accessible from the *Chicago Homer* itself. Every line in the *Chicago Homer* is numbered. Any line with more detailed information in *Eumaios* has a highlighted link attached to its number, and by clicking on it the user/reader will open the corresponding page in *Eumaios*. So far the two projects have been linked but not merged; they have two different user interfaces and, moreover, two different infrastructures in their background. Its editors call it an “embryonic digital variorum”, which can provide the following information, as specified in one frame of the home page:

1. Information that is tied to specific lines of text, in particular:
 - a) Papyrus readings for the *Iliad* and *Odyssey*, gathered from Dana Sutton's list, now maintained by the Center for Hellenic Studies, but displayed differently here
 - b) Scholia from Hartmut Erbse's edition of the Scholia
 - c) Correspondences between the *Iliad* and the *Aeneid*, based on the lists in Georg N. Knauer's *Die Aeneis und Homer. Studien zur poetischen Technik Vergils mit Listen der Homerzitate in der Aeneis* (Göttingen, 1964)
 - d) Bibliographical items gathered from volumes 35-63 (1964-92) of *L'Année Philologique*
2. Bibliographical information about lemmata, wordforms, and repeated phrases gathered from volumes 35-63 (1964-92) of *L'Année Philologique*
3. A report by Martin Mueller *About Homeric repetitions: facts, figures, and hypotheses* as well as notes on some 300 interdependent repetitions in the first and last books of the *Iliad*.

Eumaios is a proof of concept and therefore should be treated as such. It is not complete, and the editors do not say whether it ever will be. The web site has a frame structure, but frames are considered bad practice for various reasons: they contain an HTML page within another HTML page, which can make them slow and prone to interaction difficulties. Furthermore, frames often make the back button of a web-browser unusable. There are four frames on every page, including a list of the material together with search results. The lines are transliterated with the English translation and have five links to bibliographic references, papyrus readings, *Aeneid* allusions, scholia and Repetition notes. The infrastructure looks simple and stable during navigation, providing clear information in every frame.



Figure 14: Example of the *Eumaïos* interface

The interface was created using Anastasia (Analytical System Tools and SGML/XML Integration Applications), now replaced by SDPublisher³¹ (Scholarly Digital Publisher). SDPublisher handles XML files as a stream XML system, not as a push or pull system, and does not require XSLT, a characteristic that the editor, Peter Robinson, considers a great advantage for some users. SDPublisher is mainly used for documents with multiple overlapping. It employs the Python database for data storage as the programme language, and the Django framework. To run the program, the editor needs an up-to-date web browser, knowledge of XML and a text editor. Before thinking about an edition, the editor needs to install Python, Berkeley Database XML, Django and Pixelise, the core-processing module of SDPublisher.

From this short analysis it should be primarily stressed that the fact that this publishing system avoids XSLT does not make it is easier to handle: it requires a sound knowledge of Python and of the Pixelise processor; it is modified and restarted every time a new text is uploaded onto it. This is effected by handling and amending Python files, at times even copying and changing their location to new folders. Its use depends mainly on the editor's confidence in using Python and the Terminal, but, even if it may be called a medium for self-publication, it will need technical assistance whenever problems arise in any of the aforementioned passages. This is not to say, on the other hand, that learning XML and XSLT is easy, but it seems similar to learning languages that are from the same system and, moreover, there is no need to install any program or database on the computer.

³¹ <http://www.sd-editions.com/SDPublisher/> Accessed 11 September 2016.

Furthermore, it is impossible to see the underlying encoding in *Eumaios*. There are no source files available, merely the information that “this Web display is generated on the fly from a single TEI-encoded file with the help of the Anastasia Electronic Publishing System, published by Scholarly Digital Editions” (*Eumaios* Web page).

2.5 *Suda On Line*.

The *Suda On Line*³² is a very interesting project involving collaboration among Classics scholars. It started in 1998 and was completed in 2014. It is an online translation of, and commentary on, the *Suda*: “an encyclopedia of classical learning, written in the 10th Century AD by a committee of scholars in Byzantium” (Mahoney, 2009, paragraph 1). It is based on the critical edition by Adler, published between 1928 and 1938, and involved a large group of scholars and students. From the technological aspect, the editing and translating is borne in a web system, and the text uses an XML-like markup without validation. The history of the translation, commentary and revision is stored in a non-relational database, converted to HTML for display. The Greek is stored in Beta-Code and may be displayed in Unicode, several font encodings and transliteration. Graduate and undergraduate students in Classics and in Computer Science were involved in the project from the outset. Mahoney (2009, p. 4) describes the collaborative aspect of the *Suda On Line* as an open “peer review process” where every reader is able to find the editing history of all the entries, so that the contribution of every single translator and editor is recognised. The first person to deal with an entry is the translator and s/he can discover who edited and checked his/her work. A restricted group of translators has an editorial status with the task of verifying the quality of the translation and adding further bibliography and a commentary. This project shows that the refinement of a translation and commentary is always in progress. Every entry has a status that reflects this progress, from ‘draft’ to ‘high’. Mahoney underlines (2009, p. 9) that the commentaries and the links provided contain not only the work of “expert editors” but also “everything that a translator might find useful”. By adding the translation, the *Suda On Line* opens itself up to a wider, even the general, public. Searching through the database and looking at how every entry is structured and revised, one discovers how the revision progressed over the years, becoming almost never-ending.

³²<http://www.stoa.org/sol/> Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. Accessed 11 September 2016.

An interesting example is entry 988, Τρίμμα, analyzed when examining the word πολύκροτον, a variant in the first line of the *Odyssey*³³. Firstly, considering only the secondary sources on the variant πολύκροτον, the entry was only connected to the Scholia to Aristophanes' *Nubes*. By looking at the *Suda On Line*, we can extend the correlation with other authors, Photius (tau454 Theodoridis), Hesychius tau1402 (and Pollux 6.18) and Athenaeus, *Deipnosophists* 1.31E (= 1.57 Kaibel). There is also an annotation reporting: "the orthodox version of the *Odyssey* has πολύτροπον and not this πολύκροτον" (*Suda on Line* entry 988). The entry respects Adler's standard printed edition, following its numerical system, but provides more information about the connections to other texts: Potius and Hesychius are not cited in the Adler edition. On the other hand, it does not include any critical apparatus, so, if the *apparatus criticus* needs to be consulted, the only reference is to Adler's printed edition.

Later in the dissertation we shall discuss whether it may be possible to use a method similar to that of the *Suda On Line* in the "Comprehensive Odyssey". It is difficult to say at this point in time whether it could be a course worth pursuing, but it is definitely worth looking into, given the amount of material considered in the initial conception of the "Comprehensive Odyssey".

2.6 The *Homer Multitext*.

It is not easy to explain what the *Homer Multitext*³⁴ is attempting, but it becomes clearer by looking at the website. Here there is detailed information on how the infrastructure works, even more now that the project has been opened up by creating a set of templates and tools to help contributors who will run them in a virtual machine. To be opened to external contributors is a positive step forward for a project that aims to spread the textual transmission of the entire *Iliad* and *Odyssey* set within an historical framework. This project has also helped to create a new system for handling citations and links in classical studies, Canonical Text Services.

In order to assess the *Homer Multitext* fairly, we should make a distinction between the technical aspects and the ideology behind its foundation. It is almost unquestionable that what its editors have been achieving from a technical point of view will be used by classics scholars who are, and will be, dealing with different authors and different kinds of works. The notion of Multitext, of not reconstructing one text but

³³ See chapter 5.3 and appendix 2.

³⁴ <http://www.homermultitext.org/index.html> Creative Commons Attribution-ShareAlike 4.0 International license. Visited on the 10th August 2014.

various ones from different times and places, is what is, and can be, questioned. However, it is not this concept that creates difficulties since reconstructing the Homeric text read at a certain time and in a specific place may lead to some very interesting discoveries.

The scholars working on the *Homer Multitext* address the Homeric Question from a different perspective, by working on a better understanding of the transmission of the poems than what can be achieved via a printed critical edition. In the previous chapter we discussed the relationship between orality and the digital medium and we stressed how the two could help each other from the point of view of users/readers and authors/rhapsodes. This project is one way of looking at this relationship, focusing mainly on the concept of oral composition in performance. The editors of the *Homer Multitext* are right to stress that a printed edition will give the impression that a text can be retrieved and that the other readings are alternative readings with their place only in the critical apparatus, as if the poems were like any other text born in writing. As was previously mentioned, there are differences between the composition of a work that originates in a dialectic exchange between the rhapsode and the listener and one where the accent is on single, private reading. The editors believe that the digital medium can represent better the notion of multiple performances and different texts, while the established methods of printed critical editions work better for recovering a text born in writing. Dué and Abbott (2009) define the Homeric poems as works for which the author is not retrievable and whose variations reproduce the characteristics of the language that describes oral composition in performance. The authors, following Lord (1995, p. 23), employ the term *multiform* to recognise multiple versions of the same notion which, if “metrically and contextually sound” (Dué-Abbott, 2009, par. 8), could be variations from different performances. Making each of these variants available in its own context permits every user/reader to place them correctly within the Homeric tradition. The editors of the *Homer Multitext* present this tradition in a dynamic way, not in the static form of the printed page. They look at it focusing on the changes from a diachronic perspective, using as a starting point the evolutionary model described by Nagy (Chapter 1.4). They test whether the Multitext can help understand better which, in Nagy’s words, are the most fluid and also the most formative phases in the tradition. In their opinion, the potentiality of the notion of *multiformity* is its appeal both to the concept of oral composition in performance and to the written tradition. The *Homer Multitext* can provide a new way of dealing with the tradition, via “collaboration, open access and interoperability” (Dué-Abbott, 2009, par. 33). The notion they stress above

all is open access, which they believe “is in the best interest of all who work in the humanities to embrace... Doing so is a matter of survival for our field in particular” (Dué-Abbott, 2009, par. 36).

If we think about attributing the same importance to every variant, then the structure of the *Homer Multitext* serves this purpose, but it seems that, as it now stands, the publication lacks the evaluation of the single variants. This is the main problem from a classical point of view, i.e. the fact that its editors are not thinking of creating a critical edition from the material they are editing. Not producing a critical edition is not a problem per se, but it means that the editor is partly abdicating his/her role of judging the edited material. The editor gives an opinion based on his judgement and experience and defends it. The issue does not concern paying the same importance to each variant but stopping at this point, which may not seem very important while looking at a digital project. This becomes even more evident as soon as the notions underlying the *Homer Multitext* are used to produce an edition in the printed medium, perhaps because one's attention is influenced by the habit of looking at printed critical editions. This is the case of the book by Dué and Ebbot, 2010, *Iliad 10 and the Poetics of Ambush, a Multitext Edition with Essay and Commentary*. It is an example of how the digital and the printed media differ and of how transferring into the printed medium what was produced for the digital may seem incongruous, even if it is clear from the very title that this is not a traditional critical edition. The editors do not provide one text alone, but many, and there is not one single text from which one can start reading. There are four essays and four texts, each followed by a commentary: *Iliad* papyrus 609 (Mertens-Pack 864.1; P.Mich. 6972), papyrus 425 (Mertens-Pack 855.1; P. Berol. Inv. 11911 + 17038 + 17048 + 22155), papyrus 46 (Mertens-Pack 658; P.Cairo Maspero inv. 67172-4 + P.Berol. inv. 10570 + P. Strasb. inv. G 1654 + P. Rein. 2.70), Venetus A (Marcianus Graecus Z. 454 [=822]). After the four texts the authors add a general commentary based on all four works. The editors specify (pp. 153-166) that they are adopting a Multitext approach because they are dealing with a work originating in the tradition of composition during oral performance. They hence argue that it is impossible to recover the written composition of one specific author. In their opinion, every variant might be the result of a choice made by a singer during a performance. They further realize that the digital medium is best for dealing with this view of the tradition because it gives the user/reader the chance to look at a variant exactly where it occurs, not as a note in an apparatus. In this printed edition, they were trying to free themselves from the constraints of setting multiformity on the printed page, which means placing the

material in the apparatus. Therefore, they were obliged to repeat some comments in more than one place, restricting themselves to four witnesses. Their aim was to offer a glimpse into the differences in the text at different times, setting every witness within its cultural framework. They wanted to retrace the evolution of the Homeric text from the uniformity of the medieval transmission back to the relative instability of the previous stages in its transmission, following the notions expressed by Nagy³⁵ on the history of the Homeric poems, which he describes from a diachronic perspective. This printed edition clearly explains the foundation stones of the *Homer Multitext*, and it helps to understand how the digital medium can handle such a large number of witnesses better than the printed one. How classics scholars evaluate this edition depends on the fact that they are accustomed to dealing with standard printed critical editions. The latter produce only one single text as their final result, or rather, it is at least possible to read that text alone in them. Whenever other texts are included in the same publication, they are often treated as appendices.

In the *Homer Multitext*, the editing of the *Iliad* manuscripts involves the publication of palaeographic samples, an index of the lines referring to default images, an inventory of the scholia found on every manuscript page and TEI/XML diplomatic editions of the *Iliad* and of the scholia. In 2014, the editors added a virtual machine as a general tool to every contributor/editor. To use this virtual machine, every editor must have a validating XML editor, a cost-free account on GitHub³⁶, a command-line git client, vagrant³⁷ and virtualbox³⁸. This is a great step forward. It offers the opportunity to share the editorial work via a shared directory on one's personal computer. It will always be possible for anyone, wherever s/he is, to edit the work produced with any material made available. The *Homer Multitext* emphasizes “collaborative research (we are particularly interested in undergraduate research), openly licensed data, and innovative uses of technology”. Thus far seven institutions have started contributing, but the editors will experiment “a distributed approach to our collaborative editorial methods” trying to involve a greater number of contributors for as long as the work continues (*Homer Multitext* Home Page).

What is more important is the introduction of Canonical Text Services (CTS) as a means of quotation in a digital context. This is an example of the citation of the marginal scholia of the manuscript “Venetus A: Marcianus Graecus Z. 454 (= 822)”:

³⁵ See Chapter 1.4.

³⁶ <https://github.com>

³⁷ <http://www.vagrantup.com/downloads.html>

³⁸ <https://www.virtualbox.org/wiki/Downloads>

urn:cts:greekLit:tlg5026.msA.hmt:1.1. urn:cts identifies the string as a URN (“Uniform Resource Name...serve as persistent, location-independent, resource identifiers” *Homer Multitext*, An overview of the CTS URN notation web page) for canonical citations. After urn:cts we find two identifiers, greekLit:tlg5026.msA., one of the authorities that creates the schema, greekLit and one of the works cited, tlg5026.msA. At the end there is a string referring to a passage of the cited work, hmt:1.1 (Berti et al., 2014³⁹). CTS is also used together with the Collections, Indexes and Texts architecture (CITE), a framework that allows URNs to be used as a new means for referencing citations. This protocol is used in the *Homer Multitext* to retrieve and cite all the material published on the web site, without excluding any document or image.

The CTS architecture originates in the studies on collecting fragmentary authors, which could be considered printed hypertexts transferred into the digital medium with the goal of commenting and linking them to the original sources. These studies needed an infrastructure that allowed for dynamic quotations unifying the logical and the physical layers of the text in connection with both printed editions and manuscripts. CTS unites the work cited and its citation, drawing inspiration from the Functional Requirements for Bibliographic Records (FRBR) and the Ordered Hierarchy of Citation Objects (OHCO2) models, as stressed in the repository of the information for the CTS URN architecture of the *Homer Multitext*. The OHCO2, developed by Smith and Weaver in 2009, echoes the Ordered Hierarchy of Content Object developed by DeRose and al. in 1990, working for content that comes from different hierarchies⁴⁰, mainly citations. It looks at the text as a group of citation nodes and could be implemented as a tabular structure, a tree and a general directed graph. These are the properties of the OHCO2 as described in the abovementioned repository: “each node belongs to a citation hierarchy, each node belongs to a work hierarchy, nodes are ordered within a single text, nodes may have richly structured textual content”.

One of the aims of the *Homer Multitext* is to provide the scholia in context, not putting them together in a single edition. Smith (2009) stresses that modern printed publications regroup the scholia under the single lines of the poems, removing traces of the context of their original publications. In his opinion, this is not new but follows a general tendency that started at the time of the transition from the papyrus roll to the codex when independent scholarly material on the poem was put together either in full or in an abbreviated way, surrounding a different text to the one the commentaries

³⁹<http://www.homermultitext.org/hmt-docs/cite/cts-urn-overview.html> Last visited on the 2nd December 2014.

⁴⁰<http://cite-architecture.github.io/ohco2/>. Last visited on the 4th October 2016.

referred to. The FRBR define four categories for bibliographic entries: work, expression, manifestation and item, which go from the idea of a poem to a specific copy of it. These need to be combined with a citation of the logical structure of a text, described by DeRose and al. in 1990 as Ordered Hierarchy of Content Objects. CTS combines an identifier of a text with the identifier of a specific passage in that text. The CTS identifiers are, for the most part, the canonical numberings that derive from printed editions. These numberings are nothing but interpretations of texts that, despite originating in the Hellenistic period, became more stable with the printing press. They are in the last portion of every URN CTS, called the “passage component” (Kalvesmaki, 2014, par. 23), and they should follow a predetermined standard in every publication. They can relate either to the object or to the semantic ideas giving the structure to a text, such as indications on chapters and paragraphs. Following Kalvesmaki’s opinion, there are two types of canonical numberings, object-based, referring to the specific object that carries the text, and semantic-based, referring to the internal structure of a work (2014, par. 33). As we have explained, CTS focuses on hierarchical models which, despite being dependent on the FRBR, need to be singularly chosen for every project. A semantic numbering can achieve a higher degree of specificity, but its production should be unambiguous, so that those who produced it and those who may use it will interpret it in the same way. This question of the references to be employed in the CTS architecture is the basis of an article by Robinson (2015) on developing a system for the representation of texts, works and documents, the DET (Documents, Entities and Texts). In his opinion, a document is the material object that carries the marks the reader recognizes as text. The text “is not simply the marks in the document. It is the communicative act that I, the reader, identify as represented by those marks” (Robinson, 2015). A work is a set of texts connected by the communicative act they represent. Robinson tries to combine the two notions of text as marks and text as a communicative act. He elaborated the DET, where the entities represent “the unique labels we give each component of a communicative act” (Robinson, 2015) and “a text of any one communicative act on any one document is the collocation of the entities and of the document for that text” (Robinson, 2015). Robinson is well aware of the similarities between DET and CTS. Nevertheless, in his opinion, the DET is worth developing because he believes that the amount of information that can be expressed in DET cannot be implemented in CTS. He considers CTS as a “labelling scheme, with some

hierarchical elements, and relies on external index files” (Robinson, 2015). The abovementioned notions are at the core of the Textual Communities implementation.⁴¹ Despite all the positive aspects highlighted, Robinson understands the limitations of such a system, which are inherent to its use of XML and TEI which allow for the representation of only one hierarchy. This description of the notions behind the DET infrastructure demonstrates that the problem of how to encode and represent the various subdivisions of a text is widely recognized and examined. We do not wish to say that one system works better but merely that there should be only one implementation, avoiding divisions which, in the long run, merely create difficulties in the sharing and linking of different projects.

To return to the *Homer Multitext*, its most important interface is an internal manuscript browser that makes use of the CTS/CITE citation protocol, whereby a user can search in every manuscript digitized and encoded in the project, either starting from a manuscript page or from a line of the *Iliad*. It also allows the user/reader to read the scholia by “looking up by full URN reference for an *Iliad* passage (including MS)” (*Homer Multitext* Browse Manuscript web page). The result of the latter search is a page that offers two results: firstly, a diplomatic edition of all the scholia to book..., line..., and, secondly, a glimpse of the exact locus in the manuscript where each one is to be found. The diplomatic edition and the facsimiles are each assigned a specific urn:cts. This is in accordance with this project’s Multitext approach because, by attributing a unique identifier to every object, the editors treat them all as being of equal importance. Using the CTS citation method and the CITE framework, they found a way of making their editorial approach explicit, thus all the material provided can be cited and located. Another available tool is a page with a catalogue of the archived material, data collections, image collections and editions, together with links to the contents described. If one looks at the editions and at their encoding, it can be seen that the editors encode all the words referring to people and places singly so that they may be of further use, for example in an index of data.

⁴¹ www.textualcommunities.usask.ca Accessed 6 October 2015.

Digital services from the Homer Multitext project
[HMT: home](#) | [HMT Digital: home](#) | [browse MSS](#) | [scholia](#)

Browse manuscripts

Start from MS page

Page URN [See facsimile](#)

Start from *Iliad* line

book:line [See occurrences](#)

Read scholia

Look up by full URN reference for *Iliad* passage (including MS)

Text passage URN [See texts](#)

Other utilities

- See an automatically generated [summary of archival material](#) (with links to browse contents)
- [Look up material by URN](#)

Software version: hmt-digital 1.0.1. Data set in this service: 2014.1 publication of the Homer Multitext project archive. citeservlet is free software developed by Christopher Blackwell and Neel Smith

Figure 15: Homer Multitext Manuscripts Browser

HMT Digital: Scholia Reader

8 Scholia for 1.1

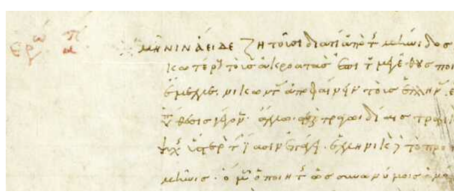
Manuscript urn:cts:greekLit:tlg0012.tlg001.msA:1.1

Homer epic *Iliad* A

§1
 Ἰλῆην ἄειδε θεὰ Πηνελόπειάδε Ἀχιλλεύς
 (urn:cts:greekLit:tlg0012.tlg001.msA:1.1)

Scholia to the *Iliad* Main marginal scholia msA

§1
 Ἰλῆην ἄειδε
 Ἰλῆην οὐκ ἀπὸ τῆς μῆνης ἤρξατο οὕτως δυσφήμου ὀνόματος· δια δύο
 ταῦτα· πρῶτον μὲν ἵν' ἐκ τοῦ πάθους ἀπακαταφύεσθαι τὸ τοιοῦτο μῦθον τῆς
 ψυχῆς καὶ προσεκτικότερος τοῖς ἀκούσασιν ἐπὶ τοῦ μεγέθους ποιῆσαι καὶ
 προσεβίβη φέρεται γενναίως ἡμᾶς τὰ πάθη, μέλλον πολέμου ἀπαγγέλλειν
 δεύτερον, ἵνα τὰ ἐργάματα τῶν Ἑλλήνων πιθανότερα ποιῆται· ἐπεὶ δὲ ἐμελλε,
 νικῶντας ἀποφαίνεσθαι τοὺς Ἕλληνας, εἰκότως οὐ κατατρέχει ἀξιοποτότερον
 ἐκ τοῦ μὴ πάντα χαρίζεσθαι τῷ ἐκείνῳ ἐπαινῷ· ἤρξατο μὲν ἀπὸ μῆνης
 ἐπειπερ αὕτη τοῖς πρακτικοῖς ὑπόθεσις γέγονεν· ἄλλως τε καὶ τραγῳδίας
 τραγῳδῶν ἐξέθηκε προσώμων· καὶ γὰρ προσεκτικὸς ἡμᾶς ἡ τῶν ἀτυχημάτων
 διήγησις ἐργάζεται· καὶ ὡς ἄριστος ἱατρός, πρῶτον ἀναστέλλων τὰ νοσήματα
 τῆς ψυχῆς ὑπερτον τὴν ἰσάν ἐπάγει. Ἑλληνικὸν δὲ τὸ πρὸ τέλει τὰς ἡδονὰς
 ἐπείγειν· ὅτε δὲ, ὥσπερ ἐπὶ συλῆς πρῶτον μὲν ἔστιν ὀλκός· εἴτα φάλαξ
 οὐκὼν ἰσχύς, οὕτω πρῶτον ὀργή· θυμὸς· χόλος· κότος· μῆνις· ὅμοιος ὁ
 ποιητὴς ὡς συνονόμους ὀνόμασεν ἐπὶ Ἀχιλλεύς· χολῶν· ἢ ἐχολῶν· ἢ παύσασθαι,
 ἐρητῶσαι τε θυμὸν· urn:cts:greekLit:tlg0012.tlg001:1.192· “οὐδ' ὀδομα
 κοτέοντος”· urn:cts:greekLit:tlg0012.tlg001:1.181·, “αὐτὰρ ὁ μῆνις νηυσὶν”
 urn:cts:greekLit:tlg0012.tlg001:1.488·
 (urn:cts:greekLit:tlg5026.msA.hmt:1.1)



(urn:cite:hmt:vaimg_VA012RN-0013460.09125620.0.11955275.0.70064910.0.06999404)
 Venetus A: Marcianus Graecus Z. 454 (= 822), folio 12, recto.
 This image was derived from an original ©2007, Biblioteca Nazionale Marciana, Venezia, Italia. The
 derivative image is ©2010, Center for Hellenic Studies. Original and derivative are licensed under the
 Creative Commons Attribution-NonCommercial-Share Alike 3.0 License. The CHS/Marciana Imaging
 Project was directed by David Jacobs of the British Library.
[Cite & Quote Image](#)

Figure 16: Scholia Viewer

In their 2014 article on Canonical Text Services, Berti et al. place great emphasis on the new developing features of digital editions which require “identifying precise words and phrases in particular versions of a work” (2014, p. 3). The CTS/CITE architecture might well provide this capacity. The new characteristics underlined by the authors are: 1) Translators will be aware that their translation will be aligned to the original, thus helping to extend the accessibility of the source text beyond the users/readers of the original text. 2) Editors will publish multi-texts that will “encapsulate the entire textual history of a work...variants from the manuscript tradition but also variations across editions over time” (2014, p. 4). 3) Editors will encode the morpho-syntactic functions of every word, thus sustaining modern linguistic analysis and a new form of reading. 4) Editors will annotate all proper names and connect them

with existing authority lists. 5) Editors will annotate every instance of “textual reuse”, quotations and paraphrases.

Looking at the encoding process, what is striking here is the third point, i.e. the encoding of the morphological and syntactical function of every word. Berti et al. (2014) point out that, given that the editor should already think about every word while producing the edition, adding morpho-syntactic functions should require less extra time. This would be the case if editors were working on born digital critical editions, but the question is whether it would also be the case for editions encoded from pre-existent printed critical editions. Moreover, in this way, it is as if the file with the encoding had the maximum information available and every other question were to be solved at the visualisation stage. Editors should not to be carried away by the amount of data that can be encoded. The question is twofold. First, there is the XML holding the encoding and the information it provides, so the editor will deal with the information at visualisation stage. Second, the editor needs to decide on the characteristics to be recorded and encoded, understanding the text and its features, the estimated costs for its completion and the purpose of the edition. The latter concept combines the needs of the editors and the needs of the users/readers envisaged for the edition (Pierazzo, 2011).

The *Homer Multitext* does not carry out this kind of meticulous encoding in such detail at this stage. The *Homer Multitext* cannot be considered a critical edition of the Homeric poems; it is a repository of what can be retrieved at present of the transmission of the poems, while certainly casting new light on how the scholia might be edited digitally. The way in which they are perceived is completely different from any other edition because they are seen in context, in the same way as the editor of a printed critical edition sees them while looking at manuscripts, gathering the material for a critical edition. It might be suggested that the scholia, as published in the *Homer Multitext*, should somehow be connected to a critical edition. It seems that an edition of the Scholia with no critical apparatus and reference text does not provide all the information about the text that it might. The aim of this dissertation is to look at the tradition of the poems and enquire into whether it may be possible to produce a digital critical edition of all of its material. The abovementioned projects are a good starting point, and the *Homer Multitext* in particular should not be cast aside but implemented within another project. This could be achieved via CTS because it provides a univocal numbering for every source, which could then be connected to the point in a critical edition where it is transcribed. We could then link different projects by connecting them only to the precise digital passage or object required. We shall describe below in this

dissertation how we envisage the “Comprehensive Odyssey” and the role the CTS technology may play in its structure. To employ the *Homer Multitext* in the aforementioned way would mean choosing to ignore the framework proposed by Nagy, which provides the theoretical foundations for this project.

The problem is whether the material included in the *Homer Multitext* could be used within a different framework, even if the original rationale is questioned. The notion expressed is that the material collected in the *Homer Multitext* could also help to create a digital critical edition but, if it were used to achieve such a goal, it would conflict with the opinion that looking for the best recoverable text should not be the ultimate goal when analysing the tradition of the Homeric poems. The way the material is presented in the *Homer Multitext* offers an historical perspective to the study of the poems, but this does not mean that this approach should not lead to a critical edition. Be that as it may, the loss of a reference text and of the critical apparatus seems far more important than querying the Multitext framework. By considering the *Homer Multitext* a repository, it is obvious from a philological viewpoint that it holds much of the background material of a critical printed edition. It is true that its main goal is to look at this material as a way of understanding better the composition of the poems and their multiform aspect. This role should not be lost. We stressed in the previous chapter how understanding orality could help grasp certain characteristics of digital editions such as collaboration and an exchange of notions. What we state here is that we should not stop at this stage, however important it might be considered, or, at least, we should not consider the *Homer Multitext* as a project enclosed in itself. A beneficial aspect of a XML/TEI/CTS repository is that every source in it could be linked in a mutual way to other projects, even if their goals differ. The “Comprehensive Odyssey” we worked on aims to provide not only the secondary sources and the scholia but also a text of the *Odyssey* with the critical apparatus at the same time. Our project would benefit from being linked to the transcriptions of the scholia and the images provided by the *Homer Multitext*, connected to the critical apparatus of our encoding of the scholia. The critical apparatus is where the editor expresses his/her editorial judgement in a printed critical edition, and there is no reason to believe that it should not be the same for a digital critical edition, even if the information it carries may be treated differently and dealt with in a form that is unlike that of a printed critical apparatus.

The concept behind the *Homer Multitext*, i.e. that a tradition as complex as that of the Homeric Poems could not be dealt with by using the Lachmannian method, is the most challenging aspect of this project. The Multitext theory and the unitext theory

were analysed in detail in Chapter 1.6. We understand that following an historical framework when studying the Homeric poems might change the way in which certain problems are tackled. It seems that both the unitext and the Multitext theories have been stretched to their utmost limit by both West and Nagy: by West because he arrives at the point of talking about a definite poet at the outset of the Homeric tradition, and by Nagy because he assigns the same importance to every witness in the tradition. While it is not possible to recover one text for each of the poems, to attribute equal importance to every source appears to be a questionable choice. The sources are from different periods and they do not always bear the same authority; for example, views differ with regards to the manuscript tradition and the scholars of the Alexandrian school (see Chapter 1.6). Moreover, as the analysis of the secondary sources will show, certain authors are known only through indirect quotations. It seems that every text can have hidden implications which might change one's opinion of that particular work and its value in the tradition.

The editors of the *Homer Multitext* think about “variations as parts of the system” (Dué-Ebbott, 2009, par. 8), and whenever a variation is metrically and contextually sound, it should be thought of as one of the possibilities a singer had while composing in performance and not as an interpolation or a mistake. They prefer to discover the distinctive shades that every multiform can cast upon a scene and its place in the tradition. In this way, every source remains at the same level as every other one. They give the user/reader the chance to comprehend relationships by “placing each in its historical and cultural framework” and not “giving the false impression that they are all of the same kind and same time” (Dué-Ebbott, 2009, par. 14). It should not always be the case that reporting all the variants means treating them all in the same way, but the lack of critical apparatus in the *Homer Multitext* implies this. It seems that this material could be then the starting point for further study, as the editors suggest. This is why van Thiel's prospect seems so intriguing in comparison. His considering almost only medieval manuscripts for his edition restricts the analysis to a specific timeframe, yet does not dismiss a critical framework. It seems that his edition may be a starting point from which to initiate a more detailed analysis of both the unitext and the Multitext viewpoints. Van Thiel's edition offers a critical view of the medieval manuscripts, which is why it was used as a reference text by the *Chicago Homer* and for Tebben's *Concordantia Homerica* (1994). It may be criticised but it undoubtedly provides a text that can be a basic text for a project that will also deal with the scholia and the secondary sources (see Chapter 1.7). The *Homer Multitext* is expanding the understanding of the Homeric tradition, stressing the importance of looking at

manuscripts along with their structure. Moreover, it is a highly collaborative project, helping to encourage contributions in the Classics. Despite all the criticism of its framework, it is a highly regarded project that may help to shape the research on other ancient authors and works. The *Homer Multitext* is seen by Crane⁴² (2014) as an example of “citizen science”, an environment where the focus is on what contributors achieve and where every new challenge will enhance their skills and play an active part in their learning. Furthermore, the project is a good example of how collaboration helps not only to attain goals but also to give something back to the project, perhaps reshaping it. For these reasons, whatever one’s opinion of the concept of Multitext, the *Homer Multitext* should be regarded as an important on-going achievement.

2.7 WordHoard.

In order to understand better the data behind the *Chicago Homer* and *Eumaios*, we should look at the application and philological tool *WordHoard*. First, *WordHoard* is a Java desktop application produced at Northwestern University, as are the *Chicago Homer* and *Eumaios*, which needs to be saved on the end-user’s computer. Every time *WordHoard* is opened, a connection is established to a website to upload the data that form its corpus: Early Greek Epic, Chaucer, Spencer and Shakespeare. The application applies corpus linguistics techniques to this material, which it can do because such texts have been annotated according to morphological, lexical, prosodic, and narratological criteria. This application attributes importance to a close analysis of words and to understanding how they are used. The editors stress the importance of the user interface, stating that it will guide the user when surfing the concordances and the material selected for visualization.

⁴²Gregory Crane: *Opening up Classics and the Humanities: Computation, the Homer Multitext Project and Citizen Science*, Tufts University, Department of Classics September 2014. <https://docs.google.com/document/d/13WisEgNRBsRRRmgbx7e9nfDcUIDeBC-ltqpuVqoKK7Q/edit?pli=1#heading=h.i7knch2mocdz> Last visited on 4 November 2014.

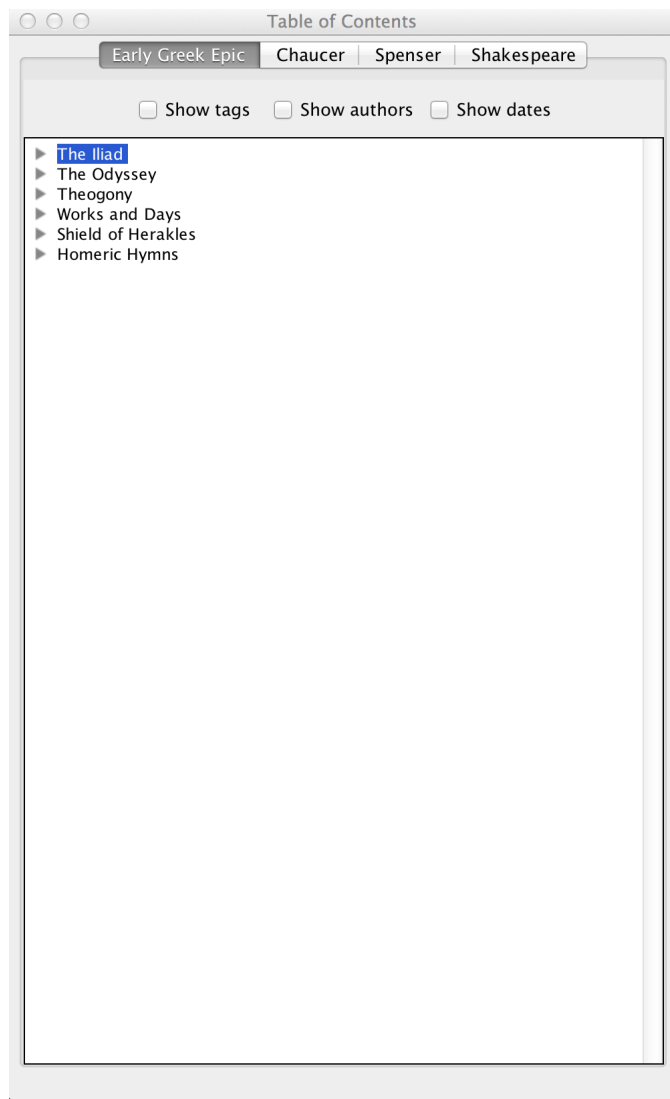


Figure 17: *WordHoard* table of contents

The Iliad

Book 1

Book 1

- μήνιν ἄειδε θεὰ Πηληϊάδεω Ἀχιλῆος
SING, goddess, the anger of Peleus son Achilleus
Singe den Zorn, o Göttin, des Peliden Achilleus,
mēnin aēide thea Pelēiadeō Achillēos
110-121 122-210-221 222-310 320-410-421-422-510 521-522-610-620
- οὐλομένην, ἣ μυρ' Ἀχαιοῖς ἄλγε' ἔθηκε.
and its devastation, which put pains thousandfold upon the Achaians,
Ihn, der entbrannt den Achaisern unennbaren Jammer erregte,
oulomenēn, hē myr' Achaiōis alge' ēthēke,
110-121-122-210 220 310-321 322-410-420 510-521 522-610-620
- πολλὰς δ' ἰφθίμους ψυχὰς Ἄϊδι προΐαγεν
hurled in their multitudes to the house of Hades strong souls
Und viel tapfere Seelen der Heldenöhne zum Ais
pollas d' iphthimous psuchas Aidi proiagen
110-120-210 220-310 321 322-410-421-422-510 521-522-610-620
- ἦρώων, αὐτοὺς δὲ ἐλώρια τεύχε κύνεσσιν
of heroes, but gave their bodies to be the delicate feasting
Sendete, aber sie selbst zum Raub darstellte den Hunden,
hērōon, autous de helōria teuche kunessin
110-120-210 220-310 321 322-410-421-422-510 521-522-610-620
- οἰονοιοῖτε πάσι, Διὸς δ' ἐτελείετο βουλή,
of dogs, of all birds, and the will of Zeus was accomplished
Und dem Gevögel umher. So ward Zeus Wille vollendet:
oiōnoioi te pasi, Diōs d' eteleieto boulē,
110-120-210-221 222 310 321 322-410 (421) 421-422-510-521-522
610-620
- ἔξ οὗ δὴ τὰ πρῶτα διαστήτην ἐρίσαντε
since that time when first there stood in division of conflict
Seit dem Tag, als erst durch bitteren Zank sich entzweiten
ex hou dē ta prōta diastēten erisante
110 120 210 220 310-321 322-410-420-510 521-522-610-620
- Ἀτρεΐδης τε ἀναξάνδρῳν καὶ διὸς Ἀχιλλεύς.
Atreus' son the lord of men and brilliant Achilleus.
Atreus Sohn, der Herrscher des Volks, und der edle Achilleus.
Atreidēs te anax andrōn kai dios Achilleus.
110-121-122-210 221 222-310 320-410 420 510-521 522-610-620
- τίς τ' ἄρ σφωε θεῶν ἔριδι ξυνέηκε μάχεσθαι;
What god was it then set them together in bitter collision?
Wer hat jene der Götter empört zu feindlichem Hader?
tis t' ar sphōe theōn eridi xunēeke machesthai;
110 (120) 120 210-221 222-310 321-322-410 421-422-510-521
522-610-620
- Ληϊτοῦς καὶ Διὸς υἱός· ὃ γὰρ βασιλῆϊ χολωθεῖς
Zeus' son and Leto's, Apollo, who in anger at the king drove

Annotations

Iliad Scholia
2 of 1037
1 of 11 in line

I a. Μήνιν ἄειδε: ζητοῦσι, διὰ τὴ ἀπὸ τῆς μήνιδος ἠρξάτο, οὕτω δυσφήμου ὀνόματος, διὰ δύο ταῦτα, πρῶτον μὲν, ἵν' ἐκ τοῦ πάθους ἱάποκαταρρέουσι τὸ τοιοῦτο μόριον τῆς ψυχῆς καὶ προσεκτικώτερος τοὺς ἀκροατὰς ἐπὶ τοῦ μεγέθους ποιήσῃ καὶ προεθίσῃ φέρειν γενναίως ἡμᾶς τὰ πάθη, μέλλον πολέμους ἀπαργέλλειν· δεύτερον δέ, ἵνα τὰ ἐργάματα τῶν Ἑλλήνων πιθανώτερα ποιήσῃ. ἐπεὶ δὲ ἐμελλε νικῶντας ἀποφαίνειν τοὺς Ἑλλήνας, εἰκότως τοῦ κατατρέχει ἀξιοπιστότερον ἔκ τοῦ μὴ πάντα χαρίζεσθαι τῷ ἐκείνων ἐπαίνῳ. Ἰ ἠρξάτο μὲν ἀπὸ μήνιδος, ἐπεὶ περ αὐτῇ τοῖς πρακτικοῖς ὑπόθεσις γέγονεν· ἄλλως τε καὶ τραγωδίαίς τραγικὸν ἐξεύρε προοίμιον· καὶ γὰρ προσεκτικὸς ἡμᾶς ἡ τῶν ἀνυχημάτων διήγησις ἐργάζεται, καὶ ὡς ἀριστος ἱατρός πρῶτον ἀναστέλλων τὰ νοσήματα τῆς ψυχῆς ὑστερον τὴν ἴαριν ἐπάγειν. Ἐλληνικὸν δὲ τὸ πρὸς τέλος τὰς ἡδονὰς ἐπάγειν. Ἰ ἰστέον δέ· ὥσπερ ἐπὶ συζῆς πρῶτον μὲν ἐστὶν ὀλυνθος, εἰτα φήληξ σῆκον ἰσχός, οὕτω πρῶτον ὀργή, θυμὸς χόλος κότες μῆνης, ὁμῶς ὁ ποιητὴς ὡς συνωνύμους ὀνόμασιν ἐπὶ Ἀγλλέως χροῖται· „ἡὲ χόλον παύσειεν ἐρητύσειε τε θυμόν“ (A 192)· „οὐδ' ὄθομαι κοτέοντος“ (A 181)· „αὐτὰρ ὁ μήνιν νηυσὶ παρήμενος“ (A 488). AT

Figure 18: WordHoard Visualisation

Search Results 1

corpus = Early Greek Epic, spelling = πάντας (case and diacritical insensitive)
138 words found in 0.8 seconds

Group by: Work Order by: Frequency Descending

▼ 58 matches (6.66) in Odyssey

00.1.299: κλέος ἔλλαβε διὸς Ὀρέστης/πάντας ἐπ' ἀνθρώπους, ἐπει ἔκτανε.
00.2.91: θυμὸν ἐνὶ στήθεσιν Ἀχαιῶν/πάντας μὲν ῥ' ἔλπει καὶ ὑπίσχεται
00.2.174: πολλὰ παθόντ', ὀλέσαντ' ἀπὸ πάντας ἐταίρους./ἄγνωστον
00.2.284: σπονδὰς οὐκ ἔστιν, ἐπ' ἡμεῖς πάντας ὀλέσθαι, σοὶ δ' ὀδὺς οὐκέτι
00.2.330: ἐν δὲ βάλῃ κρητὴρ καὶ ἡμᾶς πάντας ὀλέσσει./ἄλλος δ' αὐτ' εἰπεσκε
00.3.86: ἐξαπατάσει./ἄλλους μὲν γὰρ πάντας, ἴσοι Τρωσὶν πολέμωζον./
00.3.137: δὲ καλεσσάμενον ἀγορήν ἐς πάντας Ἀχαιοὺς./μήψ, ἀτὰρ οὐ κατὰ
00.3.141: ἐνθ' ἦτοι Μενέλαος ἀνώγει πάντας Ἀχαιοὺς/νίστου μνηστήκεσθαι
00.3.191: Πηλεΐωνα ἀγαθὸν υἱόν/πάντας δ' Ἰδομενεὺς Κρήτην εἰσήγαγ'
00.3.372: φηγὶ εἰδομένη θάμβος δ' ἔλε πάντας Ἀχαιοὺς./θαύμαζον δ' ὁ
00.3.424: μεγαθύμου νῆε μελαιναν/πάντας ἰὼν ἐταίρους ἀγέτω, λιπέτω
00.4.100: ἱπποβότοιο./ἀλλ' ἔμμεης πάντας μὲν ὀδυρόμενος καὶ ἀχέουω/
00.4.288: κρατερῆσι, σώσας δὲ πάντας Ἀχαιοὺς./τόφρα δ' ἔχ', ὄφρα
00.4.775: μὲν ὑπερφύλους ἄλεσθε/πάντας ὁμῶς, μὴ ποῦ τις
00.8.93: γόασκεν./ἐνθ' ἄλλους μὲν πάντας ἔλάνθανε δάκρυα λείβων./
00.8.127: δ' αὐτ' Εὐρύαλος ἀπὸ καίνυτο πάντας ἄριστους./ἄλματι δ'
00.8.532: εἰβεν./ἐνθ' ἄλλους μὲν πάντας ἔλάνθανε δάκρυα λείβων./
00.9.376: εἴως θερμαινέτο ἔπεισι δὲ πάντας ἐταίρους/θαύρανον, μὴ τίς μοι
00.9.422: λίσσεν δ' ἔμοι αὐτῷ/εὐρύομαι· πάντας δὲ δόλους καὶ μῆνιν ὑπερνεύ/
00.9.534: ὁπὲ κακῶς ἔλθοι, ὀλέσας ἀπὸ πάντας ἐταίρους./νηὸς ἐπ' ἄλλοτρησι
00.10.203: αὐτὰρ ἐγὼ δίχα πάντας εὐκνήμιδας ἐταίρους/ἠρίθμεον
00.10.430: Εὐκνήμιδας ἐταίρους/ἠρίθμεον

The Odyssey

Book 1

Kinderwerke dir nicht, du bist dem Getändel entwachsen.
nēpiās ochein, epei ouketi telikos essi.
110-121-122-210 221-222-310 321-322 410-421-422 510-521-522
610-620

ἢ οὐκ αἶεις οἶον κλέος ἔλλαβε διὸς Ὀρέστης
Hast du nimmer gehört, welch ein Ruhm den edlen Orestes
e ouk aieis hoion kleos ellabe dios Orestes
110 110 121-122-210 220-310 321-322 410-421-422 510-521
522-610-620

πάντας ἐπ' ἀνθρώπους, ἐπεὶ ἔκτανε πατροφονῆα,
Unter den Sterblichen preist, seitdem er den Meuchler Agisthos
panias ep' anthrōpous, epei ēktane patrophōnēa.
110-121 122 210-220-310 321-322 410-421-422 510-521-522-610-620

Αἰγισθον δολόμην, ὅς οἱ πατέρα κλυτὸν ἔκτα;
Umgebracht, der ihm den herrlichen Vater ermordet?
Aigisthon dolōmēn, hos hoī patera kluton ēkta;
110-120-210 221-222-310-321 322 410 421-422-510 521-522 610-620

καὶ σὺ, φίλος, μάλα γὰρ σ' ὀρόω καλὸν τε μέγαν τε,
Auch du, Lieber, denn groß und stattlich bist du von Ansehn,
kai su, philos, mala gar s' horōō kalon te megan te.
110 121 122-210 221-222 310 (321) 321-322-410 420-510 521 522-610
620

Figure 19: WordHoard collocations

The application can run many statistical analyses and lexical queries and show the user a lexicon for each corpus with a list of all its lemmata, providing information about each lemma, either succinctly or distinguishing its various parts of speech, explaining spelling in greater detail. Furthermore, it provides the complete digital version of H. Erbse's *Scholia Graeca in Homeri Iliadem* added as links to the lines of the *Iliad*, with specific attention to digitally recording all its typesetting conventions. Some available statistical analyses are: display lists of word forms, comparing the numbers of word forms, tracking word form use in the course of time and finding collocates.

In the documentation section of the *WordHoard* web site, we can download a zip folder holding all the texts of the various corpora handled by the application. Every file is an XML file, and *WordHoard* “uses a subset of the Text Encoding Initiative (TEI) standard together with extensions which specify information specific to *WordHoard*” (*WordHoard*, Work XML Files web page, Table of contents⁴³). Investigating this file is the best way to understand how it is possible to pose all the queries described above and the goal of both this project and that of the *Chicago Homer*. There are two Headers, the *WordHoard* Header and the TeiHeader, but, from this point on, the elements draw only inspiration from the TEI, which is abandoned on every occasion when the editors felt it necessary to do so. These Headers are followed by an element <front>, which contains another <castList> element holding many <castItem>s. In the TEI Guidelines, <castItem> is used to name the characters in theatrical texts. It has the attribute type with the id role and, within this, the element <role> with a series of attributes, such as: <role id="Telemachos" gender="male" mortality="mortal" originalName="Τηλέμαχος">. The section on the documentation written for the developers⁴⁴ contains the schema for validating the XML files, *WordHoardText.xsd*, along with the files with the corpus. After the <front> element, there is the <body> element with the text of the *Odyssey* divided into books and lines.

```
<div id="1" indent="20"> (no TEI)
<WordHoardHeader>
<title>Book 1</title>
<pathTag>1</pathTag>
<taggingData>
<lemma/>
<pos/>
<wordClass/>
<spelling/>
```

⁴³ <http://wordhoard.northwestern.edu/userman/text-work.html>. Visited on the 9th August 2014.

⁴⁴ <http://wordhoard.northwestern.edu/userman/dev-files.html>. Visited on the 9th August 2014.

```

<speaker/>
<gender/>
<mortality/>
<prosodic/>
<metricalShape/>
</taggingData>
</WordHoardHeader>
<head>Book 1</head>
<WordHoardTaggedLine id="OD.1.1" n="1">
  <w id="ege-201000101"
    lemma="άνήρ (n)"
    pos="4101" (No TEI)
    metricalShape="110-121">ἄνδρα</w> (No TEI)
  <punc> </punc> (No TEI)
  ....
  <w id="ege-201000108"
    lemma="πόλις (j)"
    pos="4303"
    metricalShape="610-620">πολλὰ</w>
</WordHoardTaggedLine>
</div>

```

This encoding explains clearly the purpose underlying it, i.e. to permit an extensive, detailed search within the text. The attributes pertain to the TEI module concerning simple analytic mechanisms. The elements are part of the Linguistic Segment Categories. Checking the elements and attributes⁴⁵ clarifies what the editors meant with the use of a TEI subset with extensions specific to *WordHoard*. Looking at the element <w> in the TEI Guidelines (2014), it “(the word) represents a grammatical (not necessarily orthographic) word” (p. 555). Of the attributes used in this encoding, only id and lemma are in the Guidelines, @lemma providing “a lemma for the word, such as an uninflected dictionary entry form” (p. 555). @pos does not exist as an attribute but as an element “(part of speech) indicat[ing] the part of speech assigned to a dictionary headword, such as noun, verb, or adjective” (p. 278) within the module for transcribing lexical resources, i.e. dictionaries. Instead of the element <punc>, which is not in the Guidelines, a TEI compliant encoding should have the element <pc> (punctuation character) containing a character or string of characters regarded as a single punctuation mark (p. 561). The metrical attribute Shape is not in the subset for Rhyme and Metrical Analysis, whereas the attribute met “(metrical structure, conventional) contains a user-specified encoding for the conventional metrical structure of the element” (p. 210).

⁴⁵ <http://wordhoard.northwestern.edu/userman/metadata.html> Visited on the 9 August 2014.

A look at this description and at the explanations on the web site clarifies that the editors wanted to create a corpus encoded for quantitative analysis and not an edition of the works. Even if the files were encoded using XML, whereby they can be modified and reused, the type of encoding will always depend on the scope of the project. This is even more obvious here because the files are not entirely TEI compliant, so it will be necessary to assess all the elements against the TEI Guidelines and change those that were specifically devised for the *WordHoard* application.

It is unfortunate that the *Odyssey* offers little of the current information and that there are only the scholia of the *Iliad*. Looking at the file *iliad-scholia.xml*, we can see how the scholia were encoded. It is an XML file, but not TEI compliant. It is important that, like every work encoded in the *TLG*, they are encoded line by line, with no visible division between them. Every line is connected to a specific line of the *Iliad*, so it is possible to find one link in the first line of the *Iliad* that will open a window with the text of all the lines of the scholia that refer to the first one:

```
<annotation>
```

```
<start line="IL.1.1"/>
```

```
<end line="IL.1.1"/>
```

```
<p><hi rend="bold">1</hi> c. μῆνις παρὰ τὸ μένω μῆνις ὥς ἔνος ἦνις. <hi  
rend="bold">a b </hi>(bce<hi rend="superscript">4</hi>) <hi rend="bold">T</hi> οἱ  
δὲ περὶ Γλαύκωνα τὸν Ταρσέα ἡξίουσιν ὀξύνειν τὸ ὄνομα, οὐκ ὀρθῶς. <hi  
rend="bold">AT</hi><seg type="marginalia"><hi rend="italic">ex.</hi></seg></p>
```

```
</annotation>
```

The problem arising from this annotation is that it follows the printed edition in every respect. In the documentation, the editors emphasize that the editor of the scholia, Erbse, uses a highly specific set of typesetting conventions. They are very keen to inform the user/reader that: “We have attempted to faithfully reproduce these conventions...We assume that scholars are already familiar with how Erbse uses them and what they mean” (The *Iliad* Scholia and E. K. Annotations⁴⁶). Even if this is a digital project, it is no different from the book, which is still what is really important and must be respected. When the user selects the scholia, s/he becomes a reader of them, not a user. It is as if s/he were reading a book.

One must remember that the aforementioned projects, *Chicago Homer* and *Eumaios*, are not recent developments but they are still available, and errors can still be corrected and problems solved. *Eumaios* is interesting since it considers the digital

⁴⁶ <http://wordhoard.northwestern.edu/userman/scholia.html> Visited on the 9th August 2014.

medium a new method for storing and linking material, but it is only a proof of concept, remaining unchanged for several years. Moreover, there is no news on the website about whether it will ever be completed.

We can stress here that all these projects seem to deal more with a quantitative analysis and an attention to words in the Homeric texts than with producing an edition. The importance of XML and the TEI was recognised, as the editors employed both in the source files of the *Eumaios* web site. Furthermore, they adopted a self-publishing perspective by producing the *Eumaios* web site using SDPublisher. Regarding the influence of the TEI, looking at the only visible source files of *WordHoard*, their customisation detaches itself too extensively from the TEI Guidelines, making the files difficult to handle should they be needed in other projects. The *Chicago Homer* fulfilled the goal the editors had in mind and this is a worthy achievement. The notion behind *Eumaios* of providing various kinds of references from bibliographic to linguistic ones is understandably a good starting point for an analysis of the poems that combines bibliographical references and secondary sources.

2.8 The *International Greek New Testament project*.

While describing the *Homer Multitext* it was stressed how the lack of a critical edition was felt to be one its goals. To give a better assessment of the issue we should look at another project, the *International Greek New Testament project*⁴⁷. This is not a project that started in the digital medium but one that is, at present, attached to both the printed and the digital one. According to its web site, it started in 1949, and in 2005 a partnership began with the Institut für Neutestamentliche Textforschung, INTF, in Münster for the production of the *Editio Critica Major* and the *Digital Nestle-Aland*, the latter in collaboration with the Institute for Textual Scholarship and Electronic Editing in Birmingham. It is not an easy project to look at or to follow. Its main point of interest is how the notion of critical edition is described and considered important even in a digital project.

A detailed analysis of how to publish a scholarly edition of the *New Testament* and of the new challenges of a digital publication is offered by Professor Parker (2012b) in his book *Textual Scholarship and the Making of the New Testament*. The *New Testament* editors try to recover stems from centuries of studies, a work that is the

⁴⁷<http://www.igntp.org>
<http://www.iohannes.com/IGNTPtranscripts/index.html>
<http://ntvmr.uni-muenster.de/home>
<http://nttranscripts.uni-muenster.de> Accessed the 13 October 2015.

“result of a fusion of technologies...”, of “experiments of people with a variety of differing skills and interests” (Parker, 2012b, p. 11). Furthermore, it is a work to whose tradition should be added its printing history. Parker believes we cannot detach the different scholars who have interests in various instances of the *New Testament* as a work, text and document who are, respectively, reader, exegete and historian, textual critic, art historian and palaeographer.

The author talks about producing the *New Testament*, meaning that every scribe, editor and publisher adds an instance to the tradition. As understanding orality is important for grasping the composition of the Homeric poems, remembering that the *New Testament* we have originates in a written tradition transmitted by scribes is equally important. Nevertheless, it should not be forgotten that there might also be an oral tradition now lost to us, or at least an oral aspect of the transmission that is impossible to grasp fully. In connection with this notion is Parker’s idea of “mental text” (Parker, 2012b, p. 17), handed down via oral or written transmission which could help grasp the meaning of the work even if there are differences in the copies. This agrees with his opinion that “every written work is a process and not an object” (Parker, 2012b, p. 22) which cannot be understood through only one document, will continue to change and with it the textual scholarship that studies it. Parker strongly believes that it is impossible to recover an original text, that variations should be studied and collected and that scholars should “embrace the multiformity” (Parker, 2012b, p. 26).

The goal of the *New Testament* Project should be to understand the ‘Initial Text’, knowing that reconstructing an authorial text is not possible but only one of the forms the text had at a certain time. This text should be considered an ideal text, not a real one; it is also both the oldest recoverable text and the most contemporary one, being the result of a critical edition. Although Parker does not deny the existence and importance of multiforms, he stresses the importance of a critical edition as “a description of the work in its different forms. It is a tool for understanding the work” (Parker, 2012b, p. 106). A critical edition should hold a critical text, a critical apparatus and the explanation of every decision concerning the variants. It should not be a finished project, but an ongoing one continually in progress, accommodating new discoveries in a reliable apparatus.

The current edition in progress is the *Editio Critica Major* which will provide an evaluation of, and a reflection on, all the witnesses, a reconstruction of the oldest recoverable text, a critical apparatus and a full explanation of its methodology and results. This is where the digital medium comes in, mainly in the collection and

collation of readings and manuscripts. The witnesses the editor refers to are Greek manuscripts, citations in early Christian writers and translations. It is important to mention that the process the editor describes involves a critical assessment of the material, resulting in eliminating some of the data from the edition⁴⁸. At first, all the manuscripts are listed and collected through microfilms and are then assessed using a varying number of test passages from every book of the *New Testament*. The information is stored in a database and the editors are “able to assess the relationship between all the texts in a way which has never before been possible” (Parker, 2012b, p. 115). Only the adopted witnesses are then fully transcribed and digitized, following the TEI guidelines. This is undoubtedly the most important stage in building an edition. The manuscripts are doubly transcribed and checked. Their final copy is published in XML in the repository using a Creative Commons License. This data can always be checked, and the entire process, once completed, will not be repeated. The transcription will be open and errors can always be corrected within the files. Parker stresses that this project reduces the transitions and the workflow to a minimum by never changing the set of data in the XML file, with modifications allowed only at presentational stage. As was the case of the manuscripts, citations are stored in a database which will record a set of information decided by the editors, allowing for an analysis of the evidence, relying on the available critical editions. Translations are versions of the *New Testament* in Latin, Syriac and Coptic. Single editions of each of them will be made and added to the database behind the Greek version. No writing will be needed, but every citation and version will be imported to the database or linked. Using a database helps because the apparatus can be automatically updated every time a user decides on a different base text. In Parker’s opinion, the project will combine both a printed and a digital edition. A critical edition should never be abandoned: it fosters all the disciplines associated with it and the training of new scholars in the disciplines and in teamwork. Furthermore, being the text on which other editions will be based, it will influence more people than those who will actually use it.

According to Parker, there are four aspects that define a critical edition of the *New Testament*. Firstly, it will not recover the text of the author, only what the editor calls the oldest recoverable text, the Initial Text. Secondly, it will not tell everything but will be “consistent and accurate” (Parker, 2012b, p. 122). Thirdly, it will clearly express how it was built and give access to the source material. The final point is that we should

⁴⁸For a detailed analysis of the method used for analyzing the manuscripts, the The Münster Method, or the Coherence-Based Genealogical Method, see Parker, 2012b, Third Lecture, pp. 84 ff.

read a critical edition not only as a text, but as a narration, where we can read the history of the text in the critical apparatus; this “tells the story of a process, namely of the text's development” (Parker, 2012b, p. 123). The text and the apparatus are inseparable, “the text exists only as a series of hooks on which the apparatus hangs” (Parker, 2012b, p. 123). Parker considers a critical edition not only as the place where one can find a scholarly and authoritative version of a work, it is also where it should be possible to trace the history of the work because, if the text provides the oldest recoverable text, the apparatus will supply the history of the work.

The main difference with the *Homer Multitext* is that the editors of the *New Testament* consider the critical edition the best medium for describing the work and its variations since it can restore the history of the text. The main goal should be achieving an infrastructure for “bringing the critical edition and the manuscripts *as* manuscripts back together again” (Parker, 2012b, p. 126). To realize this, the editor developed a Virtual Manuscripts room, where it is possible to find a comprehensive list of the manuscripts of the *New Testament* together with a ‘Manuscripts workplace’ to look at images of the manuscripts together with transcriptions, when available. We might say that this virtual workplace is the place that will help achieve what Parker describes as a “logical collection of images” (Parker, 2012b, p. 129), which is a collection of all the material connected to a specific work. He believes that, firstly, all the manuscripts should be digitized and, later, all the images deemed necessary should be gathered from various sources and provided with a description and a transcription. Supplying a transcription is similar to providing a description of the reading produced by the editor and is also a source of information about the historical aspects of a printed edition; it is a “bridge between the images and an edition” (Parker, 2012b, p. 133). If a transcription is deemed very important, then the difference with the *Homer Multitext* is less striking. Following Parker’s notions, the future will be a “baseless apparatus”, one which does not need to be linked to a base text within a database. In contrast to the *Homer Multitext*, Parker believes a base text should appear in a printed edition as “a matter of choice”, while the editors of the *Homer Multitext* decided against it, in favour of printing a selection of multitexts. The *New Testament* will give users all the material behind a critical edition, allowing them to rely not on the editor’s skills alone. Nevertheless, a critical edition will never lose its significance: it “provide[s] a story and a framework for navigating through the process. Without it I would be adrift in an ocean of data. With it I am equipped to understand the textual history and through it the work which I am studying” (Parker, 2012b, p. 139).

The web site of the *New Testament* project will point the user/reader to a list of some of the most recent print or online publications and also to the *New Testament* Virtual Manuscript Room and the Institute for *New Testament* Textual Research. It is already possible to explore the digital edition of the *Gospel of John*, a prototype of *New Testament* transcripts, and the early transcripts for a digital edition of the *Epistle of Paul*. Considering the *Gospel of John*, we can see three possible transcriptions, the Greek majuscule manuscripts, the *Vetus Latina* Johannes and the Byzantine text of John. Furthermore, the transcription and full digitization of the Codex Sinaiticus are also available, the best example of what Parker aims at when he describes the relationship between images of manuscripts and an edition. It was produced via “plain text files, using tags compliant with the TEI. These were then converted into xml” (Codex Sinaiticus web site, page on transcription explanation). The transcription allows for reading the text either following the page structure or the number of verses in a book. In both ways, the text is the same with corrections provided. The different scribes and correctors in the manuscript are outlined through letters and numbers, wherever possible. Unreadable text, corrections across a page breaks, corrections across a modern chapter or verse break, marginalia, further annotations and Arabic glosses are also highlighted. The transcriptions derive from a comparison, effected by means of the software Collate, of two independent transcriptions produced from additions to an already available digital text. An important characteristic of this digital edition is the alignment of the transcription with the digital images, so that every time a word is selected in the pictures, the corresponding one in the text is highlighted as well. The XML file holding the encoding can be downloaded and is available under an Attribution-NonCommercial-ShareAlike 3.0 Unported licence. The encoding follows the TEI Guidelines wherever possible, but in certain cases the editors needed to add additional elements, mainly for the encoding of marginalia.

This detailed description of the *New Testament* project offers an interesting comparison with the *Homer Multitext*. It makes it possible to look at a digital edition without thinking of a *loss* of a critical and basic foundation but as a *gain*. If we think of a base text as a kind of guidance, then it does not seem necessary even for an edition of an orally composed work to lack one. As Professor Parker stresses, we need a starting point, which should not be a final point. A base text will not be a final unchangeable text; it will be one way of looking at the work that might be challenged after reading/using the base material provided.

2.9 The digital edition of Euripides' Scholia.

As preliminary work on our proof of concept, we checked to see whether there were other digital editions of scholia available online and, if they used the XML/TEI encoding system, how they used it. The only edition that responded to such criteria is the digital edition of the Euripides scholia (<http://euripidesscholia.org>), started between 2009 and 2010 by Donald Mastronarde, Professor of Classics at Berkeley, University of California. This edition can be used as the starting point for a description of what an edition needs to include in order to be called digital. We shall describe this in greater detail in the following chapter, but we can state here that, following the reflections expressed by Neel Smith (2004)⁴⁹, Buzzetti-McGann (2006)⁵⁰ and Price (2007)⁵¹ concerning what digital editions require in order to be included in scholarly editing, this Euripides edition is undoubtedly a scholarly edition. It obeys its rules and their tradition as they are to be found in various publications, including, among others, *Textual Criticism and Editorial Techniques* (1973) by M.L. West and *Storia della tradizione e critica del testo* (1952) by Giorgio Pasquali, which describe approved conventions in the creation of texts, introductions, notes and critical apparatus. This edition focuses on the tragedy *Orestes*, because, “as a triad play, it provides the maximum degree of variety and complexity in the annotation tradition” and “images were already on hand for most of the manuscripts desirable for an initial sample” (Euripides scholia web site, project goals, 2010). The material pertains to *Orestes* lines 1-25 and 401-425, while the collation has been carried out for lines 1-500 and the prefatory material in thirty-five witnesses.

Mastronarde describes the goals of his edition⁵² on its web site. Apart from expressing aims associated specifically with a critical edition of Euripides⁵³, he asks

⁴⁹While calling printed editions faith-based editions (2004, p. 311), she believes that in the digital medium we will check better the editorial process, via access to the background material of an edition. She stresses the strong value of modern technologies despite their still being incapable of substituting a printed text (see Chapter 3.3.1).

⁵⁰They believe that we can now accommodate material normally found in different places, changing our way of considering critical editing, but it is highly possible that we shall still follow the approved rules of printed editions (see Chapter 3.3.1).

⁵¹He believes that we should call an edition scholarly when there is consistency in the encoding and when established rules are followed in all its production. He argues that, “mere digitizing produces information; in contrast, scholarly editing produces knowledge” (2007, p. 435) (see Chapter 3.3.1).

⁵²They can be read by clicking on “project description” in the description bar at the top of every page of the web site. <http://euripidesscholia.org/EurSchGoals.html> Last visited on 10 November 2014.

⁵³“Improve the accuracy and completeness of the information about the most important manuscripts used in the standard edition of the old scholia by Eduard Schwartz (1887-1891); clarify the extent, nature, and possible stemmatic relationships of the scholia in some of the so-called *recentiores*; provide a reliable and complete edition of the scholia attributable to Manuel Moschopulus and Thomas Magister; provide full reporting of Triclinius' work on the triad in T together with information about his much sparser metrical annotation in L.; incorporate into the corpus the few traces of marginal annotation; clarify the nature and

about the goals “related to exploiting the possibilities of a digital format”, which are as follows: “A digital format is variable, updatable, allows for sharing of interim stages of the work, is expandable, is searchable in a way that a printed volume is not and it is highly probable that a digital format will be able to be transformed fairly efficiently in the future into another digital format” (Euripides scholia web site, project goals, 2010). While describing the project, Mastronarde also points out the changes that occurred during its evolution, with acknowledgments to institutions and individuals. Other sections of the web site are: the manuscripts, the XML structure, conventions and abbreviations, bibliography, Greek font, licence and source files. The criteria and rationale of the edition are explained in the section on the XML structure, the Licence and Source files. It is explained how XML, TEI, XSLT, CSS work in this project and how the TEI encoding was used to describe the characteristics of the text of the Euripides scholia. Following the information on this page, we can describe how the edition works. To browse the text, the user/reader needs to go to the home page and look at the drop-down menu and a “display filter”, with all the available visualisations. Any content presented can be displayed with three levels of details, full view, expert view, view with transcription and apparatus. The contents to choose from are: arguments and scholia, scholia vetera, excluding glosses, Moschopulos, Thomas, and Triclinius, Triclinian scholia, Triclinian prefatory texts and scholia only.

extent of scholia labeled as being by Maximus Planudes or conjectured by some scholars to reflect his work; include, eventually, non-Triclinian metrical scholia”.

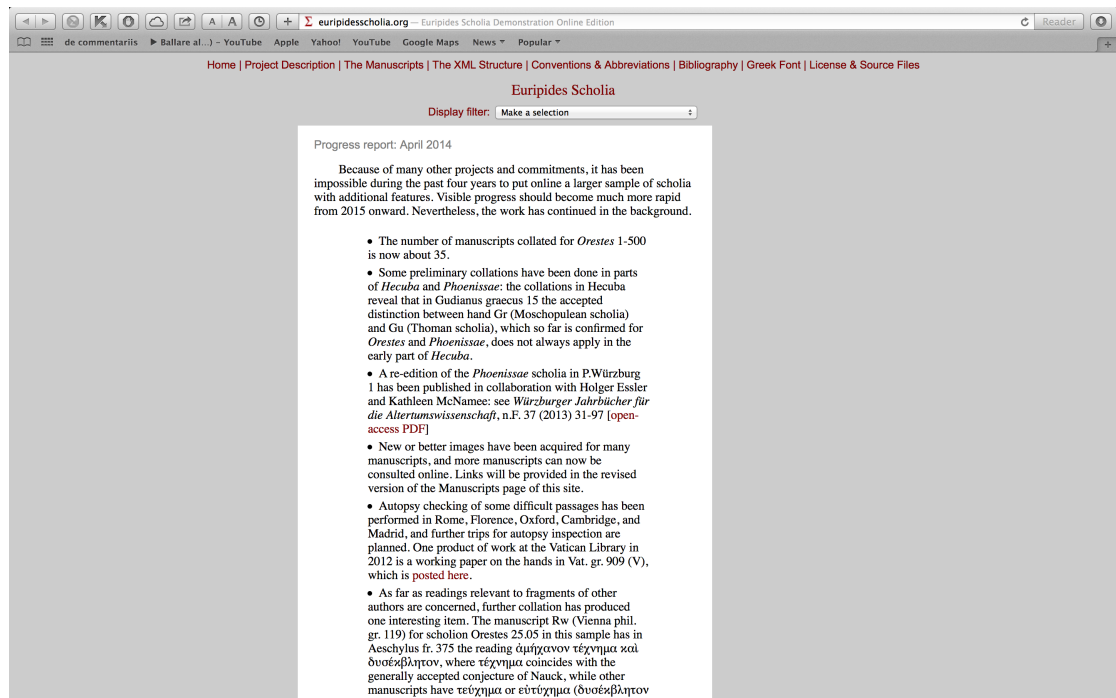


Figure 20 Front Page of the Euripides Scholia

We shall now analyse whether this can be considered a digital critical edition or not. Looking at the source files reveals the high level of details of the encoding⁵⁴. This is a digitally born edition and not an encoding of previously printed material. Nevertheless, it has some limitations that might lead some users to consider this only partly a digital edition.

Firstly, the editor did not encode the critical apparatus using the tagset recommended by the TEI in the Guidelines. He is still using the TEI, but he chose to use generic elements instead of the proposed ones.

Here is a comparison between a passage in the Euripides Scholia and the encoding of the same passage using the Location-Referenced Method of the TEI Guidelines (2014, pp. 419-420), which seems the most appropriate to employ here as a comparison.

⁵⁴Some of the encoding solutions envisaged by the editor are now considered deprecated, such as the enumeration of the element <div> as <div1>, <div2> etc....

<i>Euripides Scholia</i>	TEI Guidelines: Location-Referenced Method
<div4 type="appCrit">	<div>
<p>	<app loc="s 1">
<seg type="appItem">1 ὅτι om. Za</seg>	<rdg wit="#Za">ὅτι om.</rdg>
	</app>
	<app loc="s 2">
<seg type="appItem">2 ἐκ] ἐὰν Z</seg>	<lem> ἐκ</lem>
	<rdg wit="#Z"> ἐὰν </rdg>
	</app>
	<app loc="s 2">
<seg type="appItem">ἐργεται Z</seg>	<rdg wit="#Z"> ἐργεται </rdg>
	</app>
	<app loc="s 3">
<seg type="appItem">3 γὰρ] δὲ ZZa</seg>	<lem> γὰρ</lem>
	<rdg wit="#ZZa"> δὲ </rdg>
	</app>
	<app loc="s 3">
<seg type="appItem">συμφορᾶς Zm</seg>	<rdg wit="#Zm"> συμφορᾶς </rdg>
	</app>
	<app loc="s 4">
<seg type="appItem">4 γέλωτι ZZa, γέλωσι TZm, app. Gu (and Gu as variant in arg. 3)</seg>	<rdg wit="#ZZa"> γέλωτι </rdg>
	<rdg wit="#TZm"> γέλωσι <note> app. Gu (and Gu as variant in arg. 3)</note></rdg>
</p>	</app>
</div4>	</div>

The critical apparatus is encoded using a <div> with the attribute type= appCrit and the element <p> within it. Within <p> every variant is encoded using an element <seg> with the attribute type=“appItem”. This encoding leaves the user/reader with less interoperable material than would have been possible. Looking at the encoding displayed above, all the witnesses are encoded together with the variants. The variants and the abbreviations referring to the witnesses are found in the element <seg>. They are not encoded individually. The witnesses are near the variants, but, not being in any element or attribute, they cannot be selected. This is not the correct encoding for handling a collation or the recognition of single manuscripts or any other analysis which involves managing witnesses. Mastronarde argues that using the TEI mechanisms “would involve an unjustifiably large overhead of markup. I believe the information familiar to those who know how to read the apparatus *criticus* of a classical text can be provided in textual segments” (Euripides scholia web site, The XML Structure and Technical Details, 2010). He understands that it would not be possible to reproduce the text of a specific witness, claiming that the more complex encoding needed would “require more personnel and a much larger budget, and I don’t think the benefit would be worth the cost” (Euripides scholia web site, The XML Structure and Technical Details, 2010). It is a long, difficult and complex process to achieve such an edition, but a digital project should aim to use *all* the opportunities offered by the digital medium, encoding the critical apparatus not as if it were a printed edition. The problem described by Mastronarde involves further questions about users/readers and about time and feasibility, an issue that is real and comprehensible. He tries to achieve a digital critical edition and realises that a detailed critical edition has innumerable requirements, which, in his opinion, are not worth the amount of work needed. Nevertheless, he is aware of its limitations. We understand that his aim is an edition that provides the user/reader with the maximum amount of information available in the most cost effective way. At the same time, how he provides the information does not allow for further analysis and a hybrid is not the best outcome for a digital critical edition. Every piece of information in the critical apparatus carries a meaning, which is why the apparatus in this edition is indeed different from a printed edition, yet not what it might be in a digital edition. The manuscript abbreviations do not have suprascript letters, which are an integral part of the manuscript reference system, but Mastronarde treats them as if not encoding them as suprascript made no difference. The editor wants to provide as much material as he can, but his encoding does not permit it and, hence, he may still not be sure about the final scope of his edition. He is publishing a mixture of the digital and the printed medium,

adhering completely to neither of them. Looking at the apparatus on screen, it is almost as if the editor were reproducing the visualisation of a printed edition, but, owing to the way he encoded it, he is neither recreating the printed page on screen, nor exploiting the digital potential of the critical apparatus. In conclusion, a user/reader with little or no experience of critical editions will still be able to understand what can be visualised because it resembles the apparatus of a printed edition. As the apparatus is encoded in the *Euripides Scholia*, it has no specific meaning for the computer, which understands only that some lines of text have been encoded. As we shall see in Chapter 3.2.4, we are talking here about digital text as a sequence of characters, each in a precise position. In order to let the computer recognise the information we are entering as text, we need to add markup, a code consisting in letters and numbers, conveying a specific instruction to the machine. In this example, the critical apparatus represents one of the structural levels of a text which need to be pointed out properly so as to be correctly represented in a digital encoding, not just as a general paragraph of text, which is the way Mastronarde does it. As can be seen in the picture below, the editor puts the title App. Crit. (critical apparatus) every time he encodes the critical apparatus, making explicit at visualisation level the attribute type of the `<div4>`, `appCrit`.

Orestes

Prefatory material (argumenta/hypotheses) for Orestes

Arg. 1: Ancient epitome: υπόθεσις Ὀρέστου

¹Ὀρέστης τὸν φόνον τοῦ πατρὸς μεταπορευόμενος ἀνείλεν Αἴγισθον καὶ Κλυταιμνήστραν· ²μητροκτονῆσαι δὲ τολμήσας παραχρῆμα τὴν δίκην ἔδωκεν ἑμμανὴς γενόμενος. ³Τυνδάρεω δὲ τοῦ πατρὸς τῆς ἀνηρμημένης κατηγορήσαντος κατ’ αὐτοῦ ἔμελλον κοινήν Ἀργεῖοι ψῆφον ἐκφέρεισθαι περὶ τοῦ τί δεῖ παθεῖν τὸν ἀσεβήσαντα. ⁴κατὰ τύχην δὲ Μενέλαος ἐκ τῆς πλάνης ὑποστρέψας νυκτὸς μὲν Ἑλένην εἰς ἄστυ ἀπέστειλε, μεθ’ ἡμέραν δὲ αὐτὸς ἦλθεν. ⁵καὶ παρακαλούμενος ὑπ’ Ὀρέστου βοηθῆσαι αὐτῷ ἀντιλέγοντα Τυνδάρεων μάλλον ἠυλαβήθη. ⁶λεχθέντων δὲ λόγων ἐν τοῖς ὄχλοις ἐπηνέχθη τὸ πλῆθος ἀποκτείνειν Ὀρέστην. ⁷() ἐπαγγεῖλάμενος αὐτὸν ἐκ τοῦ βίου προΐεσθαι· ⁸συνὸν δὲ τούτοις ὁ Πυλάδης φίλος αὐτοῦ συνεβούλευσε πρῶτον Μενελάου τιμωρίαν λαβεῖν Ἑλένην ἀποκτείναντας. ⁹αὐτοὶ μὲν οὖν ἐπὶ τούτοις ἐλθόντες διεψεύσθησαν τῆς ἐλπίδος θεῶν τὴν Ἑλένην ἄρπασάντων· ¹⁰Ἡλέκτρα δὲ Ἑρμιόνην ἐπιφανείσαν ἔδωκεν εἰς χεῖρας αὐτοῖς, οἱ δὲ ταύτην φονεῦειν ἔμελλον. ¹¹ἐπιφανεῖς δὲ Μενέλαος καὶ βλέπων ἑαυτὸν ἅμα γυναικὸς καὶ τέκνου στερούμενον ὑπ’ αὐτῶν ἐπεβάλετο τὰ βασιλεια πορθεῖν. ¹²οἱ δὲ φθάσαντες ὑφάψιν ἠπειλήσαν. ¹³ἐπιφανεῖς δ’ Ἀπόλλων Ἑλένην μὲν αὐτὸς ἔφησεν εἰς θεοὺς διακομίζειν, Ὀρέστη δὲ ἐπέταξεν αὐτῷ μὲν Ἑρμιόνην λαβεῖν γυναῖκα, Πυλάδῃ δὲ Ἡλέκτραν συνοικίσαι, καθαρθέντι δὲ τὸν τῆς μητρὸς φόνον Ἄργους δυναστεύειν. —MBOVACFGKPrRSSa, XXaXbYGrZaZbZcZu; 1-2 τολημ[and 10 α]υτοιοι-13 P. Oxy. 2455 = Π¹

APP. CRIT.: heading: euriptidou upothesis orestou XXb, upothesis tēs hēlēktiras drāmatis Xa, euriptidou orestēs G, om. FGPrYGr | in marg. μαξ Y, an attribution to Maximus Planudes [placed so that label could apply to arg. 1 or arg. 2a, but may be assumed to apply to arg. 1] | 1 τὸν τοῦ πατρὸς φόνον K [Π¹] | μεταπορευόμενος] ἐκδικῶν B², μεταπορευόμενος καὶ ἐκδικῶν FGPr, μετερχόμενος Zb, ἐκδικησάμενος RSSa | αἰγιόστον CKPrZcZaZbZu [Π¹] | κλυταιμνή- all, as usual in mss; κλυταιμή- edd. | 2 δὲ om. R | ἔδωκε τὴν δίκην Za | 3 τυνδάρεως MPr | δὲ om. PPr(perhaps R a.c.), δὲ παρὰ Zb | κατ’ om. CZb, κ’ M | punctuation before, not after, κατ’ αὐτοῦ XbYGr | ἄργειοι κοινήν VASa | ἐκφέρειν ZbZu | περὶ] παρὰ OF | τοῦ τί δεῖ] RSAAAbG¹⁵MnSa, τοῦτ* (τοῦ τί?) O, τούτου RSSa, τοῦ others | αὐτὸν τὸν ἀσεβ. A, τοὺς ἀσεβήσαντας M | 4 ὑποστρέ- at page bottom (fol. 37v) Za, rest omitted (38r begins with arg. 4) | μὲν om. Y a.c. (s.l. add. p.c.) | εἰς ἄστυ ἀπέστειλε C, ἀπέστειλε V, εἰσαπέστειλε(v) others, ἀπέστ. εἰς ἄστυ vel εἰς ἄργος ἀπέστ. conj. Diggle | αὐτὸς δὲ μεθ’ ἡμέραν transp. BFG | αὐτὸς] αὐτῆς Xa | εἰσηλθε BFGK, ἀνῆλθε V | 5 ὑπὸ τοῦ ὄρ. VR | τυνδάρεων τὸν αὐτοῦ πενθερὸν Sa | 6 ἐν om. Xa | ἐπηνέχθη ... προεῖσθαι] ἐψηφίσθη τοῖς δικασταῖς ἀποκτείνει αἰθεὶς ὀρέστην καὶ τὴν ἀδελφὴν αὐτοῦ. καὶ ὅς ἐπαγγεῖλατο αὐτοχειρίᾳ ἑαυτὸν καὶ τὴν ἀδελφὴν ἀποφάξει Zb | ἀπηνέχθη X | ἀποκτείνει SZcZu | τὸν ὀρέστην Y | 7 lacuna posited by Porson | ἐπαγγεῖλάμενος ... προεῖσθαι om. RS | ἐπαγγεῖλάμενον BFGZcZuSaXa, p.c. Gr, -μενοι GPr [RS] | ἑαυτὸν BFGZ, p.c. Gr, αὐτὸν others [RS] | ἐκ τοῦ βίου BVFGZc, p.c. Gr, εἰς τὸν βίον others (ἐπὶ τ. β. Sa, εἰς τὸν om. Pr) [RS] | 8 ἐπεὶ δὲ συνὸν τούτοις Sa | ὁ om. Zb (and Va, acc. to Diggle) | φίλος om. a.c. Y, ὁ φίλος V, καὶ φίλος Xa, φίλοις Zb | αὐτῷ VF, αὐτοῖς ὧν ἐν τοῖς μάλιστα Zb | τιμ. λαβ. μεν. ἐλ. Pr, τιμ. μεν. λαβ. ἐλ. Sa, μεν. τιμ. ἐλ. λαβ. G, μεν. τιμ. ἐλ. A | μενέλαον FGSZc, corr. G^{1a} | 9 ἐπὶ τοῦτο εἰσαλθόντες Wecklein | ἐλπίδος κτλ om. Zb (τῆς at end of fol. 32v; a page lost) | 10 ἡλέκτρα ... ἐπιφανείσαν] τὴν δὲ ἐρμιόνην δειξας ὁ ἀπόλλων RS, corr. R^{1yρ} | ἡλέκτραν Y a.c. | αὐτοῖς] αὐτῶν V | φονεῦειν ταύτην transp. O | 11 ὁ μενέλ. VASa, μενέλεως GXa [Π¹] | αὐτὸν OK, a.c. S, ἑαυτὸν changed to αὐτὸν Zu | ἅμα καὶ OY [Π¹] | γυναῖκα S, γυναικὸς transp. before ἅμα Zu | τέκνον] τέκνον GK, τέκνω S, τέκνον Y, παιδὶς Zu [Π¹] | ἑσπερήμενον R, -μένω S [Π¹] | ὑπ’ αὐτοῦ XXbYGr [Π¹] | ἐπεβάλλετο MCGKZc, ἐπεβάλετο BOPRSXXaXbYGr; ὑπεβάλετο A, ὑπεβάλλετο Zu, ἐπέβαλε V, ἐπεβούλετο F, ἐπεβούλευετο Sa [Π¹] | 12 φθάσαντας Xa | ὑφάψιν τῶν ἀνακτόρων Sa | ἠπειλουν R(S), perhaps κατηπείλησαν Π¹ | 13 δ’ Π¹, δὲ all mss | μὲν om. R | αὐτὸς Π¹, om. all mss | ὀρέστη(ι) BOAGZc (conj. Brunck), ὀρέστην others [Π¹] | δὲ καὶ Zu | ἐπέτ. ... ἐρμιόνην app. Π¹, ἐρμιόνην ἐπέταξε (αὐτῷ μὲν om.) mss (ἐπ. ἐρμ. transp. KSa, corr. K^{1b}) | λαβεῖν γυναῖκα Π¹Ad, γυναῖκα λαβεῖν Xa, λαβεῖν (γυν. om.) others | πυλάδην VFGZcXa, πυλάδης FZu | ἡλέκτρα(ι) MVCRRXXaXbYGr [Π¹] | συνοικίσαι RfSa (conj. Brunck), om. R, συνοικῆσαι others [Π¹] | καὶ καθ- VASa [Π¹] | καθαρθέντα R, -τας K, -τες G (corr. G^{1b}), -τος FS, -των XaZcZu | δὲ (after καθαρθ.) om. Sa | τὸν [τῆς μητρὸς φόνου] vel τὸν [φόνον τῆς μητρὸς] Π¹, τὸν φόνον (τῆς μητρὸς om.) MOACKPrSaZaZbYc, τοῦ φόνου VFRSXZcZuPr^{1a}XXaXbYGr, τῶν φόνων BGR^{1a} | δυναστεύει[iv] Π¹, ἀρχειν mss (ἔχειν Zc, ἔχειν transp. before ἄργους Sa) | after ἀρχειν add. ἡξιώθη G, ἡξιώθησαν XaZcZu |

ORTHOGRAPHICA: 1 initial ὁ of ὀρέστης om. ZaZu | 4 εἰς ἀπέστειλλεν Zu | ἦλθε CZbZuRSaXbYGr | 5 ὑπ’ XaZu, ὑπὸ others | τυνδάρεων Zu | εὐλαβήθη MFKXXaXbYGrZc, perhaps Π¹ | 8 συνὸν M | 12 ἠπάλησαν Xa, ὑπέλησαν Zu | 13 ἐρμιόνην R

COLLATION NOTES: at this time reports from AFGKPSZc and Π¹ and Ad depend on Diggle’s OCT and have not yet been reviewed by Mast.

Arg. 2a: Hypothesis of Aristophanes of Byzantium: Ἀριστοφάνους γραμματικῆς υπόθεσις

¹Ὀρέστης διὰ τὴν τῆς μητρὸς σφαγὴν ἅμα καὶ ὑπὸ τῶν Ἑρινύων δειματούμενος καὶ ὑπὸ τῶν Ἀργείων κατακριθεὶς θανάτω, ²μέλλων φονεῦειν Ἑλένην καὶ Ἑρμιόνην ἀνθ’ ὧν Μενέλαος παρὼν οὐκ ἐβοήθησε, διεκωλύθη ὑπὸ Ἀπόλλωνος. ³παρ’ οὐδενὶ κείται ἡ μυθοποιία. —MBVCFGPRSSa, XaYZcZu

APP. CRIT.: heading: ὄρ. γρ. ὑπ. B, ὑπ. ὀρέστου ὄρ. γρ. F, ὀρέστου ὑπ. P, ἄλλως MRSSaZu; om. VCGXaYZc | 1 διὰ διὰ Xa | προσφαγὴν R | ἅμα] ἑμμανὴς app. B² | καὶ om. XaZc | δειμαγωγούμενος Zu | καὶ θανάτω] ἔμελλε φονευθῆσθαι καὶ αὐτὸς δὲ P | καὶ ὑπὸ] ὑπὸ Xa, ἀπὸ S | κατακριθεὶς θανάτω om. BFG, καταδικασθεὶς θανάτω Y | 2 φονεῦειν P | ἐλ. καὶ ἐρμ.] ἐρμ. καὶ ἐλ. BFG, ἐρμιόνην P, ἐλένην Y | ἐκωλύθη R(S) | ὑπὸ] ὑπὸ τοῦ BGFXaZc, περὶ τοῦ τοῦ app. F | 3 παρ’ ... μυθοποιία om. XaZcZu | οὐδενι] οὐδενὶ δὲ GPS, οὐδετέρω Dind. | μυθοποιία BFGP, μυθολογία others [XaZcZu] |

ORTHOGRAPHICA: 1 ἐρμινὸν MCRS, ἐριννύων others | ἐρμιόνην R | ἐβοήθησεν RY

COLLATION NOTES: arg. 2a is located in the scholia block in B; it follows arg. 2b in V, it follows args. 2b-2d in XaZc, it follows arg. 2c in FG; added in the marg. in Y (and label μαξ could belong to it rather than arg. 1, but arg. 1 is more likely reference). | at this time reports from FGPSZc depend on Diggle’s OCT and have not yet been reviewed by Mast.

KEYWORDS: Aristophanes of Byzantium

Arg. 2b: Anonymous comment

¹Ἡ μὲν σκηνὴ τοῦ δράματος ὑπόκειται ἐν Ἀργεῖ· ²ὁ δὲ χορὸς συνέστηκεν ἐκ γυναικῶν Ἀργείων, ἡλικιωτίδων Ἡλέκτρας, αἱ καὶ παραγίνονται ὑπὲρ τῆς τοῦ Ὀρέστου πυνθανόμεναι συμφορᾶς. ³προλογίζει δὲ Ἡλέκτρα. —MBOVACFGKPrRSSa, XXaXbYGrZaZbZcZu; 1-2 τολημ[and 10 α]υτοιοι-13 P. Oxy. 2455 = Π¹

Figure 21 Arguments and scholia experts’ view: how the critical apparatus is seen in Mastronarde’s edition.

We shall describe in a subsequent chapter how the TEI has a subset for encoding the critical apparatus in order to express the meaning of its different components, making them recognisable from a digital point of view, as well. It will also be stated how employing other encoding methods, apart from the Location-Referenced, all the single witnesses could be seen as parallels and the variants will be encoded in the exact point of the text they refer to. We might stress here that, if we compare this project to that of the *New Testament*, we can see how they treat differently the function of the critical apparatus in a digital edition. In the *New Testament* they provide the users/readers and subsequent editors with all the necessary material in one encoding. They want to attribute importance to every single manuscript, making the users/readers aware of the different variants, seeing them in context, not only in the apparatus. The critical apparatus should allow the reconstruction of any single witness, or, following the *New Testament*, every witness should be encoded, and they should all be collated so that the apparatus derives from the collation and is not written anew. These are different notions that might apply to different situations and projects but we believe that the idea of the *New Testament*'s editors to minimise the workflow will work better in the long run; it will mean that no other major encoding is needed. If, as Mastronarde states, the initial costs and the initial work required will be higher, they will be dealt with in the early stages of the project and they will be superseded by the possibilities of further research. The critical apparatus should not be encoded as a normal section of text, but as the door opening onto the history and transmission of the work. It comes at the final stage of the analysis of the material on the part of the editor, but it is the first place where a user/reader looks to see the editor's decisions and the history of the text. In a digital edition, it further becomes the starting point of a journey backwards into the history of the work. Depending on the material provided, it could also be the beginning of a first-hand analysis for anyone interested in the work or in connected research. Whichever way one looks at it, it seems that whenever a critical edition is produced, the critical apparatus should follow the TEI Guidelines because it is the way in which the editor express his/her point of view and his/her critical judgement.

Secondly, the editor predefines the different views and does not give the user/reader the possibility of modifying them, as in most digital editions, including the "Comprehensive Odyssey". Although the views cannot be altered on screen, the editor provided the user/reader with another way of tailoring the visualisation to their own needs. It is very important to stress that the editor is publishing the source files under a Creative Commons Attribution-Non-Commercial-Share Alike 3.0 United States License

& Source Files, thus allowing any user/reader to “copy and redistribute the material, and transform it and build upon it” for non-commercial purposes and under the same licence. They are: “the XML file of the demonstration edition, the Relax NG schema file, the main XSLT file for processing all of the body text of the XML file, XSLT files for processing some selected portion of the XML file, and the secondary XSLT files (incorporated in the above by an include command) for processing the various types of div4 elements or seg elements” (Euripides scholia web site, Source Files, 2010). We can also access the “directory of HTML and CSS files used in the display of scholia on the home page” (Euripides scholia web site, Source Files, 2010). The visualizations are fixed, not changeable or comparable, because they can only be individually chosen via the “display filter” and, at first sight, seem too similar to a printed book; this might encourage the user/reader to want to print and bind them.

Finally, we can state here that we can call this edition digital, even if the visualisation, the use of the source files and the encoding of the critical apparatus could be improved. In particular, overusing some generic elements, such as the `<seg>`⁵⁵ element, does not afford the precision the editor should aspire to in using XML/TEI, particularly in the critical apparatus. In the example below, `<seg type="witnesses">`, `<seg>` was used to enclose the list of witnesses specific to each scholia, or, in `<seg type="lemma" subtype="inMS">`, was used to encode a lemma. In the same way, but more specifically, the editor used the element `<s>`⁵⁶ pertaining to the linguistic segment category and “contain[ing] a sentence-like division of a text” (TEI P5 Guidelines, 2014, p. 523). In the following example, every sentence in the scholia to line three of *Orestes* is encoded using the `<s>` element in the element `<p>`, with an attribute `n` for the numbering of the scholia. The main problem is that even if using `<s>` and `<seg>` complies with the Guidelines, it creates too generic a description at the element level, leaving the description to the attribute, because it is in the description of the attribute that the textual segmentations are named according to their function, such as `appCrit` for the critical apparatus and `appItem` for every variant. Mastronarde stresses that each project has to choose the TEI subset that seems most suitable for its purpose. He also underlines that the limited details in the markup are similarly due to the time available

⁵⁵Following the TEI Guidelines’ description of Paragraphs, it seems that the “`<seg>` (arbitrary segment) could only be effectively used within the element `<p>`, even if it represents any segmentation of text below the ‘chunk’ level” (TEI P5 Guidelines, 2014, p. 521). This is because “where the text clearly indicates paragraph divisions containing one or more verses, the `<p>` element may be used to tag the paragraphs, and the `<seg>` element used to subdivide them” (TEI P5 Guidelines, 2014, p. 525).

⁵⁶Its use is more restricted, because it “may only contain phrase-level elements or text” (TEI P5 Guidelines, 2014, p. 556), while the “`<seg>` unit may contain anything which can appear within a paragraph” (TEI P5 Guidelines, 2014, p. 556).

and that, sometimes, adding too much markup would not be worth the effort. We agree that time can be a considerable issue (see Chapter 6.4), and it must be taken into consideration, but the editor's view concerning the TEI subset does not seem to be correct. If a TEI subset created for the encoding of the critical apparatus is available, it should be used to give consistency to digital editions. The final purpose should be an edition that could be part of a corpus and which could be connected to other editions, without any compatibility problems. Another point one has to stress here is that the elements `<seg>` and `<s>` are part of the specific TEI subset describing analytic mechanisms, and more specifically linguistic segment categories. They describe the traditional linguistic categories a text can be divided into, meaning that in this edition the text can be analysed only from the point of view of its structure. It is the critical aspect of this edition that is questionable due to the way in which the critical apparatus is encoded.

```

<p>
<seg type="lemma" subtype="inMS">οὐκ ἔστιν οὐδὲν δεινόν</seg>
<s n="1">οὔτε ἀκοῇ οὔτε θεᾷ ἔστιν οὔτω δεινὸν ὅπερ οὐχ ὑφίσταται τῶν
ἀνθρώπων ἢ φύσις.</s>
<s n="2">τοῦτο δέ φησι παρόσον ἔκτοπον καὶ ἀλλόκοτον ὑπέστη τιμωρίαν ὁ
Τάνταλος.</s>
<s n="3">ἢ διὰ τὰς τοῦ γένους συμφοράς· ἢ δι' ἑαυτὴν ὥς ὅτι τλημόνως
συνυποφέρει τῷ ἀδελφῷ τὴν τύχην.</s>
<s n="4">ἢ διὰ τὸν Ὀρέστην.</s>
<seg type="witnesses">MBCVR<seg type="witMod">b</seg>Y<seg
type="witMod">2</seg>, partial O</seg></p>

```

This is a good example of a critical edition born digital, but it is deficient in the visual presentation of the material and in its critical aspect. Furthermore, it is an interesting illustration of how visualization is important in a digital project, changing some of its perceivable characteristics as the work develops in its various forms, according to the emergence of new requirements. The analysis of this project has shown how the editor decided, in certain cases, to depart from the TEI Guidelines, while still considering it acceptable to follow a personal view of the subset to be used, rather than abide by the Guidelines.

2.10 *Perseids* and the *Digital Fragmenta Historicorum Graecorum*.

In the previous paragraph about the *Perseus Project*, we hinted at a connection with the work on Open Philology carried out at the University of Leipzig. In this section there will be a short description of two of the projects that are part of the *Leipzig Open Fragmentary Texts Series (LOFTS)*⁵⁷, which is a branch of the *Open Philology Project*: “*Perseids*, Fragmentary Text Editor”⁵⁸ and “*Digital Fragmenta Historicorum Graecorum* (DFHG) Project”⁵⁹.

To be precise, the Fragmentary Text Editor is not a standalone project as it is connected to the collaborative editing platform *Perseids*⁶⁰, which is part of the *Perseus Digital Library*. This project follows studies on text re-uses of fragmentary works and quotations. Its aim is to address the question of reproducing fragmentary texts, mostly published in collections, outside their original context. The editors would use the digital medium to produce a digital library of text re-use, with stable identifiers and an annotation system. Technically speaking, the editor is built via a connection of the TEI, the Open Annotation Core (OAC) data model, and the Collections, Indexes and Texts architecture (CITE) and Resource Description Framework (RDF <http://www.w3.org/RDF/>) triples. The connection between the texts is made with the CTS URN architecture. The lost works are in a Perseus Collection of Lost Content Items (urn:cite:perseus:lci). The relationship is between a text in that collection and the text quoted, both cited with unique identifiers. The editor interface is divided into two panels: on the left the source text and on the right the lost content item. The source text is provided in various editions with links to XML/TEI files and the *Perseus Projects*, with the possibility of highlighting the lost item. The information in the right panel is: translations alignments, commentaries, alignments, syntactic annotations of text re-uses, links. Using the CITE architecture we can recognize the specific edition a work belongs to, the level of hierarchy of the citation and if a text node is ordered. The annotations are expressed via the Open Annotation Core data model, which “provides a standard description mechanism for sharing Annotations between systems” (<http://openannotation.org/spec/core/>). It allows for the study of the “relationship between two or more resources, and their metadata, using an RDF graph...explains how to identify and describe the related resources, and how to provide information concerning the creation and intent of the Annotation”

⁵⁷ Berti, Almas, Crane, 2016.

⁵⁸ <http://www.dh.uni-leipzig.de/wo/perseids-fragmentary-texts-editor/>. Accessed 25 September 2016.

⁵⁹ <http://www.dh.uni-leipzig.de/wo/dfhg/>. Accessed 25 September 2016.

⁶⁰ <https://sites.tufts.edu/perseids/> Accessed 21 October 2015.

(<http://openannotation.org/spec/core/core.html>). In the Fragmentary Text Editor, the two OAC components, the target and the body refer to the resource annotated and the annotation content. Almas and Berti (2013) state that one of the OAC's most important features is its possibility of supporting "many-to-many relationships between annotation targets and annotation bodies" (par. 3.2). This can help with encoding a source text which is not continuous but interspersed with external words. Translations are treated as annotations and are considered a body. The interface is built using JSON-LD syntax (<http://www.w3.org/TR/json-ld-syntax>), which "allows us to build a dynamic display interface in Javascript that navigates the JSON-LD data object...and retrieves the datasets identified as the targets and bodies of the annotations at their addressable URIs" (par. 3.2). The goal of the Editor is to support fixed standards that allow for the connection of data from different sources and for the publication of the annotations in the *Perseus Digital Library* collection.

The *Digital Fragmenta Historicorum Graecorum*⁶¹ is also part of the *Leipzig Open Fragmentary Texts Series (LOFTS)*. It is an ongoing digital edition of the five volumes of the *Fragmenta Historicorum Graecorum* (FHG) (1841-1870) by Karl Müller. They hold extracts from different sources and as many as six hundred different authors, put in chronological order and organized following works and book numbers wherever possible, with a Latin translation. These volumes have been transferred into simple text format and subsequently encoded in XML/TEI under the CTS/CITE architecture. The project uses the TEI Guidelines Epidoc subset, which provides guidelines for the edition and encoding of ancient documents, inscriptions, papyri and manuscripts, and XSLT will be used for visualization. In its final version it will also be possible to see the images of the printed edition. The data will be published under a Creative Commons Attribution-Share Alike license. The data and project guidelines are available in an online repository, where we have access to the XML files of the already encoded authors and can see how the project is progressing. The Guidelines could be seen as a kind of paradigm for every project involving the use of printed editions in a digital project, as is the case of the proof of concept of this dissertation, the "Comprehensive Odyssey". Looking at the Guidelines, the first thing to be highlighted is the importance attributed to the text and to the characteristics of the specific printed edition used in one project. The XSLT file will be added at a later stage. The Guidelines explain every stage of the project, from listing the required elements to a description of

⁶¹ <http://opengreekandlatin.github.io/dfhg-dev/>. Accessed 25 September 2016.

We should report that the first volume of Müller is available on line from September 2016: <http://www.dfhg-project.org> Accessed 29 September 2016.

the workflow layout, the file names, the language codes, the page breaks, the Latin introductions to the sources and the numbering and the encoding of the fragments and their Latin translations. They also describe how to deal with footnotes, titles of works within the text, ancient authors' names, titles of fragmentary works in an author, book numbers, randomly dispersed words in Greek or Latin and tables and graphs. Every author will be transcribed in two XML files, one for the Greek text and one for the Latin, so that we can align the two texts at visualization stage. The encoding records page breaks, making a semantic distinction in the markup and putting the text of one author, at least the Greek original, in one XML file. This is its structure: a TEI Header holding all the encoding information in the <encodingDesc> section, including the authors' names, taken from the *TLG*, from a specific list and a specific identification number in the <publicationStmp> section; titles in the <head> element; a sequence of <div>s into which the text is divided. The Guidelines suggest the recommended way for encoding original typographic features and specific conventions present in the text. It is stressed that whenever a contributor is unsure about an encoding, s/he should add a comment in the XML file, but nothing should be omitted from the encoding. We will not describe here every single instruction available in the Guidelines, but we must stress that they require a high level of detail and precision in understanding the text and its parts and also a "solid knowledge of Greek and Latin as well as strong 'philological skills' with particular emphasis on fragmentary authors" (Guidelines, p. 2).

As we stated in the section on orality, literacy and the role of the digital medium, the aforementioned projects depict the relationship between users/readers and the editor of a digital edition. We should also stress that they are part of the University of Leipzig *Open Philology* project, whose present aim is to build a collection of classical text in order to create an open-source library. They follow the notions outlined by Crane (2015) about needing an open data policy in classics. He believes that if new research methods are to be taken advantage of, scholars should be able to download and redistribute their research material. In his opinion, researchers should think about the progress that may be made by ancient languages in modern societies and about the most effective way to achieve this. He realizes it might prove arduous to attain such goals because there are at least two difficulties to be overcome: the habit of handing every work to publishers with the notion of making a profit from it and the difficulty of regaining the rights previously forfeited. Apart from these difficulties, Professor Crane believes that there are two reasons why it should be worth changing policy and accepting the notion of open data. First, he writes about a sense of obligation to

“advance the intellectual life of humanity” (Crane, 2015). Second, he argues about the “scholarly need for open data” (Crane, 2015), meaning the “right to analyze, modify and then redistribute some or all of those texts in their altered form” (Crane, 2015). He would like scholars to open themselves up to open data and create “a comprehensive, open, extensible, textual space for the study of Greek and Latin. It is time to return, yet again, *ad fontes* – back to the sources” (Crane, 2015).

2.11 The Digital Loeb Classical Library.

The Digital Loeb Classical Library⁶² is the digital transposition of the printed editions of the Loeb Classical library series, initiated in 1912 and published in 2014 by Harvard University Press, as an online service available through a yearly subscription. Its interface faithfully reproduces the printed editions except for the footnotes which are not copied at the bottom of the page, but become pop-up links. This creates a different rendering on screen of the pages that have notes and of the ones that do not. There is a minimal degree of interaction through the web site, by adding notes, bookmarks and performing searches. Robertson (2014, p. 375) affirms that searches are not “morphologically aware”, so the search for a conjunctive will find only that form and no others. The results are based on the printed pages of the editions, so if someone searches for two words in a row when the words are on two different pages in one work, that work will not be displayed in the results. The Digital Loeb is self-referential: it does not give canonical references for the retrieved passages but the page numbers of the Loeb edition. Robertson suggests that the works in the Digital Loeb should also be published in secure e-book formats to be read without a computer and also that some users would like the subscription to be for life, not yearly.

⁶²<http://www.loebclassics.com> Last visited on the 3rd November 2014.

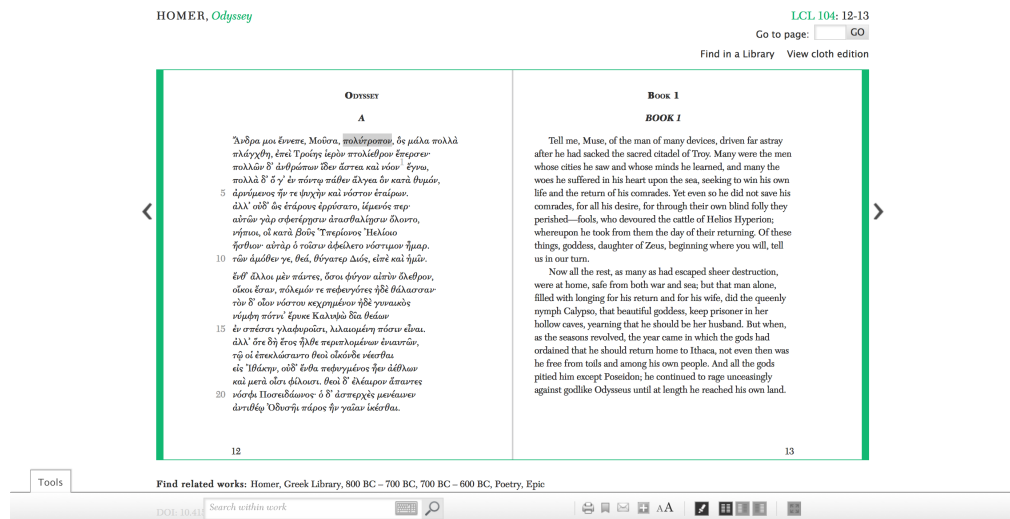


Figure 22 Digital Loeb: beginning of the *Odyssey*, word searched highlighted.

Following the previous description of open data, what strikes one about this project is its being built in a proprietary format with no possibility of looking at the source files. Crane⁶³ is doubtful about the usefulness of such a project considering its costs and its closure. This is another addition to projects using a proprietary system and it will not help in advancing Latin and Greek studies. It provides access to editions not available anywhere else, but is that so important? Furthermore, it addresses only English-speaking students and readers, not helping in furthering the study of Greek and Latin at translation level. Last but not least, the annotations of the users are attached to the page numberings of the Loeb printed edition, losing the traditional citation scheme. This project is part of the first age of digital works: Crane compares it to the incunabula, the first printed books that imitated manuscripts, stressing that “one might argue with some admiration that the DLCL carries the incunabular model as far as anyone, demonstrating its potential as well as its limitations” (Crane, 2015).

2.12 Conclusion.

To sum up, this chapter has dealt with digital various projects, some of which concerning Homer, but all taken into consideration while looking at developing the proof of concept for this dissertation, the “Comprehensive Odyssey”. They represent, albeit incompletely, a change in digital classics which has been developing over time. They tell us about the deep interest always expressed by Classics scholars towards the

⁶³ Gregory Crane: *The Digital Loeb Classical Library -- a view from Europe*, Universität Leipzig September 22, 2014
<https://docs.google.com/document/d/1JDLE-yA5sySj6zxoJQRolvgghugrf8DztAOCeagw-IM/edit?pli=1>
 Last visited on 4th November 2014.

new possibilities offered by the digital medium. Most importantly, they convey a sense of the beginning of a shift, from the notion of proprietary format to openness. It is not only this that catches the eye, but also the comparison between the fixity of the printed medium and the almost never-ending development of a digital edition. Furthermore, the growing interest in the community aspect of the digital medium and in collaboration as a means of pursuing the ‘completion’ of an edition is noteworthy. This goes from producing editions with annotation platforms, like *Perseids*, to crowdsourcing projects, like the *Suda On Line*. Examining the *New Testament Project*, and comparing it to the *Homer Multitext*, lets us understand how important it is to look at every possible source and material without losing the critical aspect of editing works in Classics. The *Homer Multitext* and the *Open Philology* projects are also very useful from a technical point of view: they have introduced the CTS and CITE architecture as means of addressing citations and the univocal numbering of witnesses. The *Euripides Scholia* were a good basis for the encoding of the scholia, making us aware of the difficulties of encoding the critical apparatus and of the various possibilities available through the TEI Guidelines.

What strikes one most in these projects is the difficulty of finding and adhering to an encoding system, even if XML and the TEI have become standard. As the projects advance in time, they adhere more to XML and the TEI, but it is difficult not to create a personal TEI subset for a specific encoding, sometimes moving away from the Guidelines. The same could be said for the CTS architecture and the DET system built by Robinson. At this point, a univocal line should be followed, not only to ensure interoperability but also to further digital editing, not hindering it with too many systems to be learnt and followed. This is not to say that the editing methods available are perfect but that changes should be made in them, not the creation of new systems.

In the following chapters we shall describe the proof of concept developed for this dissertation and take into account some of the aforementioned projects in order to assess the possibilities of producing an edition that could contain the *Odyssey*, the scholia and the indirect tradition, the first and the second of which bearing the critical apparatus.

Chapter 3 Digital Scholarly Editing and Textual Editing Theory

3.1 Digital scholarly editing, an introduction.

This chapter deals with major issues that have arisen while preparing digital scholarly projects and it presents different scholars' opinions. First, some key terms are discussed, followed by a description of current opinions on digital editions in the scholarly community. Finally, we shall focus on various topics of digital editing: the initial expectations, the influence of printed editions, diverse attitudes towards digital editions, the construction of an edition, the semiotics of digital editions and knowledge of the digital environment.

The Modern Language Association of America (MLA) recognised the importance of a digital component in scholarly editions in the 1992 version of the guidelines created by its Committee on Scholarly Editions. These suggested that scholars should also consider working on scholarly editions in electronic formats, such as on CD-ROM. A general document on electronic scholarly editions was issued in 1993. In 2006, they published the Guidelines for scholarly editors divided into principles, sources, orientation, and questions offering guidance for vetting scholarly editions. They are organised as a checklist divided into sub-headings: I Basic materials, Procedures, Conditions; II Textual essay; III Apparatus and extratextual materials; IV Matters of production; VI Electronic editions (Burnard et al. 2006). They provide a good picture of the expectations from new digital editions and show the rightful entrance of digital editing into the world of editing.

When scrolling through the subheadings, particularly those under 'Electronic editions', the first aspect that impresses one is the specific vocabulary used in the questions. Such vocabulary is so precise and innovative that at the end of the Guidelines there is a *Glossary of the terms used in the guiding questions*. Some of these terms require a thorough examination, which will be provided below.

3.2 Definitions.

Regarding this type of glossary, we first dedicate our attention to questions 23.0 and 23.1 of the Guidelines (p. 33), namely: "Is the text of the edition encoded in an ISO (*International Organization for Standardization A/N*) standard grammar such as XML or SGML?" and "Is the XML or SGML applied using relevant community guidelines

(e.g. the Text Encoding Initiative guidelines)?” Our examination then focuses on the terms ‘XML/SGML’, ‘TEI’, ‘edition’, ‘text’, ‘document’, ‘book’, and so on. Although they may seem common concepts, they assume a different connotation in digital scholarship.

3.2.1 The book.

According to Greetham (1994), the question “What is a book?” (p. 47) requires a more complex reply than expected, given the familiarity of our culture with books. The Oxford English Dictionary (OED) entry for ‘book’ includes two main meanings: first, “any portable material with handwriting on it” (Greetham: p. 47), such as a *volumen* or a roll, or “sheets or leaves fastened together at one edge called the *back*, so as to be opened at any particular place, the whole being protected by binding or covers of some kind [...]” (OED 3.a, 3.b). Second, a book is:

“a literary composition such as would occupy one or more volumes, without regard to the material form or forms in which it actually exists [...]. In sense 3b every volume is a ‘book’; whilst in sense 3c one ‘book’ may occupy several volumes; and on the other hand one large volume may contain several ‘books,’ i.e. literary works originally published as distinct books.” (OED 3.c)

The texts of manuscripts and printed books depend upon their bibliographical carriers for their appearances, forms and contents (Greetham 1994: 271) and can, in a sense, be called “books” themselves.

Regarding classical works, the “book” may be a critical scholarly text, but also the content of one document, a witness. Such witnesses can be found in codex, papyri and tablets of different materials. Following the previous definition of ‘book’ (3.b), we can say, in a sense, that they are books; the *Companion to the History of the Book* (2007: 2) states that books are “any piece of written or printed text that has been multiplied, distributed, or in some way made public.” The second part of the *Companion* concerns the “forms and contents of the books” (p. 2), called “The History of the Material Text”. It deals with the materiality and immateriality of the book, especially in the section “The World before the Codex”, where two chapters describe the clay tablet in Sumer, Assyria and Babylonia and the papyrus roll in Egypt, Greece, and Rome. In her article about Mesopotamia, Robson describes a book as a “means of recording and transmitting in writing a culture’s intellectual tradition” (p. 67) and attempts to give examples of existing written transmissions of intellectual culture in Mesopotamia, in order to be able to call the clay tablets “books”. Both Robson and

Roemer, who describes the papyrus roll, seem to like depicting the materiality of the book and not the book as a “literary composition” (OED 3.c). All these material objects constitute the primary sources for an edition of an ancient work as they contain the texts, which represent the witnesses of its tradition. The individual witnesses, once the edition is prepared for print, are normally only available from the *apparatus criticus*, while, when digital, they can be retrieved in their entirety for the user’s inspection.

Throughout the *Companion to the History of the Book*, the main topic is studying the forms and content of books. Their evolution as material objects from the manuscript era to the printing press and the Gutenberg revolution is described, analysing especially the evolution of book production and its commerce until the advent of the so called Global Market in present times. The history of the book as a material object provides the opportunity to focus not only on the new technologies available but also on the author’s role during the centuries; in this way, the notion of the book as a literary composition enters into the discussion. The spread of digital editions is leading to a reconsideration of these two definitions of book. When encoding a book, editors are encoding a literary composition, not a material object, unless they decide to encode a specific material object; in this case, its characteristics are fundamental in the reconstruction of a literary composition.

3.2.2 Edition and digital edition.

The main issue is whether there are any differences between a printed edition and a digital one. There is not only a difference in the medium, but also in what is entailed in the development and history of an edition. A printed edition is the final product of the editor’s critical analysis, while a digital edition might be the starting point for users/readers to understand what lies behind a critical edition.

It is not difficult to understand what an edition is. The OED defines ‘edition’ as: “One of the differing forms in which a literary work (or a collection of works) is published, either by the author himself, or by subsequent editors.” Nevertheless, there is much more than the above mentioned definition. For example, in his 2009 article, Price discusses and defines the term ‘edition’ together with ‘project’, ‘database’, ‘archive’ and ‘thematic research collection’. Likewise, in his book *Textual Scholarship* (1994), Greetham explains what is needed to achieve the creation of an edition (pp. 4-5) using the term textual scholarship, connected to all the disciplines associated with building an edition, which are: enumerative bibliography, descriptive bibliography, codicology and analytical bibliography, palaeography and diplomatics, stemmatics or textual analysis,

textual criticism or editing and apparatus, and historical collation. Greetham reports on how “textual studies is a discipline drowning in a sea of terms” (p. 1) which explains why, in his opinion, we need a clear examination, not only of the specific terms of textual scholarship but also of what it studies. The result of the study of these different subjects can lead to the production of various kinds of editions. Price (Par. 3) lists samples of printed editions, for example ‘selected’, ‘readers’ and ‘authoritative’ or even ‘definitive’ editions. He finally concentrates on ‘scholarly’, defining it as “established on explicitly stated principles by a person or a group with specialised knowledge [...] with rigor and expertise” (2009: Par. 3). This concept is strictly related to that of ‘critical edition’.

We should also point out that, from a philological standpoint, a critical edition is defined as the result of a scholar’s ‘journey’. According to Mordenti (2001), an edition reproduces a text to the best of the scholar’s ability, knowing that reproducing is exteriorising the reading process of the scholar. What an edition does is store/fixate a reading process, which embodies an understanding of the text.

The expression ‘digital (or electronic) edition’, being a fairly new endeavour, doubly needs a definition. Vanhoutte (2006) states that an electronic edition derives from textual scholarship, which is “the study of the different phases in the creative process of an author [...] and/or the study of the transmissional history of the text” (2009: 99). He states that it is designed for:

“a specific audience with clear project outlines. It should represent at least one version of the text or the work and should be created in a platform-independent and non-proprietary basis. Its creation is documented as part of the edition; and its editorial status is explicitly articulated” (p. 163).

We shall see shortly how digital editions create new theoretical and practical issues. A digital edition questions the relationship between the “editorial practices and the technological choices” (Apollon, Bélisle and Réginer, 2014, p. 17) but, more importantly, should be based upon a clear understanding of the objects of an edition, works, texts and documents, whose digital editions are handled using different technologies.

3.2.3 Text, work and document.

Regarding the object of textual scholarship studies, the most influential work from an English-speaking perspective can be considered *A Rationale of Textual*

Criticism by Tanselle (1989), which is divided into three different parts, where the first explains the nature of texts, the second the texts of documents and the third the texts of works. For Tanselle, texts have a special nature oscillating between offering a special connection with the past yet being something different. The word ‘text’ derives from the Latin verb *texere*, ‘weave the cloth’, ‘connect the string’⁶⁴, and can therefore be understood as a coherent unity of language, produced by the utterance of a verbal language or a speech (Ciotti: 1995). Greetham (2007: 24) adds: *textus* in Latin often meant something fixed, “referring to the validity of the biblical text” (p. 24), which cannot, by definition, change. Therefore, reading Greetham, ‘textuality’ is both fixed and ever changing and means any form of textual communications. McGann (2004: 198) claims that ‘text’ has long been considered a “keyword” in textual scholarship, even if it is not in the influential book of Raymond Williams, *Keywords: a Vocabulary of Culture and Society* (1976); on the contrary, McGann argues that ‘text’ can be considered “the one word to rule them all” (and by ‘them’ he means all the other keywords Williams defines).

Shillingsburg (1991) reports detailed definitions of text. We read a work represented in the materiality of the book, but we should not think of it as a fixed materialisation, but only as a ‘Version’, a means of classifying the work we have in front of us while reading. Shillingsburg (1991, p. 50) states that we can depict three kinds of ‘Versions’: Potential, Developing, and Essayed Version. The first exists only during composition and is unseen, the second is seen through drafts and revision and the third is fixed, to be read. What we read is called ‘Linguistic text’, consisting in words and punctuation, and a Linguistic text can be Conceptual, “the signs he [the author] “intended to inscribe”, Semiotic, “the signs found recorded in a physical form of the work” and Material, “the evidence that a Conceptual Text was formed and Uttered as a representation of a Version of the Work” (Shillingsburg 1991 p. 52-53). A Document holds the Linguistic Text, and every new developed copy of the Linguistic Text is a new document. Since documents are “physical, material objects that can be held in hand” (Shillingsburg, 1991, p. 54), Shillingsburg calls the combination of Linguistic Text and document Material Text, which has a further influence on the reader. Every reader becomes involved with the text of a work through ‘Performance’ (Shillingsburg, 1991, p. 57), which he divides into Creative, Production and Reception Performance

⁶⁴This definition can be found in Quintilian *Istitutio Oratoriae IX, 4, 13* (1997: 1568-1569), where Quintilian speaks about the strength and the importance of the position of words in a sentence as a medium that helps to give value, even to sentences with poor content.

(Shillingsburg, 1991, p. 57 – 58). Creative is “the authorial development of Essayed Versions...Linguistic Texts as found in manuscripts and authorially revised texts”. Production is “the scribal and publication development of Material Texts...typists' copies, proofs, and printed books”. Reception is “the development of a conceptualized Reception Text in the act of reading”. The Reception Text is “the Performed Text conceptualized by the reader in the act of reading; the decoded Material Text” (Shillingsburg, 1991, p. 81 – 82).

Shillingsburg's final point is how the reader can recognize a Reception Text as a specific Version. This happens through considering texts that refer to the same unities of Content, Time, Function and Material. The unity of Content means how much the Linguistic Text changes between different copies. The unity of Time refers to Time as a way of measuring the changes between two Versions. The unity of Function refers to why a text was written and how it might vary if the scope changes. The unity of Material regards the work as a Material Object where all the aspects of the work Performances come together.

Following Tanselle, the ‘texts of works’ and the ‘texts of documents’ are different. His use of the words ‘document’ and ‘work’ derives from the general definitions of the OED, but with a small shift in meaning. A work is “A literary or musical composition [...] (a person's) writings or compositions as a whole” and a document is “Something written, inscribed, etc., which furnishes evidence or information upon any subject, as a manuscript, title-deed, tomb-stone, coin, picture, etc.” (OED) In Tanselle's opinion, a work is the abstract, comprehensive idea of a literary composition, while a document is each physical embodiment or instance of this literary composition.

As far as documents are concerned, every copy is a single piece of the tradition, “a separate piece of documentary evidence” (Tanselle, 1989, p. 55) influencing the text of the work by its different physicality. If a scholar edits the text of a document s/he should not make changes because s/he is paying attention to a document, not to the text of a work as a whole. It is always difficult to replicate the characteristics of a document, its three-dimensional aspect, without adding another document to the tradition. Furthermore, copies of documents are only convenient artefacts and, therefore, all different. This does not mean that we should not publish documentary editions. Tanselle gives two reasons for doing so: a copy is always worthwhile, it serves as a means for handing down a document to posterity, and by producing such an edition an editor helps

the readers to understand such a document thanks to his/her acquired knowledge of the subject.

Concerning the text of works, we look for the aim of the editor while analysing the documents and progressing towards emendations. S/he should decide which stage s/he is trying to reconstruct, which is generally a work deemed finished by “those responsible for it” (Tanselle, 1989, p. 73), in general meaning the author, even if it will be impossible to reproduce the original text which, according to Tanselle, is the intended text in the mind of the author at the time of writing. What would be possible, always remembering that every decision about an edition is subjective, is to reach the “text of a work the author considered to represent the work most satisfactorily at a given time” (Tanselle, 1989, p. 83). Editing works like the *Odyssey* means trying to reconstruct the earliest common manuscript in the tradition, being aware that not every characteristic of a document is part of the text the author intended. Nevertheless, in Tanselle’s opinion “we have reason to persist in the effort to define the flowerings of previous human thought” (Tanselle, 2989, p. 93).

Concerning documents, Tanselle refers not only to manuscripts but also to print, which, as Ong stressed (1982, p. 129-130), created a sense of ending and conclusion, where the work is fixed forever: “Print encloses thought in thousands of copies of a work of exactly the same visual and physical consistency” (Ong, 1982, p. 130). Once the composition for print is finalized there is no room for changes or additions, as there was in a manuscript. Even with slight differences between copies/documents, it is mainly true that print entails a sense of physical closure, giving the “impression, unintentionally and subtly, but very really, that the material the text deals with is similarly complete or self-consistent” (Ong, 1982, p. 130). Although print changed the variations we encounter when dealing with a work, they still exist and are important in reconstructing the tradition. Even more, they exist in manuscripts, which Ong believes are “tied to the commonplace tradition of the old oral world, it [Manuscript culture] deliberately created texts out of other texts, borrowing, adapting, sharing the common, originally oral, formulas and themes, even though it worked them up into fresh literary forms impossible without writing” (Ong, 1982, p. 131). In the Homeric poems the variants might come from the oral tradition of the poems, so their origin might also come from the social aspect of oral composition in performance.

Cerquiglini, analysing the history of French philology, particularly the process of editing French medieval manuscripts, can be cited as a counterpart to Tanselle. In his work “Éloge de la Variante” (1989), he argues in favour of critically considering

variants in medieval manuscripts, claiming that variants represent the building of a writing sequence and need to be re-evaluated. In his opinion, text as conceived by the author is lost, while variants will be everlasting, each manuscript holding a version of the text. The computer can, in his opinion, help understand the changes of the text in time, by reproducing the medieval text alongside its variants.

3.2.4 Digital text.

According to Buzzetti and McGann (2006), a digital text is “information encoded as characters or sequences of characters” and it is a “non volatile physical thing” (p. 60) stored inside a computer; it is coded information, where each character holds its own position. To give the computer the knowledge that the encoded information is a text, we should add markup to the text. A text is a complex object, not only a string of characters, but also a group of various structural levels, which need to be properly interpreted to create a correct digital representation.

Markup permits the digital representation of a textual document on a digital support so that it can be recognised and treated as a text by the computer. “By markup language we mean a set of markup conventions used together for encoding texts. A markup language must specify how markup is to be distinguished from text, what markup is allowed, what markup is required, and what the markup means” (TEI P5: Guidelines for Electronic Text Encoding and Interchange, 2008). The word ‘markup’ comes from the typographic world, demonstrating how digital texts cannot escape the relationship with printed editions. In fact, markup designates, in traditional typographic printing, the symbols and annotations added by the author or the editor as instructions to typographers, about how to process the text from a graphic point of view. In modern terms, within a digital environment, markup identifies the logical or physical structure of a text, leading the way to further analysis. It is a code, made up of a sequence of letters and numbers, carrying a precise instruction for the computer on how to treat a sequence of characters as a text.

Perhaps the most important markup language is SGML, published in 1986 by the ISO under the name ISO 8879: Information Processing - Text and Office Systems - *Standard Generalized Markup Language* (SGML) (ISO 1986), a descriptive language for publication. SGML is a metalanguage, i.e. a language created to define another language. SGML is also a metagrammar, i.e. a grammar for describing other grammars, that is, a language used to write machine-readable definitions for a descriptive markup language. Its importance resides in it being at the base of pervasive technologies, such

as HTML and XML. In 1996, the World Wide Web Consortium released the *Proposed Recommendation* for a new encoding language, the *Extensible Markup Language, XML*, which became official with the name *Extensible Mark-up Language (XML)* version 1.0 in 1998. XML is another metalanguage, simpler than SGML and therefore more suited to being employed both on the web and beyond. XML has become a pervasive technology and is strongly rooted in the Digital Humanities community.

The Text Encoding Initiative (TEI)⁶⁵ is a consortium born in 1987 to produce and maintain the TEI Guidelines as the recommended standard for the textual markup of humanities texts. Its aim is to define a standard for encoding, steered towards the normalisation of the standards of memorisation, in order to have a better interchange of information. The TEI represents the *de facto* underlying standard for the creation of digital scholarly editions and is currently expressed in XML.

3.3 A digital edition as a scholarly endeavour.

3.3.1 Digital editions viewed by digital editors.

Attempting to include electronic editions in the context of scholarly editing, Neel Smith (2004), Buzzetti and McGann (2006) describe digital editions as a new kind of scholarly edition. According to Smith (p. 307), Buzzetti and McGann (2006), editions produced with digital tools are within the realm of scholarly editing and on the same level as facsimile editing and critical editing, embedding the same rules, adding the delivery via computer and all the new prospects the use of the digital medium entails. Price (2007) believes the scholarly attribute could be assigned to projects whose text is encoded with consistency, and when scholars use established and approved rules in creating texts, introductions, notes and critical apparatus. He argues: “mere digitizing produces information; in contrast, scholarly editing produces knowledge” (p. 435). In Smith’s opinion, we are moving from a world of faith-based editions (p. 311), i.e. the printed ones, to a world where we can understand and check the editorial process better, giving the reader access to the background material of the edition. For example, in the first chapter we described van Thiel’s *Odyssey* edition and we stressed how the author pointed out in the introduction that the reader can only acknowledge the decisions of the editor, because they were made by himself with no explanations in the critical apparatus.

⁶⁵ For a more detailed description of SGML, XML and the TEI see: A Gentle Introduction to XML, in *TEI P5: Guidelines for Electronic Text Encoding and Interchange*, 2014.

This is an example of what Smith called faith-based editions, and we might say that all printed editions, even if to various degrees, share this notion. An example is Pontani's edition of the *Odyssey* scholia, despite his providing a richer critical apparatus than van Thiel. Depending on how a digital edition is produced, Smith's assertion of more transparency in a digital edition could be true.

Transparency is a way of providing access to basic witnesses that is almost impossible in a printed edition. Nevertheless, we should stress that any kind of reproduction of primary sources would still require a certain amount of scholarly analysis, as we can see in the *Homer Multitext*. Transparency means providing the user/reader with the material employed in the production of a critical edition, so that s/he can reflect on the process and partake in the decision process.

There is another kind of transparency, and it refers to the steps of the work being carried out. Priego, in an online paper, stresses how transparency is connected with openness and collaboration and is about sharing, making others aware of the process and of its goals:

“it means allowing others in whilst there is still time to make a difference. Transparency cannot and will not get rid of exclusion. Exclusion of this or that might be at the heart of the academic endeavour, but transparency about the criteria will make a lot of us feel less alienated and make us more understanding of why and how certain things that we care about happen” (Priego, 2013).

New technologies are crucial for the advancement of editorial practices, but Smith concedes that they are not yet strong enough to accommodate all the qualities of a printed text. On the contrary, Buzzetti-McGann believe that digital editions will maintain the tradition of rules and approved research practices of printed editions. In their and Smith's vision, digital editions will open up ways of exploring texts and, in addition, will transmit more of what is found on, or lies behind, the written page, transforming the way editing is conceived, helping scholars create an editorial environment which can aggregate materials normally found in different places. Price (2007) claims that a digital edition should not be conceived as an isolated object, but as part of the 'archives' and should comply with international standards. However, being too closely tied to the procedures of printed editions might become problematic if pursued too strictly. In fact, Crane et al. (2007) state that, even if classical studies were one of the first to embrace the computer, the inertia of previous print practices still determines the way scholarly documents are created and published.

3.3.2 The 'traditionalists' perspective.

We have hitherto examined digital scholarly editions from the point of view of digital studies, but similar considerations can be made from a purely traditional perspective.

Stussi (1997) and Greetham (1994) wrote two books, one about Italian philology and the other about Textual Scholarship, and in both these books there are glimpses of the advent of the digital medium and of its qualities and its defects. Greetham (1994), in the chapter 'Editing the text: Scholarly editing', connects the production of critical editions with the digital medium because, in his vision, computers can be useful in handling large sets of material. Greetham declares: "The future of scholarly editing is clearly a very exciting and provocative one, as these technological possibilities become reality. The computer is an essential and inevitable part of scholarly editing" (p. 357). Towards the end of his book on Italian philology (pp. 242-246), Stussi states that one of the most interesting developments carried by the new medium is managing to store different textual unities and then link them together to produce a hypertext. His notion of hypertext is indeed very convincing as he imagines displaying the text, the notes and the apparatus in different panels, on the same screen. He then adds that scholars could also create a hyper-edition or a multimedia hypertext by adding digital images. In the same way, Greetham talks about "reader-designed critical editions" (p. 360), namely editions holding all the material that, in print, would have been kept and handled only by the editor. In this way, the reader would become engaged with the text, and could study every aspect of it. This came at a time when the computer was only used in editing, producing and typesetting printed editions, but he understood that new habits were on the way, given the already available cumulative storage of every variant of a text.

Notwithstanding the positive aspects mentioned in employing the digital medium in critical editing, they express their concerns. Firstly, Stussi states that this new edition cannot substitute the direct inspection of the original documents. Secondly, digital technology should be used cautiously, and scholars should not become blindly over-enthusiastic. Furthermore, he contests those editors who merely present variants on screen, leaving their assembling to the reader, maintaining that they somehow recede from their scholarly duty. In the same way, Greetham repeats that "editing is ultimately, finally, a critical activity" (pp. 370-371) demanding the control of the editor, whose importance is increasing, rather than diminishing, in these new forms of critical editions. Stussi's assertion that prudence should keep good company to scholarly work in the

digital environment needs always to be remembered as a good principle in order not to be inclined towards over-enthusiasm at the planning stages of a project. Both authors positively recognise that change in scholarly editing cannot be underestimated, nevertheless what they express should not become a hindrance to a digital edition. We shall describe below how scholars who deal mainly with the printed medium have to change the way they address the production of an edition, combining their attention to the text they are dealing with and the medium they are working with.

3.4 Digital and print medium.

3.4.1 Digital medium.

A first consideration concerns the relationship between the digital medium and print-based publications. First, we shall describe the point of view of a digital editor, who very clearly has to deal with the move from printed to digital editions, especially from the perspective of the difference between the two final outputs. A digital edition originates from the digitisation of a piece of work previously available only as a printed edition or as a manuscript, and which “might refer to any portable materials with handwriting on it” (Greetham 1994: 49). Digitisation alters the making of an edition, which, in turn, can cause a series of problems. Rehbein (2008) exemplifies this complex shift from paper to digital writing with the making of the edition of the letters of the Irish painter James Barry. This edition was designed to be digital, but its editor, Tim McLoughlin, was an expert scholarly editor with no experience in digital practices. Rehbein argues that the true problem was not the transition from one medium to another but the need to change the form of the final output from the printed page to the computer screen. Actually, the most difficult thing for a scholar of the printed medium, in Rehbein’s opinion, was shifting his/her focus from “layout and type-setting to the meaning of features” (p. 8). In describing these new procedures, Rehbein clearly states that “thinking of an edition must be independent from its medium”; he also declares his disbelief in the existence of a so-called “digital thinking” (p. 2) as opposed to “classical thinking” (p. 2). Subsequently, he adds: “undoubtedly editorial principles should be independent from the medium” (p. 7). However, it is difficult to follow this opinion. Firstly, the passage from print to digital create a mental move, or a shift from one way of thinking to another. Furthermore, the digital medium represents a completely different environment and, as Buzzetti wrote, “a digital edition is considered textual data to be processed” (2009: 47), rather than words to be read. This data needs to be

exploited, which can be effected solely by using electronic tools, something completely different from the printed page. In her article on documentary editions, Pierazzo (2011, p. 473) explains how digital editions are complex new objects, particularly when they are based on text encoding. These editions consist in one or more XML/TEI source files and a set of instructions, which will transform the encoded source files in order to make them visible on the screen. These instructions take the form of a set of scripts, capable of creating one or more outputs, and which, concerning documentary editions, can represent different views or editions. This reality is indeed very different from a print-based workflow. This might be described as another aspect of the abovementioned transparency of the digital medium because, should the editor wish to provide the source files, it could be possible to examine the underlying instructions needed to produce the output and the digital text. One of the issues that digital projects face is not making the source files available, often because they are published with a proprietary software, but sometimes also for copyright reasons.

Following what has been mentioned in this and in the previous chapter, we can understand why it is important to underline that in the passage from print to digital one of the first requisites is to use non-proprietary software (Vanhoutte 2006: 163). The same requirement is listed among the questions in the MLA Guidelines, where it is stated that editions should render available for examination either their underlying markup or the source code of the software if it was created specifically for an edition. The concept of a non-proprietary, open source edition is also in the proceedings of a speech by Sperberg-McQueen at the MLA, in 1994. He affirmed that:

“Electronic scholarly editions should not require a particular type of computer, or a particular piece of software, they should not become technically obsolete before they are intellectually obsolete, they should not abandon traditional intellectual requirement [...] they should have accessibility without needless technical barriers to use; longevity; and intellectual integrity.”

To return to transparency and the availability of the source files, looking at the digital projects described in the previous chapter, it is clear that some have more transparency than others: sometimes there is a greater chance of checking the stages that came into the making of the edition. We refer to the digital material on which a project is based. For example, on the one hand, the editors of the *TLG* do not allow access to their source files and the *Loeb Digital Library* is a digital transposition of a printed edition into a proprietary format. Nevertheless, neither of these projects can be described as non-transparent because they provide the complete list of their sources,

which are, respectively, in the *TLG* Canon and in its printed editions. Examples on how the sources have been digitised are missing. On the other hand, the projects of the *Open Philology* framework make the source files available and are also open to collaboration. As we have seen, it is not only sharing the source files, but also the Guidelines as in the *DFHG* or in the *Homer Multitext*. Similarly, it is possible to follow the process behind the source files. Transparency, for example, might mean providing the users/readers with all the transcripts upon which the choice of a base text is made, such as in the *New Testament* project. The editor makes his/her choices clear to the users/readers who have the chance to understand and challenge them better. We might state that in a digital edition there is as much transparency as the editors open their projects to the users/readers, while in a printed edition the constraints of the printed page add a layer to the editors' decisions.

3.4.2 Print medium.

The James Barry edition mentioned above is interesting: it enables us to understand how this endeavour was seen from two different points of view. The previous discussion outlined the opinions of a digital editions expert, Malte Rehbein, while this paragraph presents McLoughlin's point of view, contained in a parallel article (2008). His contribution is aimed at those scholars who try to "bridge the gap" between the printed and the digital world. The author depicts the passage of the text from one medium to another and the consequences of such a move. In his opinion, the vocabulary is the first thing that changes: from 'book', 'reader', 'text' and 'reading' to 'text', 'user', 'archive', and 'data searching' or 'browsing'. The text becomes different: it is not expected to be read in full, as is normal for a printed edition, and it will be searched in the same way as many other resources on the web. In his opinion, the greatest differences are not in the evolution of scholarly editing tasks, but in the "level of context" (p. 5). Digital editions can contain, in fact, materials not included in a printed edition, but which can find room in the digital environment, leading to a profound change in how editors must rethink their work. The text gains new forms, and the editor must design ways of delivering it, for reading purposes and for other types of interactions, such as searching and browsing. McLoughlin goes on to advise other editors to try to envisage what might be noteworthy for users with only a generic interest in the text. In the end he states that there is a need to "bridge the gap" between information technology and humanities and underlines the need to work on integrating their practices.

When considering the shift from printed to digital editions, in 2001 Mordenti addressed the problem of the true understanding of the digital medium, mainly from a theoretical point of view because he does not describe any specific project. He outlines two phases in the history of its relationship with the study of classics. In the first, computers were only tools for the solution of the most complex problems of printed works and, thus, scholars exploited only the mechanical capabilities of such tools. In a second phase, computers were recognised as a new medium with their own, new, epistemological problems that needed to be addressed. Mordenti perhaps exaggerates a little in declaring that the new invention (the computer) provides the opportunity to eliminate the old configuration of problems, since problems will be completely reshaped, and their former significance may even come to be considered totally meaningless. In his opinion, information technology poses new questions to classics scholars, and they will find it difficult to answer them if they cling to their old, established practices.

It is difficult to find a precise description of these new, allegedly posed questions because much of the discussion about new questions and problems is carried out without specifying them. Nevertheless, we can attempt a description of such demands. First, the digital medium makes scholars rethink their established opinions on 'text', 'work', and 'edition'. As Pierazzo (2011) states, digital editions are substantially different, yet there is more at stake here. The decision to create a digital edition must always stem from the question as to whether there is a need for this kind of edition. When talking about documentary editions, Pierazzo (2011) asks herself what a documentary edition is and what it contains, thus leading to understanding scholarly activities and where scholars need to stop in their selective process. She argues that the questions we need to ask are "the purpose of an edition, the needs of the others, the nature of the document, the capabilities of the publishing technology and the cost of encoding and the amount of time available for the job" (p. 468), not what can be reproduced in print. Gabler (2010) claims that, despite editions being increasingly created as digital, the print medium still plays an important role, particularly regarding visualisation. In his opinion, user interfaces have not been yet studied, whereas they should be. This aspect opens up another question, i.e. who the users are, since the free availability on the web of such resources makes unexpected visitors very likely. Gabler also states how the digital environment provides a more central focus on documentary evidence, as "editorial objects are set free" in this new editorial medium: the text

becomes “a function of the document [...] always constructs from documents” (p. 51).

3.5 Are digital scholarly editions worthwhile?

The positions discussed so far reflect a confident attitude towards the digital medium and the possibilities afforded by electronic editions. Nevertheless, more recent contributions seem to indicate a drop in this initial enthusiasm, and there are even scholars who think that, in certain aspects, digital may not be the best solution. Their reflections stem from comparing e-books with other digital content to an analysis of those who might be interested in critical editions and the recognition they might receive from a scholarly public’s perspective. In the main, many of their discussions stem from the importance recognised and attributed to the printed book, in its physical and social dimension.

One such scholar is Robinson (2010), who observes that people do not buy as many e-books as digital music or films. In his opinion, digital music and movies offer an advantage in the quality of the content they provide to the customer, compared to their analogue predecessor. On the contrary, digital books do not seem able to offer anything that may compensate for the loss of the physical object, which can generate a sense of possession. He concludes by suggesting that digital scholars need to create an environment that will persuade people to embrace this new technology. Sutherland (2009) expresses a slightly different opinion from Robinson (2010), although she starts with similar considerations: an unenthusiastic opinion of the outcome of digital editions. She argues that the feeling of spatial liberation generated by computers gave the impression that the ways in which editions are produced can be revolutionised and that, in actual fact, the digital medium can hold many historical versions of the text, together with the facsimile of the artefacts for direct examination, providing what she calls a “full information display” (2009).

Both Sutherland (2009) and Vanhoutte (2009), albeit in different ways, share a similar opinion of the real number of people who might be interested in a digital edition. Despite the undeniable improvement in textual dissemination, Sutherland illustrates some issues that suggest a digital edition may not even be worth creating. In her opinion, scholars overestimated the true interest in critical editions, and she questions who will use critical digital editions when only a small community has very little trust even in critical editions on paper. Following the same reasoning, but more specifically, Vanhoutte (2009) examines the public for scholarly editions, concluding that the latter

has been overestimated; he suggests four reasons for this. First, he argues that “buyers of books” (p. 102) are interested in books as “physical objects” rather than in their content (p. 102). Second, people that enjoy literature will not buy a reliable edition but the most accessible one. This leads to points three and four: the public for scholarly editions consists mainly in scholars and students interested in a title, yet they will not all eventually buy the critical edition. Shillingsburg shares this view of the scholarly community (2009. Par. 12-30), arguing that ‘convenience’ (easiness) is the main reason why scholars, and people in general, prefer one edition to another.

Another key aspect is the recognised important sociological and physical power of the book. Both Sutherland and Darnton affirm that the printed book is something that will not fade away and will remain forever in both format and influence. Comparing the two media, Sutherland (2009) presents the printed format as a stable achievement and states that, to her mind, its stability permits variance in interpretation and critical reflection. On the other hand, while it is true that a fixed text is presented as free of editorial problems that have been solved elsewhere, the digital medium can also provoke lively scholarly discussions. This Sutherland herself concedes, describing the digital medium as a vehicle that can perform “a sociological dimension” and can “simulate the book”, thus enhancing its visual aspect and portability (p. 20). In future we may discover how digitisation can enhance aspects of the print culture, or how it could produce aspects not effectively explored before, but only if scholars exploit the potential of the digital environment. However, Buzzetti (2009) stresses that not only are humanities scholars very reluctant to embrace new practices, but also that conventional habits in editorial work persist.

Darnton (2009) depicts the book as holding “an extraordinary staying power” (p. 68), while asking why electronic publications receive so much attention despite being clearly inadequate for any scholarly use. In his opinion, at first scholars were affected by a “utopian enthusiasm”, then followed by a stage of “disillusionment”, eventually reaching a “tendency towards pragmatism” (p. 69). He thinks scholars should not have unrealistic expectations: the future of the “world of learning” will remain in print, the digital book “act[ing] as a supplement to, not a substitute for, Gutenberg’s great machine” (p. 77). However, electronic publications may be a possible solution for monographs, which are becoming more and more endangered in scholarly publishing due to poor sales and exorbitant production costs.

In conclusion, we can follow, and agree with, Eggert (2010), who reports scholars’ fears concerning digital editions. He underlines how digital editions have their

own features, which could cause additional problems; for instance, they are far more open to the provision of ancillary material which, on the other hand, gives rise to the fear of diminishing editorial standards. According to Eggert, they have failed to receive wide scholarly recognition until now both because they have been created using proprietary software and because the enormous amount of work they require if they are to be constructed with quality control has not yet been fully comprehended.

3.6 The role of the editor.

Some contributors to this debate have examined the role of the editor in a world where every user can become the editor of his/her own edition. They recognise that the editor is no longer the producer of a single, finished, untouchable edition and they allow for the publication of editions that will bear a sense of openness and collaboration between editors and users/readers. Gabler (2010) and Robinson (2009) describe editions as places where there is no longer a fixed text, but a continuum of links and collaborative work on all the aspects of an edition.

In Gabler's opinion (2010), digital editions could become "instruments for exploration" (p. 46) in a digital environment consisting in continuous links and connections. In his article "Editing without walls" (2010), Robinson conceives the edition as a place where scholars, students, libraries and various experts may work both together and separately on different aspects: transcription, description of sources, collation and commentaries. While discussing the model Sutherland (2009) criticises, Robinson thinks differently about the future, manifesting it, for example, in his opinions about the editor, which is more positive than the abovementioned evaluation of the present status of digital editions. Following Gabler and Robinson in considering digital editions constructed in this way, we should also argue for a change in the concept of the editor. Editors will still be creating editions, but their endeavours will no longer be sacred, untouchable texts, only proposed solutions. This is not a model where everyone is his/her own editor, but where scholars can provide and develop an agreed set of rules and guidelines to enthusiastic beginners. At present, this represents only an idealised model, as digital editions are still heavily influenced by the fixed form of the printed codex (Gabler, 2010, p. 52).

Mandell (2011) well describes the change in the role of the editor in the concluding essay to a special issue on scholarly editing of *Literature Compass*, where she speaks of the difference between author and editor. For a modern author, the editor is a "conveyor of authorial inscription" (p. 122), whereas s/he actually works as the

intermediary between the author and the reader. Mandell sees this notion of editor as a proposer of solutions, as suggested by Gabler, or as an “act of reading or writing”: if the editor is no longer the “conveyor of authorial inscription” but the creator of one interpretation of the authorial inscription, she fears this might lead to the collapse of the distinction between author and editor. It is worth noting that the division of roles, which Mandell claims is essential, pertains only to modern times, and is not applicable to classical texts. Indeed, the text the witnesses of classical texts reveal is no longer the text of the author, which has been lost forever; the only possibility is, therefore, that the role of the editor should become interwoven with that of the reader, who can hence become an editor himself. However, one must still recall Vanhoutte (2009), who states that the possibilities of the digital medium of showing all the editorial materials “does not discharge the editor from a responsibility to serve the text and support its function in society” (p. 109).

3.7 The user.

One of the most important rules in producing a digital edition is the need for explicit principles in the design and encoding of the digital text. The main imperative is declaring the purpose of the edition, and one way of doing so is outlining who the final user will be. Generally, ‘users’ are people who will be making use of the edition when completed, and digital editions may include unforeseen, unintended, visitors. In this respect, the encoding phase is decisive since it is then that the editor selects the features that will be made available to the users.

The ‘traditional’ relationship between editor and user is summarised by Mordenti (2001. p. 65): the author creates a work, which is written and comes to us in manuscript form. The editor reads the manuscript, prepares an edition, which is printed, whose text then reaches the reader. This description was employed in greater detail in the first chapter when describing the change in the communicative environment between the written and the digital medium and the role of orality. We should recall here that whichever text reaches the reader depends on the editor’s decision and on the code they share. However, in a digital environment, the reader/user may be given access to the background material of the editor, something that has important consequences, as we saw in the digital projects described in the second chapter: it will change the way the reader-user will view the edition and interact with the material provided.

First, we should agree on a definition of who deals with a digital edition, an agreement as to whom editors now refer when producing an edition, and, second, an

analysis of the relationship between the editor and the readers who are just part of the public of a digital edition. It is not clear whether the addressees of a digital edition should be called users or readers because the digital medium changes the nature of the receiver, due to the type of medium. In his article of 2010, McLoughlin dedicates one paragraph to defining the user, stating that “a user does not behave like a reader” (p. 8), because users come into possession of an edition in many different, personalised ways by browsing and searching it. A reader, on the other hand, represents the final stage in the transmission of a work. But can a reader also be a user? Or, on the contrary, can a user also be a reader? At present, this question has no answer; how digital editions are used has to be analysed to discover whether they are merely “used” (for searching information, for instance) or also read, in a classical sense (see Sutherland et al., 2012).

Gabler and O'Donnell describe how the user/readers interact with the editor in a digital edition and what this interactivity might provide for a project. Gabler (2010) sustains that the definition of ‘user-reader’ has changed with the advent of the digital medium and its capacity to provide a level of interactivity, which is completely new to readers of printed critical editions. In his analysis, in the print environment the user was a “peer and partner” of the editor, but there was also a “lack of incentive” to provide him/her with a chance of “interacting with the edition” (p. 48). According to O'Donnell (2010), this interactivity lies mainly in choosing between multiple views of the same text. O'Donnell discusses the principles behind the decision to provide a printed edition with a CD-ROM of his edition of *Cædmon's Hymn*. On the printed page, the user finds the information decided by the editor, who takes responsibility for her/his choices. On the other hand, “on screen we can let the user interact with the same editorial texts, but also experiment with the data upon which these texts are based” (p. 115). However, experimenting depends entirely on the choices of the editor and on the user she/he has in mind when preparing the edition.

In his article, Lavagnino (2009) offers the most accurate description of the present relationship between editor and reader. In his opinion, users do not understand what editors do, while editors in turn do not understand their expectations from an edition. Discussing editions of English texts, he depicts two types of public: “Readers who are editors, and readers who are not editors but who study English language literature” (p. 65). Editors want readers to be interested not only in the text but also in the commentary and the apparatus, but they fail to realise that their work is intelligible only to scholars of the same subject (i.e. textual scholarship). Lavagnino refers to “the popular audience” and “the common reader”, readers not involved in the editing process,

but sustains that producers of editions seem to misunderstand the different needs of scholars and of these common readers. Moreover, in his opinion, the greatest problem is that editors are required to serve a community disinterested in editorial practice; he therefore questions how best to convey the meanings of the apparatus and of the critical endeavour to the reader. In Lavagnino's opinion, one way of treating different kinds of public may be to give each one its own edition, but this might prove unsatisfactory, particularly when one edition is achieved by removing the apparatus. We can explain better this situation by comparing what happened at the dawn of the World Wide Web when, on the one hand, people felt that they could find everything at the click on a mouse and, subsequently, they transferred this desire to expecting every edition to be "all-inclusive" (p. 70). On the other hand, the Web can be seen as holding much unwanted information, and users wished to be able to find only what they needed at a specific time. Lavagnino attempts to solve this conflict by providing three suggestions: firstly, the editor could try to offer users a better way of filtering the data, leaving out unwanted information; secondly, editions could be more collaborative; and, finally, editors could give the user the possibility to introduce a critical view of the texts provided (p. 75). As we saw in the previous chapter, digital projects can give the viewers choices and there are more collaborative projects. For example, the *Euripides Scholia* permits the user to choose one kind of visualisation and the amount of information, albeit in a pre-established way.

As far as the notion of an "all-inclusive" edition is concerned, Dahlström (2009) is convinced that producing an edition with all the documents necessary for the user to become editor is not achievable in practice; this because it is not possible to "encode all the aspects of a document" (p. 35). According to Vanhoutte (2010), complete, definitive encoding is not possible: every instance of encoding is, by definition, subjective and selective. This last point is challenging, since none of the abovementioned projects could be described as "all-inclusive", and none of the encoding is definitive. It might seem that the *Homer Multitext* might look at storing and encoding all the manuscripts of the Poems, but not all the characteristics of the documents will be encoded. This project, like any other, is selective, i.e. produced following guidelines. If we look at the *DFHG*, which deals with a printed critical edition of Greek fragmentary historians, the guidelines provide a set of information on how to deal with the features of the printed edition, which ones to encode and how. The proof of concept produced for this dissertation does not challenge these structures; it recognises that choices need to be made when dealing with encoding documents, whether manuscripts or printed editions,

so every encoding is subjective. Nevertheless, the idea was to see whether we could encode all the material of the indirect tradition, i.e. all the secondary sources, even if not in an “all-inclusive” way. There is, at present, no critical apparatus for the secondary sources, not every characteristic of the documents, the printed editions, was encoded, and only one edition was chosen for each of them. In the broadest sense of the term, this is not an “all-inclusive encoding”. To encode all the material would mean encoding every source, but, as we shall see in Chapter 5, even saying this is subjective, as choices have to be made on which sources to encode. We shall see below to what extent this might be achievable or not, but we believe that it should be the aim of a project, constantly struggling, but not starting out with the idea of not being able to encode everything available. Even in the *New Testament* Project they are providing only a selection of manuscripts, there is always an editor making choices, but in a more positive way than in a printed edition: the information provided is much more complete. If the *New Testament* Project achieves a degree of feasibility, might it not be possible for the Homeric Poems to be similarly edited? We explained how van Thiel published an edition based on more recent medieval manuscripts and it might be possible to provide an edition with the encoding of all the manuscripts he chose. This is not the aim of my proof of concept, but if the secondary sources could be encoded in their entirety together with the scholia, we could provide the completeness of the secondary tradition without being lost in a sea of material too great to handle.

3.8 Copyright.

We shall explain the notion of copyright and its relationship with digital editions, first by describing the concepts of facsimile reproduction and intellectual property with ownership of physical objects together with the notions of fair use and trust. Second, we shall represent the copyright issues that stem from working on the proof of concept for this dissertation, the “Comprehensive Odyssey”. There will also be a summary of some case studies from abovementioned digital projects, such as the *TLG* and the *Digital Loeb*.

3.8.1 Facsimile reproductions, Intellectual property, fair use and trust.

One possible threat to the production of digital editions is the copyright protecting facsimile reproductions. Copyright on images for manuscripts was not unfamiliar to the printed world, but the vast availability of digital reproductions has made it more urgent. It is a rather complex issue since the legal concept of copyright

does not seem able to follow the spread of digital technology and has, therefore, become more fluid. Another aspect that hinders using digital images is the lack of national, regional and institutional common policies concerning the reproduction of digital objects. During a workshop at the Max Planck Institute for the History of Science in 2008, scholars from different international institutions discussed how to conjugate scholarly needs and the requirements of national and local institutions. To grasp the discussion more clearly, is important to understand the distinction made by Kitz (pp. 8-9) between the rights of intellectual property and the rights of ownership of physical objects. Intellectual property can enter the public domain, while a physical object will always belong to its owner, who can restrict access and permit use only after drawing up a contract. The main problem discussed concerns the wish of institutions and libraries to impose a copyright on the digital reproductions they make of works they own but which are in the public domain. Their standpoint challenges the concept of Wilder (p. 10): objects and images in the public domain are free of copyright and should be available without restrictions. Institutions want to regulate access to digital reproductions by granting merely a view-only option, while scholars aim for as much open access as possible. Institutions and libraries are driven by the desire to protect their property from 'misuse'. The notion behind 'misuse' hides the fear that once they have put their collection on line, it would be impossible for them to profit from it because it is very easy to make an infinite number of copies from a digital one.

The future of the use of digital reproductions is not yet clear, and it does not seem that it will become any clearer in the near future. Daston argues that there are two aspects of the question that should be considered: 'fair use' and 'trust'. Together they can assist scholars and institutions when negotiating the use of digital images. Fair use is a legal term defining "the use of images and intellectual property that are still under copyright even for non-commercial, non-for-profit and/or educational purposes" (p. 10), while 'trust' means that each party agrees to specific Terms and Conditions and they trust each other on the use of digital images.

Finally, we can state that institutions should be recognised as subjects performing an important role in preserving and spreading cultural heritage. For their part, they should concede that their task can be carried out fully only with the help of scholars, who have the knowledge necessary to study and preserve the material in their collections. Therefore, institutions should not put up barriers to scholars but rather be of as much assistance as possible, even in the digital medium.

3.8.2 Choice of printed editions, the example of the *TLG*.

When considering the copyright issues at the heart of the digital proof of concept for this dissertation, it is important to understand its relationship with printed editions and what disadvantages there are in their use in a digital project. We should state clearly that the decisions made here challenge the present state of copyright and at present would make it almost impossible for the “Comprehensive Odyssey” project to become public. This paragraph will explain why we have chosen this approach and what could be done to overcome the copyright issues encountered, following what some of the digital projects described in the previous chapter have done. Many of the encoded texts come from printed editions which cannot be used in a public digital edition. This would appear an insurmountable impediment to the realisation of a fully functioning “Comprehensive Odyssey”. The only way to overcome this problem, apart from publishing digitally born critical editions, would be to encode only editions no longer protected by copyright. This would solve one problem but create another, greater one, concerning the scholarly quality of the editions. Copyright is then one of the decisive factors in the continuation or abandonment of the “Comprehensive Odyssey” as it now stands. We will explain later in this chapter (3.8.4, 3.8.6) how it might be possible to employ the information available in printed editions under copyright, thereby making copyright a less decisive element than it was when this project was first outlined.

An interesting case study on a digital project and its use of printed editions is the *TLG* (see Chapter 2.2). The *TLG* employs the text of printed editions with no critical apparatus, in order not to incur copyright infringement. It is a case of textual re-use when the text re-used is then blocked by copyright and by a Fair Use Provision. By using the *TLG*, it would be possible, in many cases, to look at the text of an edition under copyright, but it will be impossible to re-use this text for publication where there is no significant addition by the editor and where the text re-used is only re-formatted or rearranged either mechanically or electronically (Licence Agreement). It could only be used for research, and the web site requires a personal or institutional subscription. As has already been stated, the web site does not permit one to see or use even a sample of the source files. It is therefore impossible at present to have a platform for the re-use of the digital text of under-copyright critical editions even without their critical apparatus. What follows in this chapter is a description of the issue of copyright from the point of view of a project based on printed editions. The analysis will cover both a practical and a theoretical issue, since it seems that the notion of copyright is closely connected with

that of the openness of digital editions and the collaboration between editors and the users/readers.

3.8.3 Printed editions and collaboration.

How then, we can produce a scholarly digital edition, if it is not effected *ex novo*? We stress here that if the edition were born digital, most of the problems described below would be overcome. If, on the other hand, one focuses on the other option, that of producing a digital edition from printed editions, one question becomes apparent: will classics scholars use a project built on public domain editions rather than the most up-to-date scholarly editions? The answer can be twofold. If they accept a digital edition which stems from printed editions with expired copyright, all the questions that derive from breaching/dealing with copyright laws will be avoided. We are not saying that there will be no further questions, but they will be of a different kind and refer to the usefulness of the project, i.e. to what such a project might offer in terms of scholarship. Whatever research we carry out, it will always have to be checked against the latest findings available in printed editions. A scholar could never put aside printed editions and work only on the digital edition. This will happen in any case where a digital edition, no matter if the source files are provided or not, will not allow for comments or contributions from users/readers. As we saw in the previous chapter, scholars are trying to produce platforms that might help deal with users' contributions and which could, in this way, incorporate information from recent work that cannot be directly encoded. There are two points that we should remember here, which stem from the work on open data of the *Perseus Project* and of the University of Leipzig: the first is that the critical apparatus is considered the copyrightable part of an edition, as we see in the digitization project of the Sächsische Landesbibliothek – Staats - und Universitätsbibliothek (Dresden) (SLUB). The second point regards the implementation of commentaries in digital editions and can be understood by means of two examples. One is the *Perseus Project* and its collection of texts completed with commentaries and links to other resources. The other is the collaborative editing platform *Perseids*. What they are trying to achieve is a way of producing digital editions where there would be no problem if the base text were from an old edition because the most recent findings could be recorded in the commentaries via a system of annotations made by a community of users, as Crane says (2015). The previous assertion that we will never put aside printed editions, might be true at present but in the near future it might change, and digital editions will be produced where the apparatus will be added not only using

the TEI guidelines but also as a set of annotations, trying to lose as little information as possible from a scholarly perspective. This will give the users/readers what the *TLG* texts lack and also re-usable texts, which are not in the SLUB because this project digitizes documents into digital images where the critical apparatus is covered in every edition still under copyright.

We shall now examine the situation that might present itself if classics scholars did not look favourably on a project not originating from the latest findings. This would lead to considerations as to whether it is worthwhile even starting to produce a digital project based on printed editions when an established printed edition already exists. We are convinced that it is, because a digital project will never be the simple copy of a printed book; it will transfer the information in a printed critical edition into a sequence of digital information which could be used for much digital research and analysis. In the following paragraphs the reasoning behind this conviction is explained, and the two main restrictions that might prevent this kind of edition from ever being produced are described. Firstly, the pre-existing copyright of the printed editions used is acknowledged, while, secondly, we question how to give credit to the work of the editor of a digital edition.

3.8.4 Production of a digital printed edition/project when a highly regarded printed edition already exists.

The first question is whether a digital project based on printed editions is worthwhile when there is already a printed edition that is highly regarded by classics scholars. Looking at the “Comprehensive Odyssey” project, it is clear that, to avoid any major copyright issue, none of the works used should come from printed critical editions, only from digitally born critical editions. This is where the problem arises. While in certain cases a new edition will be considered a contribution to scholarly discourse, in other cases it will not be considered a worthwhile endeavour. Before describing the subsequent phases in the production of a printed edition, West (1991) poses the question: Is your edition necessary? He gives a few recommendations that should be followed before embarking on a critical edition, whatever the medium. We must recall here the additions that the digital medium can offer to what in a printed critical edition might be called the pre-published material. From a certain viewpoint, we might say that a digital edition/transposition of a printed edition might enhance an already published edition with the addition of the material used for the production of the

final text and of the apparatus. Going back to West's suggestions, a new edition is necessary if:

- a) None of the existing editions is available for a specific sector of the public.
- b) The new edition contributes significant progress, compared to earlier editions, in one or more aspects.
- c) Does the editor have the knowledge to produce a critical edition, or is s/he only a recognised expert on an author with no experience in critical editions?
(West, 1991, pp. 63-64)

We are not talking of the feasibility of digital critical editions, they will be new editions, displaying new problems, but also providing different solutions to old ones. The “Comprehensive Odyssey” might be called a digital repository of transcribed printed editions, so it is right to ask about the feasibility of a project of this kind. In this case, if the editor does not want to use editions in the public domain because some of their notions might be out-dated, the question then shifts to how to render critical printed editions that have already been published digitally available. Both the Loeb Classical Library⁶⁶ and the Bibliotheca Teubneriana Latina⁶⁷ are available online as subscription services. The Loeb Classical Library (see Chapter 2.11), holds all its printed editions on an online platform. The Teubneriana is a database that owns the editions of the Latin texts published in the *Bibliotheca Teubneriana*. The Bibliotheca Teubneriana Graeca and the Oxford classical texts are only available as printed editions. Neither the Loeb Classical Library nor the Bibliotheca Teubneriana Latina employ XML/TEI, reproducing the printed page on screen, using a proprietary environment. For example, the Loeb displays the original format of the texts with the Greek/Latin on the left and the translation on the right, which presents some limitations. The “Comprehensive Odyssey”, for instance, connects the *Odyssey* text to the secondary sources and the scholia, but it would be impossible to link the lines with, for example, a specific passage of an online edition of the Loeb Library. It seems, therefore, that the only way to complete the “Comprehensive Odyssey” would be to quote only passages from public domain editions, allowing for their annotations with scholarly aspects that might be missing and can be found in editions still under copyright, as we saw as the aim of the *Perseids* platform. Furthermore, even if publishers encode their editions using XML/TEI, they will require different subscriptions, not permitting a combined search within their material. The only possibility would be an integrated subscription

⁶⁶<http://www.loebclassics.com> Last visited on the 3rd November 2014.

⁶⁷<http://www.degruyter.com/view/db/btl> Last visited in the 3rd November 2014.

service and platform, which at present seems unachievable. Yet the question remains: will a digital critical edition based on printed editions be worthwhile when there is no need for a new edition among the community of classics scholars, considering that the importance of digitally born critical editions is not questioned? We shall analyse in the following sections the aspects of copyright that a digital editor starting from printed editions might encounter. From the publishers' viewpoint, it appears very unlikely that copyright regulations will ever be modified so as to satisfy the new requirements of the digital medium. Classics scholars are more likely to accept a new digital edition/project only if it provides an addition to what is already available in print. The present situation merely seems to lead to a standstill, but collaboration among editors and publishers might open the door to publishing digital versions of printed editions in a non-proprietary way. A non-proprietary way merely signifies achieving a unified service where access to the digital texts of various publishers is provided within the same digital environment. We do not claim that such a platform should be free. We only stress that the value will lie more in the availability of the text itself and in the apparatus than in whatever kind of infrastructure may be created for its publication, on condition that it is non-proprietary. If the text were encoded in XML/TEI, the files could be sold as if they were printed editions, with the restriction that they are to be used for personal research only. In this way, the single user could complete a project such as the "Comprehensive Odyssey" as far as the text of the *Odyssey* and the Scholia are concerned. It does not seem that there would be any problem with the secondary sources because they are quotations; however, the length of the quotation must comply with copyright regulations.

Furthermore, we have to mention that even if a digital project encodes a printed edition using XML/TEI, it does not reproduce the same fixed text. The mere fact that the edition is online already changes its prospects. West's opinion that a new edition may be deemed necessary only if it does not already exist for a specific sector of the public is very important. The digital medium is a new medium and might address users/readers other than those who are already interested in a specific subject. It seems, therefore, that deciding to produce a digitally born critical edition, even in the case of a highly regarded printed edition, might not be a pointless endeavour. We mentioned the great lapse in time between the edition of the scholia produced by Dindorf and that of Pontani. If it took over a hundred years before a new edition of the scholia was envisaged, what would be the point of redoing all the work? The main benefit would be to take advantage of the characteristics of digital editions and look at their possible

positive changes to the edition. We should reformulate the question posed above, i.e. whether it would be worthwhile to produce a digital edition when a highly regarded printed edition already exists. What would be the advantages of publishing a digital edition? What would a digital edition add, both in terms of published material and of research on the subject of the edition? An answer to these questions might help in the final decision about whether to produce a digital project based on printed editions or not.

However, whatever the answers may be, classics scholars should commit themselves to digital critical editions, this being the only direct way to fashion digital technologies suited to their needs. Even when so doing, an editor will never work alone, but will always need the assistance of developers. What Huitfeldt (2014, p. 157) states is not always true: “There is no need to be conversant with all aspects and details of the technology. What is required, however, is a grasp of its basic presuppositions, possibilities and limitations...”. A ‘grasp’ is not enough to provide sufficient ability to deal with urgent technical problems that might cause some difficulties in the fruition of the project.

Régnier (2014, p. 280) rightly talks about a “tripartite cooperation model” among librarians, classics scholars and computer engineers. However, who will handle the copyright? Who will publish and maintain a digital edition? When looking at the “Comprehensive Odyssey”, the interface can always be modified by altering the XSLT file, but the XML files need to be stored. Following Régnier’s tripartite model, what may happen is that the classics scholar will produce the files, the librarians will handle the storage and the computer engineers will work alongside the classics scholars, helping them to solve their visualisation problems.

As we mentioned previously, there are two main difficulties that might prevent an editor from publishing an edition based on printed editions, the pre-existing copyright of printed editions and the recognition of the work of the editor of the digital edition.

3.8.5 Recognition of pre-existing copyright.

Google Books⁶⁸ and the Internet Archive⁶⁹ are exploiting extensively the number of books now in the public domain; Google Books even digitizes newly published books (which are downloadable after payment). A number of the editions used in the “Comprehensive Odyssey”, both for the *Odyssey* and the secondary sources,

⁶⁸ <http://books.google.com> Viewed on 4th August 2014

⁶⁹ <https://archive.org/index.php> Viewed on 4th August 2014

were found online, i.e. on Google Books, on the Internet Archive and on libraries' web sites. They can usually be downloaded as a PDF file. The same is the case for many journal articles, which can be retrieved through the services of a university or a library that subscribes to online databases. We do not question here all the implications of this digitization and what the meaning for scholars and the public of this freely available heritage is. What one must question here is whether this may boost, or give a new life to, critical editions. Critical editions interest a small number of readers, almost a closed community, and Régnier (2014, p. 284) states that publishers are not willing to invest money in projects that still have an uncertain future. Only the public sector invests in digital projects because it is very difficult to meet the production costs of a digital edition. Producing a digital edition based on printed editions not in the public domain may well not be financially possible, or might happen only within an extensive project with the money to subsidize the initial costs. Publishers do not willingly cede something that earns them money. Moreover, publishing companies are trying to introduce into the digital medium the copyright model used for printed material. Is this possible? This has happened until now, but in order for copyright also to be effective in the digital medium, the laws must be changed, adding a specific subset that concerns digital publications.

One of the main reasons for changing how copyright has worked until now is the advantage of an encoded critical apparatus, for example with programmes for collation. Régnier reports the statement of two French editors: Gallimard underlines that a digital book is still a book, and its publication is the publication of an intellectual work subject to copyright (Régnier, 2014, p. 282); Les Classiques Garnier oblige their editors to sign a contract that has a section called "Multimedia Contract". The editor must include in this section every reference to any possible multimedia utilization or technology. It is stressed that the "reproduction, representation, adaptation and translation rights include the rights to digitize, store and reproduce all or part of the work and its adaption and translations on all memories of all devices for storing scanned data...right to inclusion in a multimedia work or adaptation in the form of a multimedia work" (Régnier, 2014, p. 283). The publisher clearly emphasises that nothing has changed with the advent of the digital medium and that he/her also claims copyright in the digital medium. In a sense, this closes the door to further textual analysis such as we can find, for example, in van Thiel's edition of the *Odyssey*. It is true that van Thiel supplies the text without accents or punctuation, but it can be used in textual programs even if only for non-commercial purposes. This is just a first step, albeit an important one, as the editor is aware of the greater significance of technology in the study and analysis of classics. The publisher,

on the contrary, seems uncertain: while trying to safeguard published work, s/he is still unaware of the changes that the digital medium might bring about. As was stressed above, describing the Scholarly Digital Publisher platform, a scholar could become at the same time editor and publisher. This might produce some positive results for his/her digital edition, but if an edition is not digitally born, it will not solve the primary problem of having to negotiate the rights of the material used with a publisher.

Every critical edition has an editor who puts his stamp on the edition, and rightly so. The exact term one should use is ‘classics scholar’, ‘philologist’ rather than ‘editor’ since one might compare what occurred when printing first began and what is now occurring with digital editions. In fact, critical printed editions that are archetypal today initiated in the mid-15th. century when publishers like Manutius printed first editions of ancient authors with the assistance of Humanist scholars, such as Erasmus of Rotterdam. Similarly, publishers and classics scholars should connect today to exploit the potential of the digital medium. We are not saying that collaboration in the making of printed editions is non-existent today, but it was in those early years of the printing press that printed editions assumed the form they have today. Editors and publishers might well work together profitably. They could compare approaches, trying to understand what they and readers/users want from a digital edition in terms, for example, of visualisation, distribution of the source files and the licence of the source code. Collaboration matters mainly if the goal is towards a common platform for digital editions, whereas it is not worthwhile if the publisher’s goal is a closed proprietary program with no possible connection to the publications of other publishers.

We should add here that being involved in a digital project from the outset also helps improve its quality because the editor frequently fights for quality rather than quantity. Here there is a short hint at another discussion that does not directly concern digital editions, but digital objects in general, mainly the creation of digital libraries. This digitization is not like the one described in the previous paragraphs and can be separated from the notion of a scholarly perspective in the production of digital editions.

Looking at this specific aspect of the employment of the digital medium, we realize how much easier it is to prefer quantity to quality in this kind of digital projects. There is much dispute against “mass digitization” completely lacking scholarly criteria and having purely economic and industrial objectives (Régner, 2014, p. 277). Mass digitization means digitizing innumerable books from a collection, not always coinciding with digitizing the most culturally significant ones. Paradigmatic is the case

of the Bibliothèque National de France⁷⁰, a project that proved valuable from the point of view of the number of books digitized per year; however, the digitization disregarded certain books, not because they were culturally insignificant but because they were too fragile and their digitization would have cost more.

This dispute might seem irrelevant when our main subject is digital critical editions, but there is a connection between encoding editions in the public domain and mass digitizing a collection paying attention only to numbers: in both cases attention is diverted from obtaining a result that would respect the criterion of quality. If a digital critical edition is not digitally born, it should at least provide the best editions available, as in the “Comprehensive Odyssey”, speaking from a classics scholar’s view. The two cases are analogous in a second sense: they both want to achieve cost-effective goals.

3.8.6 How credit may be given to the editor of a digital edition.

The discussion can now move on to the second issue: the copyright of a digital edition. Régnier (2014, pp. 285-290) speaks of property versus Commons. What is property in the digital medium? A publishing company will price a book to make a profit, and this should be the same for a digital edition. The issues at stake here are: recognising the work of a classics scholar and protecting the digital content. This protection concerns both the text and the code on which the digital project is based. For example, as far as the code is concerned, the framework “Open Source Critical Edition” (OSCE), described by Bodard and Garces in 2009, defines a “digital critical edition where the underlying code is available under open licence” (Chapter 3.9.5). “Software under an open source licence is not wholly free, it will always be distributed under the normal academic accreditation, but it permits a collaboration never possible under normal copyright laws... a digital edition should include not only the scholarly sources (i.e. the witnesses), but also the digital sources, i.e. the XML/TEI files” (Chapter 3.9.5). It might not seem feasible to publish and maintain a cost-free project, but this is mainly because we were thinking of dealing directly with printed editions under copyright. In the previous chapter we described some of the *Open Data* projects developed in Leipzig and these need to be remembered when thinking about the possibility of effecting a project such as the “Comprehensive Odyssey”. The idea was that this project should hold the text of the *Odyssey*, the secondary sources and the scholia. If the critical apparatus were to be added to all these components, there is the issue of how to achieve

⁷⁰ http://www.bnf.fr/fr/collections_et_services/bibliotheques_numeriques_gallica/a.numerisation_masse_bnf.html. Accessed 27th October 2014.

this without breaching copyright and without losing the possibility of providing the source files. An idea of how to achieve this might come from a look at the *Open Data* projects. The notions that these projects share of providing the source files and allowing room for commentaries could be a good option for our proof of concept as well. Furthermore, looking at open data projects might also help with the notion of keeping the source files available under open-licence together with the preservation of property rights, which means recognizing the work of every contributor to the edition and deciding the kind of work that might be allowed with the material provided. There are many difficult questions about how a digital project could be sustainable in the long run, for example which licence to provide, whether there should be a fee or not and if the project could run independently from publishers. We mentioned above that publishers would also like to make a profit from digital editions, but what would be their reaction if the fee were used solely to keep the project going and help it progress? It seems that the aim should be to create a self-sustained framework as the Leipzig projects suggest, starting from printed editions in the public domain and placing additions in commentaries. However, the edition should be encoded using XML/TEI and the TEI Guidelines for the Critical apparatus should be followed as far as possible. As far as the licences provided are concerned, we could already employ one of the creative commons licences described below.

Régnier (2014, p. 288) asks what should be declared “common goods”, whether only the content or also the structure of a digital edition. He is aware that editors would like to maintain the copyright of their contributions to it, such as “computer architectures, proposals for text revisions, inventive reading paths and unpublished explanation and interpretations” (Régnier, 2014, p. 288). One editor alone cannot create a digital edition, which is reason enough for expressing the opinion that the definition of authorship will change, and with it copyright. The concept of single property, when an edition is a shared endeavour, is difficult to preserve. A good starting point is to look at the copyright of the *Suda on line*⁷¹, the *Homer Multitext*⁷² and the *Jane Austen Manuscripts*⁷³. The *Suda on line* and the *Homer Multitext* are published under two different Creative Commons licences: the *Suda* under the “Creative Commons 'Attribution-NonCommercial-ShareAlike 4.0 International License'” and the *Homer Multitext* under the “Creative Commons Attribution-ShareAlike 4.0 International license” (linked data set are licensed under the Creative Commons Attribution-

⁷¹ <http://www.stoa.org/sol/rights.shtml>. Accessed the 27th October 2014.

⁷² <http://www.homermultitext.org>. Accessed the 27th October 2014.

⁷³ <http://www.janeausten.ac.uk/edition/citation-policy.html>. Accessed the 27th October 2014.

NonCommercial-Share Alike 4.0 International License). The first permits the user/reader to “copy, redistribute, remix, tweak, and build upon” a work for non-commercial reasons, giving credit to the author and using the same license for their creation. The second differs because it permits commercial aims. Both licences state that the authors who take advantage of these terms should always indicate whether changes have been made. The *Jane Austen Manuscripts* project is different, not allowing any derivative work or alteration, and is available cost-free for individual, non-commercial use, granted upon providing attribution and citation. It does not own the copyright of the manuscripts images, which Libraries and Owners control, while the publication system software is under King’s College London copyright. The most important conclusion obtained from these examples is that intellectual property always remains the same as in printed editions, but here more than one person share it.

In these editions we can see projects where the issues of attribution and licence have already been dealt with. As we said in Chapter Two, with the notion of open data Crane expressed the possibility of not handing all the rights of the work to a publisher, should be the aim of any project, in order to “riaffermare il ruolo e il valore della filologia nel senso più ampio del termine⁷⁴.” (Berti et al. 2013, p. 151). Following the Leipzig Open Data Projects, the role of open philology is to build a collection of open, re-usable, machine readable linguistic resources, which could expand the study of ancient languages with annotated corpora and the study of a personalised grammar and vocabulary. Finally, we could publish editions with a platform for annotations and editions with machine elaborated data. The model of publication envisaged is the collaborative platform *Perseids* and its Fragmentary Text Editor (see Chapter 2.10) for annotating works available only through ancient and modern text reuses. These work with the *Leipzig Open Fragmentary Texts Series* (LOFTS), the publication of digital editions of fragmentary authors such as the *DFHG*. Their aim is not only to produce editions but also to allow the collaboration of students, directly involving them in the analysis of witnesses, with the goal of publishing collaborative editions with an integrated peer review process, linked together with the resources of the *Perseus Digital Library*. With the *Perseids* platform we could employ an annotation system that could support the citation of images together with the edited text, both of which having a unique identifier allowing for a direct connection between the two resources. The notion is to create a platform that will hold transcriptions, translations, annotations and commentaries together with the critical apparatus in order to produce a highly

⁷⁴“...reaffirm the role and value of philology in its broadest sense”. (my translation)

comprehensive edition. This edition will provide credit, “trace the full editorial and scholarly history of each document” (Almas and Beaulieu, 2013, p. 500), with an easily upgradable bibliography and links. Adding commentaries will permit the creation of “a narrative commentary and annotations” together with “a space for literary, historical, and grammatical analysis of the documents” (Almas and Beaulieu, 2013, p. 500). The aim is a self-sustainable project, detached from external investment, with the quality of professional editions assured by the review process of peers working together. The edition will be easily upgradable and any error or new material easily corrected and added. Berti et al. (2013) believe in developing free access to the platform, which they think could be sustained by providing more sophisticated services on paying a fee. This should leave the learning platform free and open for everyone, helped by being under a Creative Commons license. It will also contribute to the development of a collaborative environment from the beginning of the edition, because the editing, translating and checking could be done at an early stage thanks to the correction and feedback system available on the *Perseids* platform. This is a good way to link, study and edit, and it could be connected with what has been said about orality, collaboration and exchange in the digital medium. If this platform for study and publication were developed further and still be adaptable to various texts and projects, the issue of copyright and credit of a digital edition might find a possible solution.

3.9 Building an edition.

Although we have already discussed this question, it is necessary to reaffirm here that the lack of clear theoretical terminology is a major drawback in the field of digital editions, as is the lack of a scholarly agreement on their nature and purpose.

Currently, there is no shared view on how to build critical digital editions, merely a series of opinions offering different viewpoints. Vanhoutte (2010) wonders how we could define an electronic edition knowing that it can do many distinct things. To his mind, there are innumerable expectations for a critical digital edition, for example: “Digitization of a printed edition, provision of user generated editions, publication of one text, presentation of textual archive” (pp. 120-121).

3.9.1 Interoperability.

One of the important characteristics in a digital edition whose editors do not want to publish a stand-alone project, isolated from the others but one that could be part of a network of resources, is interoperability, being able to interact with other projects,

not employing proprietary software that will isolate the edition. We described it as one of the most important aims of the *Perseus Project* and the *Homer Multitext* and as one of the hindrances of the DET framework developed by Robinson and of the *TLG*.

Gabler (2010) lists the traditional components of the ‘scholarly edition’: text, apparatus, edition text, historical collation, textual note, annotation and commentary, which can easily find room in a digital space. At present, not many scholarly editions are born digital; in his view, there will be many more in the future, particularly when their interfaces will focus more on the reader, who should become part of a platform of “interactive dynamic editing” (p. 48). According to Gabler, images and user-driven commentaries will become core integrated elements of the editorial project, perhaps the greatest step forward compared to printed editions. Traditionally, the provision of a commentary and apparatus is relegated to the end of the volume, if not to a separate one, but in digital editing these can be more easily and unobtrusively integrated. A work can be studied more effectively against its background; thus, the digital medium would be the best for exploring the relational dimensions of the text. The problem with Gabler’s approach (p. 54) lies in the establishment of “complex relationalities ... encoded for them [i.e. editions] into the digital infrastructure itself”, substituting the memory as “a constitutive factor of orientation” (p. 54). However, such a notion has a major difficulty, as explained, for example, by McDonough (2009). Writing on the limitations of XML, he describes how various libraries have produced many standards for metadata, which have made flexibility possible but interoperability very difficult. We can make similar considerations about digital editions based on highly abstract and flexible standards, such as the TEI.

In their article about developing ontologies to deal with editions of fragmentary texts, Romanello and al. (2009) stress the importance of shared ontologies, of formats allowing the conversion from other formats, in order to avoid miscommunications between projects or bibliographic records. They also depict the renewed interest in “Semantic Web related technologies” because of “the increasing need for interoperability, in order to access the amount of data that different projects have produced and distributed with different formats up to now” (Romanello et al. 2009, p. 170-171). Similarly, Brown (2015) and Pierazzo (2014) portray interoperability as an important asset of digital editions. Brown (2015, p. 9) states that in looking for “usability in scholarly tools and interoperability in scholarly resources, there is a tension between more usable technologies and those based on better data models and best practices”. A single editor and file format is difficult to achieve in such varied

requirements for scholarly editions, this creating repercussions in the “preservation and interoperability of materials produced on mainstream platforms” (Brown, 2015, p. 9). In her opinion it is not always possible to connect a “better data model” with interoperability. Even employing the TEI does not develop projects easily integrated into interfaces and tools different from the original ones and it seems an arduous task. Nevertheless, publishing different and separated editions does not promote a broad use and production of digital resources. Brown (2015, p. 9) affirms that interoperability is crucial for editions designed both for the reader and for philological and analytical analysis; the issue does not depend on the complexity of the digital languages and grammars to be learnt, which mainly are XML and TEI. The pressure originates between “the benefits of standards versus disciplinary resistance to systematization” (Brown, 2015, p. 9). Standards must be “socially and intellectually responsible and responsive, and standards bodies need to be transparent in their governance and decision-making processes” (Brown, 2015, p. 9). This tension becomes clearer by looking at the interface for the publication of data, an important medium for understanding the difficult relationship between standards and the “typical humanist’s justified suspicion of them, to translate the radically dynamic textuality in ways that users can comprehend as our texts are increasingly dynamic not just in delivery but in storage, and to radically inflect how collaborative work is represented, understood, and evaluated in institutional contexts” (Brown, 2015, p. 10). Pierazzo (2014, p. 132-133) quotes Schmidt’s notion on stand-off markup, stating that he believes stand-off annotations are a better way for interoperability and control of knowledge. Schmidt (2012) explains that interoperability does not exist between digital projects: each of them employs various “embedded tags that are subjectively defined, subjectively chosen and subjectively applied” (Schmidt, 2012, p. 134). He believes that the only way to achieve complete interoperability is removing markup. This is difficult because markup is subjective, and it will be hard to make sense of XML content without the tags. If we consider how challenging it is to remove markup from an encoded text we should say that, at present, we should accept the limitations of XML and the TEI, producing fully TEI and XML compliant editions, as we said in the critical description of the *Euripides Scholia*, where the TEI Guidelines are not fully followed.

The TEI permits users’ customisation but, to make TEI-encoded editions interoperable, the need for a stable and predictable format is becoming increasingly pressing. All this has to be achieved (and here lies the caveat) without losing the

capacity to represent complex, ever varying, data in the humanities, one of the reasons why the TEI is adopted so extensively.

3.9.2 Transmissional noises.

Scholarly editions help preserve a work, keeping it alive, and, therefore, they can be considered, as Dahlström writes (2009), media translators: they transfer the work from one document to another. During this passage, a scholarly edition is subject to complications arising from this derivative relationship, often called ‘transmissional noises’, including issues related to the individual scribes transmitting the text, the condition in which the transmission occurs, the media of departure and destination, and what is used to disseminate the work. Describing critical editions in the classics, West (1973) explains that transmissional noises occur every time a manuscript is transcribed, adding new errors to the text, which can be introduced by scribes when attempting to correct apparently erroneous readings, or because of involuntary mistakes. Moreover, a text changes because its establishment is influenced by the variable knowledge of the scholars editing it, the handwriting used and the mental associations that contribute to its conscious or unconscious alterations. This aspect is well-known to Dahlström (2009), who states that there is a distance between the original documents and the digital representation, with the risk of an increasing number of errors as the text is copied from one document to another. Furthermore, as we saw, oral composition in performance was influenced by the place and historical time of the recital and scholarly editions will be shaped by present studies on the Classics; we should treat them as works situated in a given time and space, determined by history, the media and society.

3.9.3 Different editions for different users.

As mentioned above, editors must consider carefully the final user of their editions and how to involve scholars and students. Nowadays, scholarly editions should take advantage of the changes within digital technology, and editors have the chance to engage scholars and students in the exploitation of scholarly editions in new and exciting ways. Explaining his views concerning the audience, nature and function of scholarly editions, Vanhoutte (2009) argues that we should encourage literary critics to read scholarly editions, rather than use inexpensive, convenient ones. This can be achieved by making two editions available simultaneously. The first would be called the “minimal edition” and would present an “established text with annotations”; this is created by a scholarly editor, who is viewed as a “guardian of the text”. A sub-type of

the minimal edition would be the “reading edition”, which is one with a “scholarly established text” (p. 100), but without annotations. The editor of a scholarly edition should not underestimate the cultural relevance of minimal/reading editions, which should be prepared without questioning their scholarly status (p. 109). The second type he suggests, known as the “maximal edition”, “introduces the result of textual scholarship” and focuses on the “multiplicity of the text”. It is an academic endeavour par excellence and, in preparing it, the editor demonstrates his/her own editorial preparation.

As an example, Vanhoutte describes *De trein der traagheid*, an edition created with the collation encoded in an XML/TEI file, and which also features a wealth of editorial annotations. This permits the output of different versions of the text, even of every single witness within the apparatus. Furthermore, editions created accordingly can be exported in various formats or visualised on screen parallel to others. This represents Vanhoutte’s overall opinion on the maximal edition, which should embed a minimal edition, providing the user with a reliable, accessible text since it includes a critically-established text. Furthermore, putting the collation material at the user’s disposal, this edition can be checked by the reader, who might even develop his own edition. Vanhoutte believes these new opportunities may re-establish the scholarly edition as a “cultural product”. His final view is: “The electronic edition is the medium par excellence for the promotion of the scholarly reading edition and the recentering of the printed edition” (p. 110).

In the end, the discussion might involve what the reader would like to read in different contexts and environments. For example, an edition to be read which could implement together all the variants or a documentary edition with all the facsimiles or even a genetic edition. There are also differences between literary scholars and historians who tend to be divided between editions involving creating a copy text and editions of documents. The digital medium could combine these different editions, for example, as documentary, facsimile and diplomatic editions. The user/reader could become closer to the evolution of the edition and inspect it, being involved in its completion. There might be a facsimile, but also a transcription, which could be seen as a kind of translation, a map of what can be found in the facsimile, a guide for further analysis (Pierazzo, 2015, p. 88-91). Yet, with all the possibilities described by Vanhoutte and Pierazzo, everything depends on the kind of user/reader the editor has in mind and on the kind of edition s/he might prefer. The different variety of users/readers also helps define the diverse readings that can be perceived: continuous reading,

browsing, scanning and close-reading, or the reading related to a scholarly edition. The digital medium could embrace various scholarly tools in the production of several outputs all originating from the textual encoding. Editors could both respect the document/witness and pay attention to the needs of the users/readers. These products could appeal both to a scholarly and a “reading edition”. As Vanhoutte explains, the difficulty lies in accommodating more than one audience in the same edition. A scholarly edition and a “reading edition” interest different publics, or the same public on different occasions. The aim should be for the scholar to be occupied in producing “reading editions”, with the “...scholarly argument ...and larger audience” (Pierazzo, 2015, p. 163) side by side, accommodated by the different output facilities of the digital medium.

3.9.4 Community-based edition.

Scholarly editions depend on the time and society in which they are produced. According to Shillingsburg (2009), editors have not fully exploited the true possibilities of the digital environment since electronic editions have simply become easier to use and to access compared to their printed counterparts. As a result, they are not what they might well be because most of them have been created without any regard for the text’s ‘source’, ‘fonts’, ‘formats’ and ‘contexts of origin’ (par. 20). In his opinion, scholarly editions should be ‘convenient’, not only inexpensive but also respecting the natural behaviour of scholars and students, who will more likely use editions they have easier access to, even if they may be inaccurate. Being ‘convenient’, Shillingsburg argues, means being cheap, user-friendly, “treated as the user’s own with bookmarks, highlighting, space for marginal notes, and the ability to annotate or even change the material that appears on screen in what must truly feel like the user’s very own private copy” (par. 31). According to Shillingsburg, preference for ‘convenience’ does not only pertain to the digital medium, but also to the printed one, particularly from the readers’ point of view. Readers disregard expensive scholarly printed editions and use only ‘convenient’ paperbacks, which are easy to find and handle. As an alternative, when a paperback is not available, they turn to the Internet and the Project Gutenberg, a ‘convenient’ source, but one not very reliable for scholarly research. Digital editors should aim to create a digital edition ‘convenient’ for “readers, editors and technical experts” (par. 29). This can be achieved by producing a so-called “Collaborative Literary Research Electronic Environment”, comprising modular structures connected

as a “network” of related parts, each extendible and “openly accessible” to qualified scholars (Shillingsburg, 2009, par. 35-38).

The notion of the need for a community of scholars was also discussed by Mordenti (2001), who describes a community of people who can judge and restore, or establish, the text, in an era when the reader has an increasing number of opportunities to work on texts. In the digital future the reader will be in direct contact with the editor, and a digital edition will offer readers the chance to assess the work of editors, their encoding criteria, the organisation of the textual tradition and its interpretation. In theory, an edition thus conceived implies an active reading and an open community of interpreters in a public place, where the interpreters can also be the editors or anyone else who can access the edition. Mordenti’s position differs from Shillingsburg (2009) since he adds the concept of society and communication within society, whereas Shillingsburg is concerned only with the scholars interested in a particular edition.

The study presented by Shillingsburg (2009) aims to examine editions of literary works, described in a parallel essay as “implied, represented, and interpreted” (Shillingsburg 2010: 165). His conclusive consideration is that the ‘work’ is implied in every extant version; it is not the sum of them all. Yet how, therefore, should we represent it? This is, to be honest, not very clear; Shillingsburg does not want a transcription, but envisages a facsimile and the provision of searchable texts. Referring to this model, he uses terms such as ‘texts’, ‘documents’ and ‘works’. That is to say, “works are represented in texts and documents, and [that] without documents there are no works” (2010: 175); if the work is implied in the documents that represent it, each document has to be interpreted discretely.

To return to the notion of oral composition in performance and to the rhapsodes that sang the poems ‘according’ to where they performed and to the audience, we have the same issue as that of the communication with users/readers. The kind of edition that is needed, as we have said, depends on its users/readers, but the digital medium could make it possible to publish editions based on the community that works or uses them. The edition in the digital medium can be part of a communicative model involving the interaction of users with the editor and with one another. Every edition published in a community environment, such as the *Suda on Line*, is attached to a specific time and social background. This is what could be pictured for a community-based edition, an edition that is both the work of an editor and a community of contributors and which relies on a community of users, which may, up to a certain point, overlap. We describe here a platform that could encompass the needs of both groups at a certain time and

place, so that it could be based on what Shillingsburg (2009) describes as a network of connections. An edition then might be both shared and private, depending on the public that uses it; it should respect people's needs, while at the same time receiving something in return. The traditional referentiality we see behind the composition of the Homeric poems is what exists also in the modern digital communities that develop a project. What we described as a movement back and forth from the editor to the community, and vice versa, is what the edition described in this paragraph is about. Shillingsburg thinks of a scholarly environment, while here we are talking about a much more open environment, where peer review will help ensure the scholarly aspect of the project. The community should not be restricted arbitrarily at the outset of a project. The exchange available is one of the aspects that could shape an edition based in the community, it could help extend the number of contributors and enlarge the community of users.

3.9.5 Open source critical edition (OSCE).

When discussing editions of Greek and Latin texts, Bodard and Garces (2009) pursue the notion of an independent platform in the guise of an open source critical edition; they mean a digital critical edition where the underlying code is available under open licence. The questions analysed are: "The sense and implication of the open source model", "the connotation of critical", and "what kinds of edition should be included in such a project" (p. 84). Proposing an open source edition originates in the free-software movement and suggests a new way of producing an edition with collaboration, peer review and clear protocols for publication.

The authors used the term 'open source' because the characteristics of Open Source software are comparable to those of scholarly editions: documentation on their sources, bibliographic references and the re-use of some material from other editions. Open source means software distributed with its source code, and with an explicit licence, which gives the users the chance to modify and redistribute the code (p. 85). Software under an open source licence is not wholly free as it will always be distributed under the normal academic accreditation, but it permits a collaboration never possible under normal copyright laws. They propose that a digital edition should include not only the scholarly sources (i.e. the witnesses), but also the digital sources, i.e. the XML/TEI files. According to them, the notion of 'critical' has different meanings; it stems from seventeenth-century German scholarship and the Lachmann method and was enforced by the well-founded methods of the nineteenth century. In a digital edition, the notion of 'critical' requires not only scholarly established texts, but also

“transparency, to software as well as to human readers, as to the editorial interventions made and the sources, data and scholarship behind such decisions” (p. 92). Open source critical editions should include not only the reconstructed text, but also the data, an explanation of the production process and a description of the technical objects used.

3.10 Conclusion.

We have described digital editions as a new form of scholarly editions, and considered their potential as the future medium for such editions. To understand what is required of a digital edition, at first we described analytically the vocabulary used in both printed and digital editions. The book is both a material object and a literary composition, while the text is something fixed yet ever-changing, bearing in mind the difference between ‘work’ and ‘document’ established by Shillingsburg and Tanselle. Tanselle’s opinions about the difficult yet worthwhile endeavour to establish the text closest to the author’s intention, and his explanation that documents are all different, lie at the heart of the modern attitude towards digital editions, together with the praise of the variants made by Cerquiglini. The concept of textual variation, and the attention to documents and witnesses, rather than simply to the edited text, can be considered the theoretical basis for digital editions as they are (or should be) conceived.

From the discussions reported above, and from the description of other digital projects in chapter two, the ‘Open Source Critical Edition’ can be considered the most suitable methodological framework for digital editions. We can argue that an Open Source Critical Edition satisfies the main requirements for digital editions as described by the MLA in their guidelines, and by Sperberg-McQueen (1994), who argues for non-obsolescence and intellectual value. The requirements of the OSCE are complemented by other scholarly opinions examined here, in particular those concerning the new interactivity offered to the user and the building of different editions for different users. Thus, the possibility of customising an edition will accommodate the needs of readers from different backgrounds with distinctive requirements; these editions can be achieved via XML/TEI encoding, which permits the extraction and visualisation of only the material required by that specific reader. We do not argue here that the editor should only supply the source texts leaving the decision-making process to the user. He/she should produce an edition which, as stated by Cerquiglini (p. 43), is a choice based both on a theory of the work and on a literary theory: the editor is required to support his/her opinion openly, without standing back, thus hiding behind sources.

After an overview of digital scholarly editing, it seems one can only agree with Stussi when he speaks of prudence as the editor's scholarly companion. This does not mean that the editor needs take no further steps towards more engaging digital editions, which can be achieved only by understanding the profound implications underlying the adoption of the digital medium. Moreover, an editor has to bear in mind continually that his/her main responsibility is towards the text (Vanhoutte 2009. p. 109).

Chapter 4 The Principles of the “Comprehensive Odyssey” and its Encoding Process: XML/TEI/XSLT/CSS.

4.1 Introduction.

In this chapter we shall focus on the proof of concept developed for this dissertation, the “Comprehensive Odyssey”. First, we shall outline its theoretical aspects, which originate from the analyses carried out in the first three chapters and which connect digital questions with the oral and written origin of the *Odyssey*:

- 1) The Odyssey as the fulcrum of this edition and the focus on the user/reader.
- 2) The choice of printed editions.
- 3) XML/TEI.
- 4) Editor vs. editors.

While still connected to a general outline, but from a less theoretical standpoint, attention now shifts to the initial intention for the project design. The four above-mentioned points refer more to the final goal, the aim to be borne in mind. They are discussed and recalled as the project was being constructed so that stumbling-blocks in it can be pointed out.

Second, this chapter describes thoroughly the encoding process concerning the scholia, the *Odyssey* text and the secondary sources. The rationale behind each decision is explained, but the focus is mainly on all those places where we found difficulties in applying the Text Encoding Initiative (TEI) Guidelines. The following chapter on the secondary sources will highlight that, when choosing which critical edition to encode for each secondary source, the editor needs to become acquainted with the editorial problems characterizing every secondary source, every edition, the text of the *Odyssey* and the scholia. These problems are even more central to the attention required during the encoding process since encoding obliges one to think about the text, its organisation and how its critical apparatus works. Encoding a text allows the editor to give instructions to the computer so that it can understand what is being encoded as a text. Moreover, every text has its own structure, which the reader comprehends, either from experience or from its introduction. The computer needs to be told all the characteristics of the text in order for them to become accessible to computational analyses. For example, this happens with the critical apparatus. If the editor wants to recover the text of a specific manuscript from the critical apparatus, s/he should encode all the variants correspondingly, so that the computer will understand where they all stand in a text. To

achieve this, every aspect of a text must be comprehended in each single component. Furthermore, the details the editor will focus on depend on how deep in terms of word characteristics (for example morpho-syntactic characteristics) the encoding is. We should further stress that the encoding process helps to focus attention on the text, on the critical edition chosen and on its characteristics, as is the case for any other kind of analysis.

We encoded only the critical apparatus of the scholia and the *Odyssey*, not of the secondary sources; therefore, the process of encoding is described solely with regards to the former. The encoding of this digital project is different from that of other projects such as the *Thesaurus Linguae Graecae* (TLG) because the text is encoded without considering the line breaks and paragraph divisions of the printed edition. The TLG holds printed editions and preserves all their line and paragraph breaks in its encoding. These divisions do not appear in the “Comprehensive Odyssey” because we believed that if the critical apparatus were added to all the sources, line and paragraph breaks did not need to be encoded. In our encoding, we employed one of the three methods the TEI offers for dealing with the critical apparatus (see Chapter 4.4.1.3). Since the TEI provides the way in which to link the apparatus to the exact place where the variant is found in the text, we did not find it necessary to reproduce in the encoding the precise line and page breaks into which the text of van Thiel’s *Odyssey* and of Pontani’s Scholia are fashioned. As a result, the texts in the “Comprehensive Odyssey” are encoded in a continuous manner, and, as will be described below, this may create some difficulty in connecting the critical apparatus to the text. If the edition is to be a digital one, even if the text comes from a printed source, there should be no references as to how the printed page influences editing as far as the length of lines and paragraph divisions are concerned. The problem then arises with editions where the lines are numbered and used for reference in the critical apparatus and in the commentary. The encoding has to mention these numbers because in certain cases the apparatus and the commentary include direct links to specific lines of text. While encoding the critical apparatus using the TEI can overcome this problem, as will be illustrated below, this is impossible when dealing with a commentary, as we shall see later when we describe the encoding of the apparatus *testimoniorum* of the Pontani edition of the scholia (see Chapter 4.4.1.2, Chapter 4.4.1.3.d, Chapter 5.3, Appendix 2.7). A commentary does not have any specific set of elements for handling the encoding. At the same time, it might refer not only to a single word but also to an entire paragraph, so it is detached from a referral to a specific point in the text. In the printed edition of the scholia considered here, the

editor connects the commentary to the single paragraphs into which he subdivided the text of the scholia. Even when he mentions specific lines, the reference is to the explanation of an entire paragraph.

The question is how far a digital edition based on a printed edition should detach itself from the printed book during the change in medium. We cannot decide this in general terms, but, as we have already said, it depends on the text chosen for the edition, as not every edition is the same and it seems therefore that only general instructions can be suggested insofar as critical apparatuses and commentaries are concerned. This detachment from the printed medium must be based on the structure of the printed edition and on how the critical apparatus and the commentary are linked to the text. Moreover, we must compare the goals of the printed and of the digital editions in order to understand their differences and the amount of information that is to be transferred from one medium to the other. Furthermore, certain works are arranged in a standardized way, such as the works of Plato and Aristotle, and a digital edition should not dismiss this structure merely because it is in print, but should maintain it, perhaps within a new one, only, however, if it were envisaged that it would cope better with the characteristics of the digital project. This raises the issue of canonical citations and CTS as a framework for dealing with citations. The reasoning deals with citations of classical works and of fragmentary authors. This chapter will consider an example from the *TLG*, to compare the different ways in which a printed edition may be approached and what this entails from a visual point of view, particularly as far as the Scholia are concerned. The encoding of the secondary sources will be more closely connected to CTS, from a practical and a theoretical point of view. In this chapter we shall describe its technological aspect, seeking somehow an eventual implementation of CTS in the “Comprehensive Odyssey”, while an analysis of the texts that are considered secondary sources and their importance in this proof of concept will be carried out in the following chapter.

The encoding procedure followed the same process for each source. First a TEI schema was created using the Roma⁷⁵ customization tool, which was used across all the TEI/Extensible Markup Language (XML) files in the project. To create a schema, the editor must complete a general analysis of the sources and decide on which characteristics to encode in order to include them in the schema. The TEI is composed of both a group of fixed elements and of elements that pertain to different areas of text editing and analysis. Depending on the aim of the project, some will never be used in

⁷⁵ <http://www.tei-c.org/Roma/> Last visited on the 3 October 2014.

the encoding so they need not be added to the schema. A schema can be modified by uploading it to Roma, but creating a schema not using all the TEI elements is an important step: it means that the editor knows from the outset what exactly s/he wants to encode and the scope of the edition.

Secondly, the editor needs to choose in which order the texts should be encoded. We decided to encode first in the same XML file the *Odyssey* text and the secondary sources and, secondly, in another file, the scholia. Extensible Stylesheet Language Transformations (XSLT) indeed permit handling two XML files at the same time. Thirdly, after finishing the encoding, the script that produces the visualisation of the encoded material, i.e. an XSLT file, was created. Not only was one XSLT file produced, but as many as were needed to create the different visualisations required. This is one of the most important aspects of a digital edition created with XML/TEI: the same data can be handled in different ways, while still remaining the same: each XSLT file will handle differently the visualisation of the same XML file or files (in the “Comprehensive Odyssey” there are two XML files to be handled). Encoding involves thinking about which aspects of an edition to make available for future studies and how the user/reader will visualise the encoding. This might seem the most difficult part since it entails the ability to transform the concepts of how the text should be seen on the screen onto the final web page. This can be achieved by preparing a transformation scenario which employs XSLT scripts. This will be explained in detail later in this chapter.

Finally, the last stage was the creation of a Cascading Style Sheets (CSS) file, which stored most of the information on how the data would be seen in terms of fonts, links, alignments, margins, tables, etc.

We shall describe all these phases in the second section of this chapter, starting with the encoding of the scholia, followed by the *Odyssey* and concluding with the secondary sources. We should say that the present encoding offers only a preliminary visualisation and that the XSLT and CSS can always be improved to highlight different aspects of the texts, as might be required for a future, different analysis.

4.2 The editions of the sources combined in one digital edition.

One of the positive aspects that can derive from using the digital medium in critical editing is that it will be possible to create a comprehensive edition, which on a single platform will include what usually remains separate in print. The principles upon which the edition proposed here depends are given below. They were developed following the analysis of the Homeric poems as oral compositions and the digital

projects described in the second chapter. These general principles will be discussed when actually effecting the proof of concept: it will be shown that some of them clash with the real problems a digital editor faces and with what a digital project may currently achieve.

4.2.1 The *Odyssey* text as the fulcrum of the tradition, with a focus on the user/reader.

In our proposed edition of the *Odyssey*, the *Odyssey* text will remain, both visually and theoretically, the fulcrum. The main point of this “Comprehensive Odyssey” is to recognize the importance of tradition in analysing the *Odyssey* text while maintaining the latter as its main focus of attention. This means making the sources available, affording them an important place in the edition since they are a priority in the study and reconstruction of the whole tradition, particularly the Alexandrian one. The term ‘source’ indicates not only the papyri, the manuscripts and the scholia but also the secondary sources, which will be one of the main components of this project. The possibility of recreating a specific witness might well shed more light on this aspect of the history of Homer’s text and, therefore, on the reconstruction of the text itself. The secondary sources help re-establish the transmission of the Homeric text within the history of the literary tradition of Ancient Greece and of the early Christian age, in order to understand better the text used by ancient writers and the existence of variants sometimes due to their citing Homer by heart.

There are two main reasons why the text of the *Odyssey* must remain the focal point. First, as we have already mentioned, what editors create in the digital medium “will no longer be sacred, untouchable texts, only proposed solutions” (Chapter 3, par.6). Even if this might be the case, we are not saying that everyone should become the editor of his/her own text; on the contrary, editors should continue to guide the user/reader without withdrawing from their responsibility towards the text and its own history (Chapter 3, par.6). The second important reason is that the user/reader of this “Comprehensive Odyssey” might be a non-expert of critical editing or a Homeric scholar: a digital edition is theoretically open to a broader public than a printed critical edition. Providing such an edition of the *Odyssey* helps the user/reader understand the indirect sources and their variants, by a comparison with a chosen text. It is also a way of putting the quotations in context to comprehend better the meaning they have in the sources. Furthermore, in the “Comprehensive Odyssey” the users/readers could study the *Odyssey* while remaining on the same page. The abovementioned notions are not so different from the concepts of Parker concerning the *New Testament Project* (see

Chapter 2, par. 8). In his opinion, we need a critical text as a means of understanding the work, the narration of the textual history. A critical edition is where the critical apparatus has its place, where we might understand the text as it really is, in a kind of “navigation through the process” of editing (Parker, 2012b, p. 139). In the same way, having one *Odyssey* text together with the critical apparatus is a point of departure for understanding the scholia and the secondary sources. They will all also have the critical apparatus, so that every work encoded in the project may be studied in context, with its history and that of the *Odyssey*, as well.

The texts of the *Odyssey* and of the sources will be encoded using printed editions as their basis, as is explained in the next section. These texts will be visible by default on the screen, but the user/reader should be able to make changes to them by using the material available from the encoding of the sources, within limitations set by the editor. An example of a user-checked contribution is the web site *Papyri.info*⁷⁶, which contains material from various digital collections of papyri, the *Advanced Papyrological Information System* (APIS), *Duke Databank of Documentary Papyri* (DDbDP), *Heidelberger Gesamtverzeichnis der griechischen Papyrusurkunden Ägyptens* (HGV), *Bibliographie Papyrologique* (BP), and collaborates with *Trismegistos*. It consists primarily of two parts, the Papyrological Navigator (PN) and the Papyrological Editor (PE). The Navigator supports the “searching, browsing, and aggregation of ancient papyrological documents and related materials”, while the Editor “enables multi-author, version controlled, peer reviewed scholarly curation of papyrological texts, translations, commentary, scholarly metadata, institutional catalogue records, bibliography, and images” (description on the home page of the web site). We can search and view one document or more in the database and open a document in editor mode after creating an account. This way the user can contribute to the database by submitting new documents and help edit those already submitted.

This is just one example, but helps to show how an immense ongoing project is trying to take advantage of the opportunities of a potentially collaborative environment in a way that permits control, not losing the scholarly aspect of the final edition. A user-checked contribution means opening up the project to collaboration without losing control over the final product. In this way, the user/reader may contribute to a project while the editors can control the encoding submitted. It might happen that a project may thereby receive unexpected contributions involving someone interested in the subject but not connected to any academic or scholarly concern. This contribution may also

⁷⁶<http://papyri.info>.

help complete the project if the users/readers were given the chance, for example, to submit new sources. Within limitations set by the editor, users/readers will benefit from the source files, understanding the process behind the visualization and what the editor wanted to achieve, with the chance to modify the visualization according to their needs.

This potential can only be achieved through an XML/TEI encoding and creating an appropriate output, where the user/reader may make choices. In any case, s/he should have the option of reverting to the primary default view of the editor.

4.2.2 Choosing printed editions.

Printed editions will be chosen for every source that constitutes this “Comprehensive Odyssey” and for the text of the *Odyssey* itself.

We should state here that we are aware that using a paper edition as a basis puts an editor in the hands of whoever edited the text for the paper edition. This “Comprehensive Odyssey” must also avoid being too bound to the printed volume; it must not follow the form of the printed book but, on the contrary, exploit the digital medium. We also realise that every editor follows different editorial theories when writing a critical edition and that users of the “Comprehensive Odyssey” may not agree with them. Should that be the case, it is obvious that what will distinguish a digital edition from the printed book most is not so much its visualisation but what lies behind it, the encoding: apart from the Scholia and the *Odyssey*, none of the secondary sources will have the critical apparatus; therefore, what will be seen on screen is only the text of these sources. Their encoding using XML and TEI will, as will be explained, enhance the potential of the text, provided the encoding is consistent and depending on how much information is encoded. The edition’s main focus will be the text of the works encoded, starting from the *Odyssey* and moving to the scholia and the secondary sources. While bearing in mind that the project is based on printed editions, the goal should be to maintain the text as the centre of attention, at the same time recording whether specific characteristics of the printed edition were ignored.

We should specify here that we fully comprehend that such an edition bears the extremely important issue of copyright, which also concerns every edition in this project. Since the project described here is a proof of concept of a digital edition, it might seem strange not to talk about selecting digitized texts for the edition. In the previous chapter we explained in detail how difficult it is to deal with the copyright of printed editions and how this could affect the production of this proof of concept. Here we reinforce the notion of why printed editions were chosen for this project and point out their

relationship with already digitised texts such as the *TLG* and the *Perseus Project*. We originally thought about looking at the texts in the *TLG* and having them as a basis onto which, after a collation with printed editions, the digital project could be implemented. After acknowledging the copyright of the *TLG*, we understood that it would have been impossible to do so. We decided then to focus our attention on the choice of the most highly regarded printed edition for every author cited, which, in some cases, could be found in the *TLG*, but not in every case. When we could find a digitized text in the public domain, mainly in the *Perseus Project*, it was used as a starting point for our encoding. When this was not possible, the text was entirely digitized from scratch. We did not use the XML files provided by the *Perseus Project*, but a plain copy/paste of the text, to which we implemented our encoding. Every user/reader looking at the bibliography provided for this proof of concept will realise that the texts found in the *Perseus Project* are not cited because the final texts which this edition will include are printed editions, while digital editions are used merely to facilitate the encoding process.

The XML/TEI files holding the encoding of the *Odyssey*, the scholia and the secondary sources will be made available using one of the different Creative Commons licences explained in Chapter 3.8.6, following the standards described by the OSCE and the notion of Open data in Classics developed in Leipzig. We made clear in Chapter 3.8.6⁷⁷ that we could publish an edition using a text in the public domain including all the information available in subsequent editions in the form of annotations made by contributors or users/readers. At present, the “Comprehensive Odyssey” does not provide this feature and relies entirely on printed editions, some of which are still under copyright, but this should be the future way of ensuring the project’s sustainability and feasibility.

We decided to accept the positions of specific scholars because single witnesses will not be published in this edition. In the period of time allocated to this research, it is not achievable to publish all the witnesses available. Therefore, there will be no editions of the medieval manuscripts of the *Odyssey*. Furthermore, this is not a traditional philological edition but a proof of concept of an edition focusing on use. We recognise that the best practice would be to scan and encode witnesses without concentrating on any previous edition, that is, to make this a born digital edition. We should state here that the final purpose is not just to provide all the witnesses, as the editors of the *Homer Multitext* are doing. The aim of an edition born digital should be to grant the user/reader more material, the material that the editor normally uses while he is creating his edition

⁷⁷ See also Chapter 6.3.

and which he selects and includes in the critical apparatus. The critical apparatus and a critically edited text must also exist in an edition born digital. In short, if what is produced is to be a digital critical edition, the final purpose must be a critically edited text. The work being carried out by the *Homer Multitext* project, on the contrary, as we explained in Chapter 2.6, depends on the assumption that we cannot reconstruct one single text for each and every poem and that every source may itself contain an original reading, so the compilers of the *Homer Multitext* are publishing all the witnesses without affording them different degrees of importance. With regard to the secondary sources, due to time constraints, the critical apparatus has not been encoded. It is recognised, however, that in a subsequent stage of this project it should be: the critical apparatus helps understand the Homeric quotations present in the text and it provides an insight into the editorial process behind the printed edition, which it might, in certain cases, be important to indicate. We shall describe below how we envisaged that this encoding should be carried out and by whom. We shall look at the model of the *Suda On Line* and at crowdsourcing and at how, and if, it could be implemented for a project like the “Comprehensive Odyssey”, bearing in mind the notion of Open Data and of providing a platform for commentaries.

As explained above, the work that will be carried out will bear in mind the processes of an edition born digital. One must remember, for example, that Pontani’s edition came over one hundred years after the last edition of Ludwich of 1888-90 (re-edited in 1966) and that the last complete edition of the *Odyssey* scholia was published by Dindorf in 1855 (reprinted in 1962) (Pontani, 2005, pp. 533-534).

Using a printed edition as a basis will not alter the making of the edition, and, mainly, the procedures will be the same as if the edition were born digital. There will be control over every encoding phase to minimise eventual errors, and hence, as Parker (2012a, pp. 144-45) explained when talking about the *New Testament* project, it is necessary to reduce the phases wherein the text may be manipulated. This means transcribing the text only once, storing it in a database, working on these data without attempting, if possible, to add anything further to the encoding (see Chapter 2.8).

We should state that the question of control while creating a digital edition is very important because the connections among the parts of the edition are unique. For example, a link from the critical apparatus to the text is to that one specific point only, and it is easier to notice whether something is missing or misplaced. The latter point will be described in further detail below, with the encoding of the scholia.

4.2.3 XML/TEI.

This “Comprehensive Odyssey” will be encoded in its entirety using XML/TEI. A TEI schema will be created using the Roma tool and the encoding will be effected via Oxygen XML editor. The TEI Guidelines will be followed to choose the correct elements for encoding. They will be questioned whenever they seem to be inadequate for the encoding of a specific aspect of the text or of any of the sources. The best methodological framework that can be chosen for a digital edition is the Open Source Critical Edition (OSCE) because this method incorporates the distribution of the scholarly and digital sources in connection with the normal academic accreditation. Using the OSCE in this specific case is problematic, not because it is not good enough, but because it is highly improbable that the present project will meet all its requirements, in the first place the concept of being open source, because it encodes printed editions that, in many cases, are still under copyright. We designed the project within the OSCE framework, even though this needed to be qualified due to our use of pre-existing editions. The encoding effected with XML/TEI should guarantee the portability of the edition, the possibility of saving its contents for further uses and analyses and it should also permit to link the edition to other editions or databases.

4.2.4 Editor vs. Editors.

This “Comprehensive Odyssey” is a proof of concept that will be carried out by one editor alone. As we can see looking at on-going or finished projects such as “*Jane Austen’s Fiction Manuscripts Digital Edition*”⁷⁸ and at almost all those described in Chapter 2, a digital edition is not normally created by one sole editor. Two exceptions are the *TLG* and the *Euripides Scholia*, where there is only one person that is both the editor and the one to contact for re-use of the material and contributions. There are collaborators, but there is undoubtedly just one editor. On the contrary, the *Perseus Project* has an Editor in Chief, an Associate Editor and a Managing Editor, the *Suda On Line* one senior editor and five managing editors, together with a technical director and the *Chicago Homer* and *Eumaios* two editors. Of the Leipzig Open Data projects, the *DFHG* has six contributors and *Perseids* five. Larger projects, such as the *New Testament*, are shared among different universities and are governed by a large committee. The *Digital Loeb* has a General Editor but every publication has his own editor.

⁷⁸ *Jane Austen’s Fiction Manuscripts: A Digital Edition*, edited by Kathryn Sutherland (2010). Available at <http://www.janeausten.ac.uk>. ISBN: 978-0-9565793-1-7

We understand that there are different opinions concerning the role of editor and the use of the word ‘editor’ itself. For example, if we look up the word in the *Lexicon for Scholarly Editing*⁷⁹ developed by Dyllen and Nayt at the University of Antwerp in 2012 (see Chapter 6.3), ‘editor’ is head of a category of words, editing and editor, each with a series of separated definitions. In particular, ‘editor’ has assumed until the present time, since the project is still ongoing, three meanings. They relate to interpretation (of meaning and document), scholarly (producing a scholarly edition), and social (whoever changes a text in any way). These definitions are taken from the sources the editors use as quotations and citations.

We can say that, in many circumstances, the number of editors is not important and what counts is the structure in terms of collaborators and in which fields they operate. It is a collaborative endeavour, where the digital aspect must be connected to the philological and scholarly one. It is equally important to have an editor who is a specialist in the philological aspect and one to deal with the technological development. Two groups of collaborators who will work together, knowing the development of the project from the planning stage, need to converge. In an ideal situation, an editor-in-chief should coordinate a group of scholars in the making of the edition (Chapter 3.9.4). They should make decisions together, but each scholar should be an expert in one specific aspect of the edition and in charge of encoding that part (Rehbein, 2008, p. 2). Each of them could be considered the editor of the specific part s/he will be in charge of. This is particularly necessary in an edition like this, which includes not only part of the first book of the *Odyssey* but also the sources constituting the tradition, for which the contribution of palaeographers and papyrologists undoubtedly seems necessary (West, 1973, imprint 1991, p. 64). These experts should also have a knowledge of XML and the TEI to encode the editions in the most consistent way possible, with the support of experts in information technology when necessary (Rehbein, 2008, p. 7). This should be an interdisciplinary edition, not merely a philological critical edition, created with the traditional instruments of philology, but one constructed bearing in mind the digital medium and its requirements for a classical text.

The involvement of scholars of different disciplines is necessary in such a project, but, as mentioned above, a digital edition can involve the user/reader in new ways, one of which might be the creation of a collaborative environment. One wonders whether it would be possible to use the kind of collaboration described for the papyrological database Papyri.info for encoding the secondary sources of the *Odyssey*.

⁷⁹ <http://uahost.uantwerpen.be/lse/index.php/lexicon/category/editor/page/2/>.

There might be a problem of consistency from a scholarly point of view, but it nevertheless remains a question that needs to be asked considering the vast number of sources that will be found if all the books of the *Odyssey*, not just the first 105 lines, are to be edited.

4.3 Design of the “Comprehensive Odyssey”.

The aforementioned principles illustrate the theories behind the “Comprehensive Odyssey”. This section describes the proposal for its visualisation. The ideas mentioned below express a view that partly describes this “Comprehensive Odyssey” project since some concepts show what could be achieved by encoding all the witnesses. First and foremost, we must define here what will be visualised and make a distinction between the intellectual content that is encoded and the display of that content. We follow the aforementioned notion of CTS, which, even when employed for citations, could also refer to the links that will play an important part in forming the visualisation of this edition. By visualisation we mean the display of the intellectual content encoded in the XML/TEI files. In this project, certain aspects of the encoding are still connected to the intellectual content even if they are linked to the visualisation we have envisaged. First, we imagined how this digital critical edition/repository should work and we then tried to encode the texts accordingly. We did not want to replicate the form of the page of the witnesses, as we shall describe below when explaining the encoding of the scholia, but wanted to maintain and encode the structure of the text of the chosen printed edition. CTS, which was not employed in this proof of concept, will help in a future development by giving a univocal identifier to the links and connections in the XML encoding of this “Comprehensive Odyssey”. The XML files do not consider the structure of the printed edition but of the encoded text. The XSLT files deal with the visualisation, the display of the content. To visualise the content in the proposed way, specific elements in the XML files are given identifiers. The essential aspect to be analysed should always be the intellectual content, as we saw in the *DFHG* project, where the XSLT files will be produced at a later stage. What is important is a thorough encoding of the chosen characteristics of the printed editions because the display might change due to the needs of the project and technological improvements. As we stressed above, we need to decrease the number of rewritings and additions in order to avoid as many errors as possible. The following paragraphs describe both how we envisaged the display of the encoding and the possibilities that could result from our XML/TEI encoding.

As far as the display of the encoding is concerned, an edition of the *Odyssey* built according to the above principles should also be considered an edition that contains within itself many editions on one sole platform (Vanhoutte, 2010). We encoded various editions and each one should be a critical edition; the central edition must be the text of the *Odyssey*, and it should be from this edition that the others depart. We thus clarify the purpose of this project: the understanding of the entire tradition of the *Odyssey*, from manuscripts and papyri to secondary sources. What we intend here is not to create a platform of independent editions, but a single platform of interconnected ones. It should be possible to create a link from a line in the *Odyssey* text to the scholia specific to that line. These links must be created in the form of a note, which will appear either on the left or on the right of the *Odyssey* text but which must not cover it. Since a word will also have an entry for the indirect tradition connected to that line, the problem arises as to how to decide in which way the indirect tradition entry can be linked to the line in the text. One possibility could be to create two links, one to the scholia and one to the indirect tradition. The text of the *Odyssey* would remain in the centre of the screen, and the matching scholia and indirect tradition entries would appear either on its left or on its right. A link should be inserted wherever in the text of the scholia there is an apparatus entry, which should appear whenever the user/reader goes over it with the pointer, while viewing the scholia together with the *Odyssey*.

There should be a status bar at the top of the screen containing the possibility of choosing to view the entire text of one source by itself, without the *Odyssey* text. This might seem contrary to what we have said about the text of the *Odyssey* always being the focal point of this “Comprehensive Odyssey”, but in point of fact it is not. To offer the possibility of also viewing the scholia on their own means recognising their importance as sources that require their own space, if we are to analyse the tradition and development of this edition thoroughly. It is clear that, to achieve this kind of display, we require a specific XSLT encoding which employs the identifiers added to single elements of the XML encoding, as we shall see further down in this chapter.

Moving from outlining a conceivable display to the opportunities XML/TEI can provide for a subsequent analysis of the encoded data, we can give some examples. The same procedure of recognition of the importance of the witnesses described for the secondary sources could be activated in the critical apparatus of the *Odyssey* text by rolling the pointer over the sigla of a medieval manuscript or a papyrus. In this case, we could include information in the explanation of the sigla for the codex or in a visualisation in a font size smaller than the papyrus text. By clicking on these links we

could view the text of the papyrus in a separate window, which will contain the edition of that specific papyrus.

The encoding could also help recreate the connection between the scholia found in a codex and the text of the *Odyssey* contained in the same medieval manuscript. When choosing a variant in the critical apparatus, it should be possible to recreate the text of the codex containing that variant. The same should be effected for the scholia, and we should be able to display these specific texts and scholia at the same time on the screen. This possibility might not be available for every manuscript because not all the medieval manuscripts contain both the text and the scholia. An example of this is manuscript V^o (Pontani, 2005, pp. 183-192). This codex is a glossary⁸⁰, it has lemma and explanations of the lemma in two separate columns with no text of the *Odyssey*. On the contrary, manuscript H=London, British Library, Harl. 5674 (Pontani, 2005, pp. 208-217) has the text of the *Odyssey* and scholia in the margins and between lines. Therefore, only in this case are the *Odyssey* and the scholia connected. The case of the manuscript Harl. 5674 also affords a link of the recreated text to the digital images of the manuscript which are online at the British Library web site among their digitised manuscripts⁸¹. If we linked the *Odyssey* text of one manuscript to its own scholia, we should give a unique identifier to the manuscript which must be the same in the encoding of the *Odyssey* and of the scholia. We shall need many identifiers, one for the *Odyssey* line and one for the same line in a specific manuscript; the same will be done for the scholia. We should use the CTS framework for the identifiers, but they will be complex and there will be many of them. Following the *Homer Multitext*, the same identifiers should be attached to every part of the manuscript image where there are lines and scholia. Finally, each scholia and verse in the manuscript will have its own identifier; we shall decide whether there should be an identifier for the encoding or whether the verse in the encoding will only point to the specific part of the image that refers to that specific verse or scholia. This requires a more complex referencing system.

Moreover, the user/reader should have the chance to replace a lemma with a specific variant and to save his/her version as a downloadable file, while it should never be possible to change the “Comprehensive Odyssey” permanently without the consent of the editor. There are tools allowing the parallel view of the text in different witnesses

⁸⁰ Glossaries are the most widespread way of explaining the most difficult Homeric terms. They are a kind of exegesis, defined as ‘scholia minora’, as is attested in papyri at least from the I century A.D. In medieval times they would find their place in the corpus of the scholia V, which took its *mise en page* from the papyri.

⁸¹ http://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Harley_MS_5674&index=0, description of the manuscript with link to the digitised images.

such as *Versioning Machine*⁸², developed by Susan Schreibman, while *Tei Critical Edition Toolbox*⁸³, developed by Marjorie Burghart, helps check the encoding while it is in progress, highlighting its errors and consistency. Furthermore, like *Versioning Machine*, it can display a chosen number of witnesses in a parallel way but can also show just a single one. Both these tools work with the XML/TEI encoding of the critical apparatus. *Versioning Machine* must be downloaded while *Critical Edition Toolbox* does not require downloading as we can upload the files and check the result through the web site. Neither of these systems substitutes a lemma in the original text: if one is annotated in the project, their aim is to compare parallel versions of the text. What we are trying to achieve in the “Comprehensive Odyssey” is choosing different variants from various manuscripts and produce a different final text, even if one not destined for publication. Every user/reader could look at the source material and reach a conclusion that differs from the editor’s; s/he might be allowed to produce her/his own version of the text, even if not one for publication and economic purposes. We should make it possible to insert variants both from the critical apparatus, the secondary sources and the scholia, where they include variants not comprised in the critical apparatus of the *Odyssey*.

In this way, all the sources will be equally important in the textual reconstruction, and, although we cannot be certain at this stage, it is thought that this new way of editing the *Odyssey* may well shed new light on its sources and their contribution to the edition.

The final purpose of this edition is to discover what the digital medium can offer a critical edition and whether an overall view of the sources that are usually treated separately can shed a different light on them, particularly on the Alexandrian school and the medieval manuscripts. This would also promote the analysis of the two different aforementioned theories that are considered the basis of the creation of a critical edition of the *Odyssey*: the theory of the original text and of Multitext (see Chapter 1.6).

4.4 The encoding process.

We pointed out in the first part of this chapter that the *Odyssey* text would be the core of the edition. The description of the XML files with the encoding and of the XSLT files handling the visualisation process further underline this concept. However, the illustration of the encoding and of its issues will not start from the *Odyssey*, but

⁸² <http://v-machine.org/credits.php> Accessed 13 January 2016.

⁸³ <http://ciham-digital.huma-num.fr/teitoolbox/index.php> Accessed 13 January 2016.

from the scholia because, from a digital perspective, the encoding of the scholia reveals most of the issues that need to be tackled in digitizing both the *Odyssey* text itself and the secondary sources. Many aspects, such as the encoding of the critical apparatus, will be explained in detail while illustrating the scholia, with a detailed description of the reasoning underlying every final decision. The same conclusions were reached and accepted when encoding the *Odyssey* text and the secondary sources since they stem from the same line of reasoning.

4.4.1 The encoding of the scholia of the *Odyssey*.

4.4.1.1 *General problems.*

The encoding of the entire scholia is a very lengthy process, which is very difficult to complete even for Book One alone. We are not saying that it is impossible to do so, only that it cannot be finished in the time allotted to this research (see final chapter). It is essential to stress that we are describing a process and its difficulties so there is always a tension between what *should* be and what *can* be achieved. Since the “Comprehensive Odyssey” is a proof of concept, we believe that a description of its encoding should include a depiction of the elements employed in it together with an explanation of what could be achieved, should this project progress further. What must be stated here is that encoding a printed edition entails not only the transcription of the text of the chosen edition but also understanding its structure, abbreviations and the meaning of every single part of it. This is not always straightforward since new challenges may appear as the encoding proceeds. Furthermore, encoding cannot be completed in a brief period of time if one is to avoid mistakes. To speed up the process, we decided to examine the *Perseus Project* and see whether an edition of the scholia was accessible there. Since there is no edition encoded on the *Perseus* web site, we then decided to look at the *Thesaurus Linguae Graecae* (TLG) to see which edition was available there that could be used as a source for our encoding. This proof of concept deals only with lines from the first book; we therefore resolved to encode the latest edition of the scholia by Pontani, which so far encompasses only the first six books. The TLG provided the Pontani’s scholia edition in May 2013, which made the encoding for this proof of concept a little easier. Prior to that, we could find only Dindorf’s edition online, again in the TLG. As we previously⁸⁴ mentioned, the edition by Dindorf, produced in 1855, is the last complete edition of the Scholia. Both Ludwich, in 1888,

⁸⁴Chapter 1.8.

and Pontani highlight its limitations and the fact that “a new analysis is necessary and a new edition should afford a better insight into the tradition of the scholia” (Chapter 1.8)⁸⁵.

This present attempt at a digital edition investigates how to encode every characteristic of the printed edition without being too closely tied to the book format. In the book edited by Clivaz et al. in 2012, we can find two different approaches to the digital representation of the scholia. They refer to the *Iliad* scholia and to the *New Testament*, which we first compared in Chapter 2.8. The former considers the scholia to be part of a multitextual or multiform reading of the text of the *Iliad* and of its ancient commentaries. Ebbott and Muellner (2012, p. 117-137) describe this method thoroughly in an article about the future of the *Homer Multitext*. Their view stems from analysing the manuscripts and the different positions where the scribe wrote specific scholia on the page in the Venetus Marcianus manuscript. They stress that the purpose of the *Homer Multitext* is to “include all of the multiforms that the scholia offer us” (2012, p. 132). They embrace the main scholia, the intermarginal scholia, the interior scholia, the exterior scholia and the interlinear scholia, bearing in mind that the concept of Multitext is to “not privilege one source over others” (2012, p. 135).

In the second method, on the contrary, the editors of the *New Testament* take a completely different approach, as Parker explains (see Chapter 2.8 and 2012a, p.139-153). He considers the application of the “new digital tools to the study of the Greek New Testament” a procedure possessing great potential (see Chapter 2.8). To sum up his opinion again here, he stresses that a digital edition and digital tools help create “more consistent editions” (2012a, p. 142) and are more efficient when dealing with all the data available for such a project. The major difference between the two approaches is that, from Parker’s viewpoint, the final result of the use of digital tools should be a “scientifically constructed critical text, and a critical apparatus which provides the supporting evidence...also...the editors’ justification for their decisions...” (2012a, p. 143). The most important point in Parker’s analysis is that, by using digital tools, the problem of re-transcribing the witnesses every time a new edition is produced is solved: after encoding, the raw data can be used repeatedly without having to re-write them,

⁸⁵The availability of the Dindorf edition would have at least rendered the encoding easier because we could have collated an available text with the Pontani edition, and we could have avoided writing the entire text from scratch. Unfortunately, it was necessary to consider that the two editions are different and vary in the order and in the number of scholia presented in each of them. Comparing our situation with what was available in the past, we can say that what is missing now from the *TLG* is only the critical apparatus and the apparatus *testimoniorum*, which is precisely what has been specifically encoded in this proof of concept.

thus reducing the number of errors. We can notice another difference between these proposals: in the same article, Parker, in stressing the importance of a critical edition, underlines that, as the *Homer Multitext* editors are well aware, it “gives an impetus to textual scholarship and palaeography”, but, unlike the *Homer Multitext*, it also helps recover the “oldest recoverable text... with accuracy and consistency and with ... of all the evidence [set out]” (2012a, p. 147-149).

Our encoding of the scholia of the first 105 lines of the first book of the *Odyssey* takes into account both positions while not being completely bound to either of them, particularly not to Parker’s because the latter seems to rely too heavily on the model of a printed edition. Both concepts are based on different notions concerning the transmission of the two texts, the theory of orality and multiformity and the aim to establish the oldest recoverable text. Nevertheless, we have to remember here the importance of a critically edited basic text as a polar star, a beginning, which will be of help when looking at the tradition provided. As we have seen, both points of view can contribute to a digital edition, helping to maintain the focus on the single sources and on every witness as instances of a literary composition which the basic text displays.

The “Comprehensive Odyssey” also includes the critical apparatus; it is, therefore, possible to see not only the text as Pontani established it, but also the variants the manuscripts contain. One thus has an edition with a critically established text but also the tradition that permitted its creation. We must say that what can be seen in this proof of concept is merely what is available in Pontani’s critical apparatus; it is, therefore, only as complete as Pontani decided to produce it. It would have been impossible to produce an edition of the scholia starting from the manuscripts; there are far too many of them to be dealt with in the time allotted to a PhD dissertation, and, as the history of the editions of the scholia demonstrates⁸⁶, it is not an end result that can be achieved on the spur of the moment. There are more than a hundred years’ between the edition by Dindorf of 1855, and the latest edition by Pontani, even if Ludwich recognised as early as in 1888 that the Dindorf edition needed an upgrade. For the same reasons of dimension, we also decided that the “Comprehensive Odyssey” would not comprise the entire first book of the *Odyssey*, but only the first 105 lines, simply because it is merely a proof of concept. We decided to encode a number of lines that might offer enough secondary sources to claim the feasibility of the project. It seemed that one hundred lines would be sufficient and number 105 marks the end of a sentence and it may be considered the end of the prologue to the *Odyssey*.

⁸⁶ See Chapter 1.8.

From a philological standpoint, what the “Comprehensive Odyssey” offers is to search all the encoded information and select it by the identifiers given to the elements. An example of what might be achieved from encoding such an edition can be to track down all the scholia following their source, using Pontani’s indications in the margin of the printed edition, such as ex., scholia or grammatical, rhetorical, antiquarian and historical origin, and Choer. for scholia that can be traced back to Choïroboskos. Another possibility would be to visualise only variants from a specific manuscript. At first sight, it might seem that this information is already available on paper, but a digital edition, for example, could provide it as the conclusion to a process that might begin with the *Homer Multitext*. We are suggesting that in the *Homer Multitext* an ever-growing number of manuscripts is scanned and more and more scholia are encoded, all of which connected to the image of the accurate place in the manuscript where the exact position of the scholia is to be found. The editors will not produce a critical edition of the scholia because the notion underlying this project stresses that no preference should be given to one manuscript over others because each manuscript can incorporate original variants. It would be very beneficial one day to acquire all the information of the *Homer Multitext* linked permanently to the part of the critical edition of the scholia they refer to; the *Homer Multitext* could be considered a repository of the material needed to create a critical edition. We again stress the link that could be made between the notions behind the *Homer Multitext* and behind the *New Testament*, connecting a repository and a critical edition. This could be available through implementing the CTS architecture to the encoding. Every manuscript digitised and transcribed in the *Homer Multitext* should be linked to the sigla of the manuscripts in the encoding of the *Odyssey* text and of its scholia. This could be effected by using as pointers the urn:cts assigned in the *Homer Multitext* to every single object, be it either an entire picture, a snippet or a verse or paragraph, in the transcription of the manuscripts. Using CTS as a linking method will mean that acquiring will not involve moving the collection of the *Homer Multitext* to within the “Comprehensive Odyssey” web site but only providing a method for understanding the tradition. As we have said above, the goal of the “Comprehensive Odyssey” should be to produce a platform of interconnected editions, which means different projects linked together. We refer to the *Homer Multitext* but we could refer to any project that might someday be published which will involve one of the sources encoded in this proof of concept. The “Comprehensive Odyssey” will provide a basic text and the *Homer Multitext* the manuscripts images and transcriptions. This could be a way of not losing the framework proposed by the *New Testament* project, providing the

connection of a base text to the sources and their transcription. Although it is almost impossible to recover the original text of the scholia, this does not mean that there should not be a critical endeavour to do so together with an assessment of all the available material. This entails following the encoding of the scholia and their publication in the *Homer Multitext*, with the purpose, however, of producing a critical edition as the outcome of this encoding.

4.4.1.2 *The encoding process.*

The scholia to an *Odyssey* line in the Pontani edition are thus structured: after indicating the line number, for example α1, the text of the scholia is divided into paragraphs identified by alphabetical letters, each letter indicating separate scholia on the same line, not necessarily on different words, and not on every single word. Numbers follow the letters if the editor thinks that the scholia have a different origin but came from the same root, for example α1 a, b1, b2, b3, c1, c2 etc. If s/he was confident about the source of a scholium, s/he put a letter or an abbreviation in its margin, indicating the proposed origin (for example V, ex., Choer. and Porph.). A colon separates the lemma, the words commented on by the scholia, if they exist in the manuscript or in the papyri; if they do not exist, the lemma is supplied between square brackets. The sigla of the manuscripts where the scholium was found appear at the end of each single scholium. Every line of the text of the scholia is numbered, the critical apparatus at the bottom of the page referring to these numbers as a way of connecting the variants to the text. The apparatus *testimoniorum* is located above the critical apparatus, and follows the same paragraph subdivision as for the scholia.

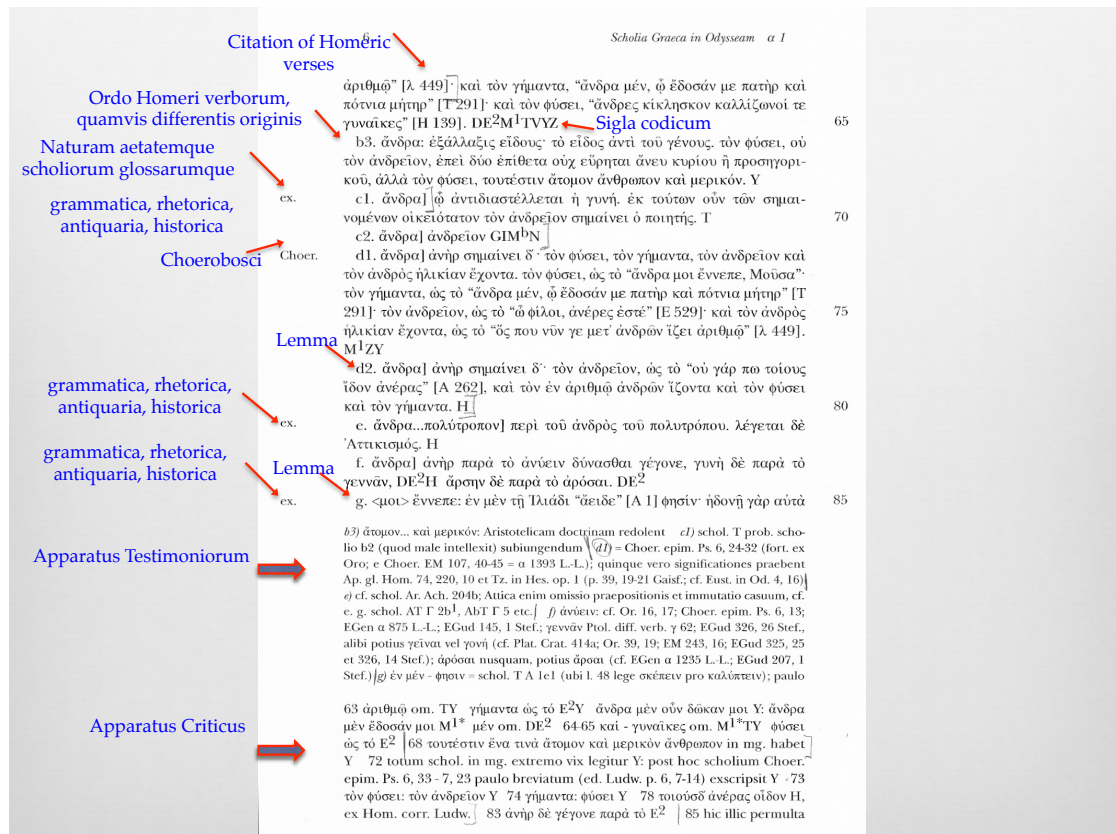


Figure 23 An example of a page of the edition of Pontani with added descriptions.

The paragraph structure of the edition of Pontani proves very useful when dealing with the apparatuses, particularly the *testimoniorum*, encoded using the same printed subdivision as the main text of the scholia. Following the TEI P5 Guidelines, we encoded each paragraph as a <p> element inside a <div> element. Every <p> was specified using the attribute n holding the letter Pontani used in dividing scholium on the same line.

<div>

<p n="e"><supplied resp="Pontani">φύγον</supplied>ἀφαίρεσις</p>

</div>

Wherever the editor put a letter or an abbreviation in the page margin, thus adding some information about the origin of the scholia, the attribute type was added to the element <div>.

<div type="V">

<p n="a1">οἴκοι: εἰς τὰ οἰκεῖα, ἐπὶ τῆς οἰκίας.</p>

</div>

The apparatus *testimoniorum*, situated after every scholium, is connected to a specific paragraph. It will be encoded as a <note> element at the end of a <p> element, with an attribute n holding the letter, or the letter and number corresponding to a specific paragraph of a scholium.

```
<div type="V">
  <p n="a1">οἶκοι: εἰς τὰ οἰκεῖα, ἐπὶ τῆς οἰκίας.</p>
  <note n="a1">ἐπὶ τῆς οἰκ.: de adv. οἴκοθι synag. o 43; alibi (schol. D A113, Ap.
Soph. 119, 10; synag. o 44) potius ἐν τῷ οἴκῳ</note>
</div>
```

The list of the manuscript sigla might be visualised many times before the <note> element and after the <p> element, but the encoding causes some problems discussed later in this chapter.

```
<div type="V">
  <p n="d1">νόστου: τῆς οἴκαδε ἐπανόδου</p>
  <listWit>
    <witness>M<hi rend="superscript">a</hi></witness>
    <witness>V</witness>
  </listWit>
  <note n="d1">cf. schol. α 5h1</note>
</div>
```

4.4.1.3 The critical apparatus.

The most important phase in encoding the scholia is the critical apparatus: only by encoding it consistently can we choose to visualise only those variants that pertain to a single manuscript. It is here that a digital edition can offer far more than a printed one: this process of selection could never be achieved in print.

We started by examining the three encoding methods that the TEI offers in order to choose a critical apparatus: the location-reference method, the double-end-point attachment method and the parallel segmentation method. This general description of the methods will also help to understand the encoding of the critical apparatus of the *Odyssey*, described in the next section of this chapter.

For this project, we decided to discard the location-reference method. In the Guidelines, it is described as “a convenient method for encoding a printed apparatus”, where “the apparatus is linked to the base text by indicating explicitly only the block of text on which there is a variant” (TEI P5 Guidelines, 2014, p. 419). Since it does not allow for a reconstruction of witnesses or for indicating the exact point where a variant occurs, the double-end-point attachment method and the parallel segmentation method were preferred.

Particular attention was also paid to the latter methods because they both, albeit differently, permit the reconstruction of witnesses. In both approaches, every variant is encoded within the element `<rdg>`, and the witnesses where a variant is found are encoded, with a unique id, as attributes of the element `<rdg>`, `@wit`. In the XSLT file handling visualisation, we can insert the instruction to visualise only those readings with a specific wit attribute. The double-end-point “enables full reconstruction of the text, or of the substantives, of every witness” (TEI P5 Guidelines, 2014, p. 420), and parallel segmentation “permits direct comparison of any span of text in any witness with that in any other witness. It is also very easy with this method for an application to extract the full text of any one witness from the apparatus” (TEI P5 Guidelines, 2014, p. 422). The double-end-point seemed suitable for the encoding required by this “Comprehensive Odyssey”, providing an “unambiguous matching of each variant reading against its lemma” (TEI P5 Guidelines, 2014, p. 420). Furthermore, it can be used with external apparatuses, thus leaving the base text untouched, with only one `<anchor>` element where variants end or begin. In the apparatus, the element `<app>` will carry only the attributes to and from, indicating the beginning and the end of the reading in the text, but the lemma will not need to be rendered explicit: it can be inferred directly from the text via a simple application. This method was created explicitly to handle “overlapping lemmata” (TEI P5 Guidelines, 2014, p. 421), but it presents a drawback, or at least it did on this occasion. Its full creation will be lengthy and difficult, the total exploitation of its potential requiring technical assistance, and one editor could not handle it by him/herself, as this method requires the precise indication of the beginning and end of a lemma in the base text with two anchors and a referral to these in the apparatus. In the case of overlapping lemmata, it would be a lengthy process to provide an anchor for every lemma considered part of a single variant. Moreover, it is not easy to retrieve the attributes to and from in an XSLT encoding.

This was why the parallel segmentation method was chosen on this occasion and for the apparatus of the *Odyssey*. In terms of feasibility, it requires more attention because it works only with an in-line apparatus and variants can nest inside one another, thus increasing the risk of writing words and variants incorrectly while inserting the encoding. The apparatus is provided within the base text and it necessitates greater attention, particularly as far as overlapping lemmata are concerned, because of the large amount of information added to the base text, sometimes concerning just a small portion of text. Another positive feature of this method is that the witnesses in various spans of text can be compared easily. The TEI Guidelines explain that it can be used “where

editors do not wish to privilege a text as the ‘base’ or when editors wish to present parallel texts” (TEI P5 Guidelines, 2014, p. 422). It is less convenient when a complex tradition is involved and when we require details of the analysis among witnesses. The segment where a variation is placed is encoded within the element <app>, which needs to be specified using the element <rdg>, one for each different reading. One is not obliged to insert the <lem> element in order to single out a specific reading as the lemma, but in this case it was also used for the sake of clarity.

```
<app>
<lem>ἔδοσάν με</lem>
<rdg wit="#b.1">μὲν ἔδοσάν μοι</rdg>
<rdg wit="#l #u.1">ἔδοσάν μοι</rdg>
</app>
Here is an example of “Nesting Lemmata”:
<p n="d1">
<app>
<lem wit="#p #g">ἱερὸν πτολίεθρον; διὰ τὸ
<app>
<lem>τετειγίσθαι</lem>
<rdg wit="#l #u.1 #n #p #g">κτισθῆναι</rdg>
</app>ὑπὸ
<app>
<lem>θεῶν</lem>
<rdg wit="#a #p #g">τῶν θεῶν</rdg>
</app>
</lem>
<rdg wit="#p #g">ἱερὸν πτολίεθρον; διὰ τὸ τετειγίσθαι ὑπὸ θεῶν.</rdg>
</app>.
ἢ διὰ τὴν πρὸς τὸν Δία εὐσέβειαν.
</p>
```

The sigla of the manuscripts for the best attested reading should not be fully written out: they can be inferred from an application once they have been provided as references. To exploit the possibilities of this method of reconstructing every witness we decided to position an element <bibl> with the attribute ‘corresp’ at the end of the element <p>. This refers to a specific <listWit> element inserted into the <sourceDesc>

element of the <teiHeader>, containing a number of <witness> elements encoding all the witnesses of one specific scholium.

```
<p n="f">τῶν—εἰπὲ καὶ ἡμῖν] ὧν σὺ οἶδας, ἵνα καὶ ἡμεῖς γνῶμεν.</p>
<bibl corresp="#v10f"/>

<listWit xml:id="v10f">
  <witness>M<hi rend="superscript">a</hi></witness>
  <witness>T</witness>
  <witness>V</witness>
</listWit>
```

The <bibl> element was frequently not put after the element <p> because different parts of the same scholium were found in different witnesses. In this case, each <bibl> was put at the end of the part of the scholium to which it belongs, inside the <p> element.

```
<p n="a2">
  <supplied resp="#Pontani">τῶν</supplied> ἀπὸ
  <bibl corresp="#v10a2"/>
  τῶν πράξεων τοῦ Ὀδυσσέως
  <bibl corresp="#v10a2a"/>
  /πράξεων αὐτοῦ ἀπὸ τινος ἀρξαμένη
  <bibl corresp="#v10a2aa"/>
  /τῶν παθῶν τοῦ Ὀδυσσέως
  <bibl corresp="#v10a2aaa"/>
</p>
```

We decided on this kind of encoding after a careful consideration of whether we could use the element <listWit> after the element <p> according to the TEI Guidelines or whether there were other, non-generic, elements that might be used for this kind of encoding. We shall describe the issues behind this choice further down in this chapter.

4.4.1.4 Problems in the encoding of the critical apparatus.

The following paragraphs describe the encoding of the critical apparatus and highlight the difficulties that arose during the process.

a) Sigla of the Manuscripts.

The first question concerns encoding the sigla of the manuscripts because they are quoted with a specific citation agreement that adopts sigla. In many cases, these sigla are composed of superscript letters, which are essential as reference points and need to be encoded correctly in a digital edition. Following the TEI, these letters can be encoded using the `<hi rend>` element. Its Guidelines specify that the manuscripts should be encoded in a `<listWit>` element in the `<sourceDesc>` element of the `TeiHeader`. Each `<witness>` element in the `<listWit>` could have `<hi rend>` within the element, when deemed necessary, and was given a specific `xml:id`. To identify the manuscripts carrying a specific reading, the TEI uses the attribute `wit` in the `<rdg>` element. The identifiers of the `wit` attribute are one or more witnesses referred to by using the `xml:id` with which they were supplied in the `TeiHeader`.

```
<app>
  <lem>βασιλεῖ</lem>
  <rdg wit="#a.1">τῷ βασιλεῖ</rdg>
</app>
```

```
<listWit>
  <witness xml:id="a.1">H<hi rend="superscript">3</hi></witness>
</listWit>
```

In his edition of the Euripides scholia⁸⁷, Professor Mastronarde, on the contrary, encodes the sigla of the witnesses in a different way, declaring that “for practical reasons” he arranged the number of items displayed as superscripts as little as possible. He decided that instead of listing a sequence of witnesses as $X^sX^aX^bT^sY^sGr^sZ^sZa^sZm^s$, he listed it as $XXaXbTYGrZZaZm$ entering the note ‘s.l.’ (supra lineam/above the line) in the position segment. To handle the cases of unavoidable superscript, he used a “seg with @type of ‘witMod’”, and such a segment can occur within the witness list, in remarks about lemma or position, in the apparatus criticus and in other `div4` elements, except the translation and keywords” (Euripides scholia web site, The XML Structure and Technical Details, 2010). This method does not conform with the TEI Guidelines and, in certain cases, gives an incomplete description of the witnesses; hence, it does not comply with the standard convention for citing manuscripts.

⁸⁷ See Chapter 2.9

b) Abbreviations in the critical apparatus, *omittit* and *addidit*.

To shift our attention towards the critical apparatus, the first phenomenon we have to deal with is understanding how the editor of the printed edition produced it and which abbreviations he chose to adopt.

A first example is the word *om.*, which means *omittit*. In a paper edition, we can write, for example, that ἡ *omittit* HM¹Z, to clarify that ἡ is not present in that particular place in the manuscripts HM¹Z. However, this is different when encoding with TEI. A TEI electronic edition cannot deal with an *omittit*, because it requires a clear statement of the missing word or sequence of words. In the following example, the text in the edition is ἦν ἡ Ἀθηνᾶ εἰς Ἰθάκην, and the apparatus reads “ἡ omissis HM¹Z εἰς Ἰθάκην om. H.” In this paragraph we shall assess two encodings we tried before describing the one chosen, which adheres to the Guidelines. In the first attempt, we decided to encode as <lem> not only the omitted word but also the word next to it, either the one on the left or the one on the right, to be able to reveal in the <rdg> that one word was missing:

```
<app>
  <lem>ἦν ἡ</lem>
  <rdg wit="#a #b.1 #f">ἦν</rdg>
</app>
<app>
  <lem>Ἀθηνᾶ εἰς Ἰθάκην</lem>
  <rdg wit="#a">Ἀθηνᾶ</rdg>
</app>
```

The same approach as tried for the *omittit* was attempted for those places where the editor put the word *add.* as “μόνα s.l. post ἐπίθετα add D.”:

```
<app>
  <lem>ἐπίθετα</lem>
  <rdg wit="#b.1">ἐπίθετα μόνα</rdg>
</app>
```

Here, the Generic Identifier uses an abbreviation: <lem> means lemma, <rdg> reading and <app> apparatus, signifying that <lem> is the sequence of words that the editor inserted into the text, while <rdg> are the readings of the witnesses, all provided within the element <app>. Finally, we tried another encoding with the elements <add> and <del>. The following paragraphs present the problems encountered with these elements. As we shall see, their use was, for many reasons, wrong, for reasons both of tag abuse and of description of their meaning in the TEI Guidelines. First, we could not

decide where, and what, to put inside the <add> and <del> elements: perhaps <del> should incorporate the omitted word and <add> the added word, including the elements within the <rdg>. The encoding thus changes:

```
<app>
  <lem>Ἀθηνᾶ εἰς Ἰθάκην</lem>
  <rdg wit="#a"><del>εἰς Ἰθάκην</del></rdg>
</app>
<app>
  <lem>ἐπίθετα</lem>
  <rdg wit="#b.1"><add>μόνα</add></rdg>
  <rdg wit="#b.1">ἐπίθετα μόνα</rdg>
</app>
```

Adopting this kind of encoding was problematic because it created problems of visualisation. If we had had to display only the lem, no problem would have arisen, but if the final aim was to display the variants, only the word inside the <del> element would have been visible, thus omitting one word in the <lem> element. For example, looking at <lem>Ἀθηνᾶ εἰς Ἰθάκην</lem> <rdg wit="#a">~~εἰς Ἰθάκην~~</rdg>, by displaying only the <rdg> element, the word Ἀθηνᾶ would be missing. Furthermore, using <del> and <add> in this way means committing a tag abuse. In the following paragraphs we explain why, in the initial stages, we decided to see whether we could not leave the <rdg> element empty, but encode the word that is not present inside the element <del> and produce a visualisation where the element <del> is invisible. We could effect this by writing the following instruction in the XSLT file: <xsl:template match="del"/>. We did so because sometimes more than one word is missing, and this word may be in the middle of a sequence of words whose order changes from manuscript to manuscript. Here, it seemed difficult to leave the element <rdg> empty, because it contained more information than the one about the om. abbreviation alone.

Here are some examples demonstrating why we thought that the <rdg> element should not be left empty.

a) This is a case of nesting lemmata with an <app> element inside another <app> element, and the <del> element displays exactly which text is missing, without having other elements inside it.

<app>
 <lem>πολλά ὁ μὲν ἔπαθεν “ἀρνύμενος ἦν τε ψυχὴν καὶ νόστον ἐταίρων” [α 5]
 ἐν τοῖς
 <app>
 <lem resp="#Polak">παρ' ἑαυτὸν<note>cf. α 4ὸν κατὰ θυμόν</note></lem>
 <rdg wit="#a">παρ' ἑαυτῷ</rdg>
 </app> σωστικοῖς ἔργοις τῶν κινδύνων, ἀλλ' οὐκ ἐν τοῖς μὴ παρ' ἡμᾶς
 ἀποβαινόντων. καὶ ὁμοίως ἐν τοῖς παρ' ἡμᾶς</lem>
 <rdg wit="#l"><del>πολλά ὁ μὲν ἔπαθεν “ἀρνύμενος ἦν τε ψυχὴν καὶ νόστον
 ἐταίρων” [α 5] ἐν τοῖς παρ' ἑαυτὸν σωστικοῖς ἔργοις τῶν κινδύνων, ἀλλ' οὐκ ἐν τοῖς μὴ
 παρ' ἡμᾶς ἀποβαινόντων. καὶ ὁμοίως ἐν τοῖς παρ' ἡμᾶς</del></rdg>
 </app>

b) In the second example, for the same section of text, there are two witnesses, one with an omission and one with words in a different order. Below we propose two encodings. In the first there is a lemma and two variants. In the second, there are nesting lemmata with two lemmas, with one variant for each lemma. The first is that preferred in this preliminary discussion of the “Comprehensive Odyssey” encoding.

<app>
 <lem>σημαίνει τὸ ὁμοῦ</lem>
 <rdg wit="#a.3">σημαίνει~~τὸ~~ὁμοῦ</rdg>
 <rdg wit="#t">τὸ ὁμοῦ σημαίνει</rdg>
 </app>

 <app>
 <lem>σημαίνει <app>
 <lem>τὸ</lem>
 <rdg wit="#a.3">~~τὸ~~</rdg>
 </app> ὁμοῦ</lem>
 <rdg wit="#t">τὸ ὁμοῦ σημαίνει</rdg>
 </app>

c) The same problem is to be found in the third example, and one can understand the impossibility of putting only the missing word in the <lem> element, without incurring in a case of nesting lemmata. When inserting two words, there was no need to

bear nesting lemmata, which require more careful handling because they involve two <app>, in which the first <lem> contains the second <app>. This is both more challenging while encoding and also more difficult while creating an appropriate XSLT script for handling nested <app>.

```
<app>
<lem>γεγαμημένην γυναῖκα</lem>
<rdg wit="#a #p"><del>γεγαμημένην</del>γυναῖκα</rdg>
<rdg wit="#b.3">γυναῖκα γεγαμημένην</rdg>
</app>
```

```
<app>
<lem>
<app>
<lem>γεγαμημένην</lem>
<rdg wit="#a #p"><del>γεγαμημένην</del></rdg>
</app> γυναῖκα</lem>
<rdg wit="#b.3">γυναῖκα γεγαμημένην</rdg>
</app>
```

d) Here is another similar case where we might have encoded nesting lemmata:

```
<app>
<lem>οἱ δὲ ἐδάσυναν, ἵνα ῥῖ</lem>
<rdg wit="#e">τινὲς δὲ ἐδάσυναν ἵνα ῥῖ</rdg>
<rdg wit="#l"><del>οἱ δὲ ἐδάσυναν ἵνα ῥῖ</del></rdg>
</app>
```

```
<app>
<lem>
<app>
<lem>οἱ δὲ ἐδάσυναν</lem>
<rdg wit="#e">τινὲς δὲ ἐδάσυναν</rdg>
</app>, ἵνα ῥῖ</lem>
<rdg wit="#l"><del>οἱ δὲ ἐδάσυναν ἵνα ῥῖ</del></rdg>
</app>
```

e) Here we have nesting lemmata with three omissions. Sometimes, as in this case, nesting lemmata are better kept in place.

```
<app>
<lem wit="#a #j"><app>
<lem>Πορφυρίου</lem>
<rdg wit="#l #u #a #b.3 #t"><del>Πορφυρίου</del></rdg>
<note>vide tamen ad α 70c</note>
</app>· ἀσκελὲς αἰέν</lem>
<rdg wit="#j">Πορφυρίου · ἀσκελὲς <del>αἰέν</del></rdg>
<rdg wit="#l #u"><del>Πορφυρίου · ἀσκελὲς αἰέν</del></rdg>
<rdg wit="#b.3">ἄλλως</rdg>
<note>scholio α 69c subiungens</note>
</app>
```

These exemplify the different cases the editor has to manage whenever om. is in the critical apparatus. The second and final problem with this encoding is the use of the element <del> according to the TEI guidelines. They describe <del> as an element that “contains a letter, word, or passage deleted, marked as deleted, ...indicated as superfluous or spurious in the copy text by an author, scribe, annotator, or corrector...is used to mark material which is deleted in the source but which can still be read with some degree of confidence, as opposed to material which has been omitted by the encoder or transcriber either because it is entirely illegible or for some other reason” (TEI P5 Guidelines, 2014, p. 82-83). In the abovementioned examples, the use of the element <del> is not appropriate because no part of the text is deleted or still legible, and no material is “omitted by the transcriber or editor...” which would need to “be indicated by use of the <gap> element” (TEI P5 Guidelines, 2014, p. 84). The <gap> element “indicates a point where material has been omitted in a transcription, whether for editorial reasons described in the TEI header, as part of sampling practice, or because the material is illegible, invisible, or inaudible” (TEI P5 Guidelines, 2014, p. 82). In the case of the *Odyssey* scholia, readings from various witnesses makes it difficult to decide whether we can or cannot use these elements that are not specific to the apparatus module. As mentioned above, it might seem redundant for the <rdg> element to include the <del> element with what is omitted in a specific manuscript. From a visualisation perspective, nothing changes, but, this way, we can check exactly what is missing in a manuscript by examining the XML code of the page. In conclusion,

we can state that neither the `<del>` element nor `<gap>` can be used in the aforementioned cases because it would mean committing a tag abuse and losing consistency and the interoperability of the encoding. The reason is that `<del>` deals with transcriptions, not with the critical apparatus, and `<gap>` means that a word or a series of words have been omitted on purpose, which is not the case with the *omittit* in the critical apparatus.

The same argument is valid for the add. abbreviation, where, instead of `<del>`, the element `<add>` was used. The `<add>` element refers to the transcription and to every case where a witness has an interlinear addition; thus using `<add>` in the critical apparatus means committing a tag abuse. Every time there are additions supplied by the editor within the text with no other variant in the critical apparatus or in the critical apparatus, we have to use the element `<supplied>`.

Knowing that tag abuse means compromising the interoperability of the encoding and transgressing the principles fundamental to the “Comprehensive Odyssey”, other possibilities were sought. Ultimately, as a solution we followed the advice of Burghart, who on her website⁸⁸ indicates how to treat omissions:

```
<app>
  <lem>fides</lem>
  <rdg wit="#V" cause="omissio"/>
</app>
```

We pursued this line in the “Comprehensive Odyssey”, encoding, therefore, all the cases of *omissio* accordingly. To sum up, it seems that the only way to avoid breaching the TEI Guidelines is to follow the solution Burghart proposes, even if this involves dealing with more nesting lemmata and it does not carry what is missing in the `<rdg>` element, which is empty. In order to encode the missing words inside the `<rdg>` element, we would have to create a new element, following the instructions in Chapter 23 of the TEI Guidelines (2014, pp. 682-717).

c) Note, Homeric lines, mss., lacuna.

This paragraph focuses on the digital transposition of other characteristics of the paper edition. In describing a digital edition based on a printed edition, in these paragraphs we point out Pontani’s editorial interventions in his edition. If we think about all the texts encoded in the “Comprehensive Odyssey” in this way, our project

⁸⁸ <http://marjorie.burghart.online.fr/?q=en/content/tei-critical-apparatus-cheatsheet#omissions>
Last visited on 28 August 2016.

seems similar to the *DFHG*. Therefore, we should consider whether, in a future development, the texts would not be better encoded following the *EpiDoc* approach for documentary material. The *DFHG* (See 2.10) is a digital edition of the printed critical edition of the Greek historians published by Müller. Similarly, the encoding of the scholia in the “Comprehensive Odyssey” is a digital edition of Pontani’s printed edition. However, we did not employ the *EpiDoc* methodology since we were thinking of using printed editions due to the time constraints of a PhD dissertation, and not as a final decision, should this proof of concept be taken any further (See 4.2.2). Furthermore, we believe that the text as a literary composition should be at the centre of the digital edition and not a specific printed one. We understand that it may seem to be stressing yet again what was, and what should have been, done but, since this project is merely a beginning, an initial thought on a digital critical repository/edition, we believe this issue is unavoidable. As we said above, in Chapter 2.10, the *DFHG* Guidelines should be examined as an example for encoding printed editions; therefore, if the edition of Pontani were deemed important to encode, they should be followed in the future. The Guidelines are central, showing the characteristics of the edition to possible contributors, allowing them to learn and understand how the project works. Furthermore, we should like to stress once more that if an edition of the scholia were to exist, links should be made from the *Odyssey* using the CTS architecture. Since no edition of the scholia is available, it was done from scratch here. Nevertheless, we recognised both for the scholia and for the secondary sources that the best solution would be single autonomous editions of each of the sources and witnesses, linked with urn:cts. In the “Comprehensive Odyssey” we shall add, at visualisation stage, a page showing the scholia and the sources in their own right, without the *Odyssey* text. To return to the transposition of Pontani’s edition, the following paragraphs describe four characteristics and how they have been encoded.

First, the editor sometimes inserts notes in brackets into the critical apparatus, which are connected to specific variants. They were encoded using the `<note>` element inserted in the associated `<rdg>`: `<rdg wit="#f">ἄλλως<note>ante hypothesis</note></rdg>`.

Second, we can find in the text of the scholia the quotations of some Homeric lines, from both poems. They are placed within square brackets and they have not yet been encoded in any way; however, we could encode them as lines linking them to Homeric texts in the *Perseus Project*, for instance, or to a digital critical edition if one were available one day. We refer here to the *Perseus Project* because, as we mentioned

in Chapter 2.3, it is a digital library that holds a collection of Ancient Greek texts, making their XML encoding available via a Creative Commons licence. Since it is undergoing continuous development, it will perhaps be possible in future to add commentaries and develop the notion of Open Data and collaboration (Crane, 2015), which is starting to be analysed and elaborated on the platform *Perseids*. We have already mentioned, both in this chapter and in Chapter Two, how works are linked under the CTS architecture (Chapter 2.6). We should stress here that, since *Perseus* provides a urn:cts for the works in its collection, it should not be difficult to provide unidirectional links to the editions hosted there. Since these identifiers will never change, the quotation link will never be broken. This justifies a wider and more advisable use of the CTS architecture, as we shall describe in the next chapter, with examples from the secondary sources. We should recall here that our notion of links means connecting editions from independent platforms whenever this seems possible. All encoding in the “Comprehensive Odyssey” should be substituted with links to digital editions wherever there is one published.

Third, we can sometimes find the abbreviation “mss.” for manuscripts in the apparatus. In the printed edition, at the end of every single scholium, the editor listed all the witnesses of that specific scholium. “mss.” refers to this list of the sigla of the manuscripts, placed either before the <note> element and after the <p> element or after each part of one specific scholium from a different source. The questions are how to encode this list of sigla and which identifier, supplied when adding the attribute xml:id to the element chosen for encoding the list, we should use to connect the mss. abbreviation to the list of manuscripts for that scholium. It is difficult to solve the first problem. We found three ways of encoding this list of manuscripts, each one creating difficulties concerning its compliance to the TEI Guidelines. The first is to use the <wit> element, containing a list of one or more sigla of witnesses attesting a given reading, in a textual variation. This element is only valid semantically, not structurally; it can only be put after a <rdg>, <rdgGrp>, or <lem> element within an <app> element. Furthermore, it can only “transcribe the witness information in the form found in the source” (TEI P5 Guidelines, 2014, p. 414). The second is to use the element <listWit> (witness list) that defines all the witnesses referred to by a critical apparatus, optionally grouped hierarchically. This is a tag abuse because it does not define new witnesses but merely references them. The third is to use the element <seg>, representing any segmentation of the text, but this is too generic for the use intended here. There are two possibilities: one is to modify the TEI schema, creating a new element, and the other is

to use the element `<seg>`, specifying it with the attribute type. If the latter option is chosen, the element `<seg>` could be encoded within an element `<bibl>` to specify that the information provided refers to the bibliographical sphere:

```
<bibl>
  <seg type="listWit">
    <seg type="witness">H</seg>
    <seg>M<hi rend="superscript">1</hi></seg>
  </seg>
</bibl>.
```

In conclusion, we decided (See 4.4.1.3) not to encode the lists of witnesses at the end of every scholium as in the printed edition but to insert instead a reference to those lists in the same place. These lists were encoded in the `<sourceDesc>` of the `<teiHeader>`, as described in Chapter 12.1.4.3 of the TEI Guidelines (2014, pp. 415-417). The element `<bibl>` was set in their places, and with the attribute `corresp` it refers to the specific `xml:id` of one list. We could, at visualization stage, make what is expressed only by `xml:id` visible.

As far as the latter question is concerned, a further problem is that each scholium comprehends a different list of manuscripts, so every list of manuscripts must have its own unique `xml:id`, which cannot be a generic `mss`. It has to be an identifier connecting each list of witnesses to one, and only one, of the paragraphs into which the scholia to a single line are divided. We could divide the identifier into two parts, the number of the line and the letter or the letter and number Pontani used to enumerate the single paragraphs. For example, in the first line, there are twenty-five lists of witnesses. The identifiers could be as follow: `v1a`, `v1b1`, `v1b2`, `v1b3`, `v1c1`, `v1c2`, `v1d1`, `v1d2`, `v1e`, `v1f`, `v1ff`, `v1g`, `v1h1`, `v1h2`, `v1h2h`, `v1h3`, `v1h3h`, `v1h3hh`, `v1h3hhh`, `v1i`, `v1ii`, `v1j`, `v1jj`, `v1jjj`, `v1k1`, `v1k2`, `v1k2k`, `v1k2kk`, `v1l1`, `v1l2`, `v1l2l`, `v1l2ll`, `v1l3`, `v1m`, `v1mm`, `v1n`, `v1o`, `v1p`. The letter before the number stands for the Latin word ‘versus’, translated in English with ‘line’. Every time different parts of the same scholium are found in different witnesses, there is one list of witnesses for each part. In the first line, examples of this kind can be found for paragraphs `f`, `h2`, `h3`, `i`, `j`, `k2`, `l2` and `m`. The identifier changes: after Pontani’s number of the line and the paragraph identifier, one letter identifying the paragraph is added every time there is a new list of witnesses. In paragraph `h3` there are four lists of witnesses: `1h3`, `1h3h`, `1h3hh`, and `1h3hhh`.

Fourth, in certain places we can find a lacuna in the text, which editors tried to repair where possible. Wherever this was not possible, Pontani put in square brackets a

number indicating the letters he thought were missing from the text, or only empty square brackets where he could not even hypothesize how long the missing part of text was. Where he put a number, we can encode the number using the element `<gap>` with the attribute `extent`. `<gap>` can be used “where the text has been rendered completely illegible by deletion or damage and no text is supplied by the editor in place of what is lost” (TEI P5 Guidelines, 2014, p. 387). When a letter is assumed, but unclear, it is encoded using the element `<unclear>`, which must be placed “where the text has been rendered partly illegible by deletion or damage so that the text can be read, but without perfect confidence” (TEI P5 Guidelines, 2014, p. 387). Where no number is specified, the element `<gap>` alone is used.

```
<unclear>v.</unclear>vαι<gap extent="±9"/>.
```

```
<unclear>y<gap/>.ηλ</unclear>
```

```
<app>
```

```
<lem><gap extent="±6"/>φς</lem>
```

```
<rdg resp="#Ludw.">οὐχ ὁλως</rdg>
```

```
</app>
```

d) Differences with the *TLG* encoding

In Chapter five we shall describe some case studies that arose from analysing the secondary sources encoded in the “Comprehensive Odyssey”. Mentioning Porphyrius as a secondary source read in the scholia, we shall describe the difficulties that the encoding produced may cause to the reading and understanding of the apparatus *testimoniorum* of the scholia (see Appendix 2). Unfortunately, we cannot compare the “Comprehensive Odyssey” encoding with that of the *TLG* because its source files are not available and, moreover, it has not yet been encoded in XML. Nevertheless, we can assess the two outputs with the help of Pontani’s printed edition. We provide here the “Comprehensive Odyssey” encoding of the beginning of the scholia to the first line, to permit a clearer understanding of its visualisation. We understand that the *TLG* is only replicating the printed edition of Pontani; therefore, any direct comparison might seem unrealistic but it is necessary because it will help explain one notion of the encoding of this proof of concept, i.e. its not following the page and line breaks of any printed edition.

This is the encoding of the “Comprehensive Odyssey”:

```
<div n="scholia1" xml:id="v1">
```

```

<head>a1</head>
<div type="Hrd.">
  <p n="a">ἄνδρα μοι· ἔδει μὲν ἐν τῷ "ἄνδρα" δύο εἶναι ὀξεύας, <app>
    <lem wit="#t">ὥς ἐν τῷ</lem>
    <rdg wit="#b.3">ὥς τό</rdg>
  </app> "ἄνδρα τε καὶ οἶκον" [ζ181], ἀλλ' <app>
    <lem>ἐφυλάξατο ὁ Ἀρίσταρχος</lem>
    <rdg wit="#t">ἐφθλάξατο Ἀρίσταρχος</rdg>
  </app> διὰ τὸ μὴ ἐν τῇ <app>
    <lem>εἰσβολῇ</lem>
    <rdg wit="#b.3">εἰσβολῇ τῶν λέξεων</rdg>
  </app> κακοφωνίαν ποιῆσαι</p>
  <listWit xml:id="mss.a1">
    <witness>M<hi rend="superscript">a</hi></witness>
    <witness>O</witness>
  </listWit>
  <note n="a"><p>cf. Io. Char. περὶ ἐγκλ., An. Bekk. 1149 καὶ εὐλόγως
    εἰς τὴν ἀρχὴν τῆς Ὀδυσσεύας ὁ Ἀρίσταρχος οὐκ ἐβουλήθη δοῦναι εἰς τὸ "ἄνδρα
    μοι" δύο ὀξεύας, ἀλλὰ μίαν εἰς τὸ αν, φάσκων· "ἐν ἀρχῇ ποιήσεως
    παράλογον οὐ μὴ ποιήσω"; de accentu duplici apud Aristarchum
    ceterosque grammaticos cf. schol. Hrd. B255b, Z 289a, H 199b; schol.
    HP<hi rend="superscript">1</hi> 200; epim. Hom. η 18; Lehrs,
    qu. ep. 104-107; Laum, Alex, Akz. 299; wackernagel, KS II, 1093 et 1106 </p></note>
</div>

```

Hrd.

a

ἄνδρα μοι· ἔδει μὲν ἐν τῷ "ἄνδρα" δύο εἶναι ὀξεύας, **O, 24** ὥς ἐν τῷ "ἄνδρα τε καὶ οἶκον" [ζ181], ἀλλ'
²⁵ἐφυλάξατο ὁ Ἀρίσταρχος διὰ τὸ μὴ ἐν τῇ ²⁶εἰσβολῇ κακοφωνίαν ποιῆσαι
 M^aO

Note:

cf. Io. Char. περὶ ἐγκλ., An. Bekk. 1149 καὶ εὐλόγως εἰς τὴν ἀρχὴν τῆς Ὀδυσσεύας ὁ Ἀρίσταρχος οὐκ ἐβουλήθη δοῦναι εἰς τὸ "ἄνδρα μοι" δύο ὀξεύας, ἀλλὰ μίαν εἰς τὸ αν, φάσκων· "ἐν ἀρχῇ ποιήσεως παράλογον οὐ μὴ ποιήσω"; de accentu duplici apud Aristarchum ceterosque grammaticos cf. schol. Hrd. B255b, Z 289a, H 199b; schol. HP¹ 200; epim. Hom. η 18; Lehrs, qu. ep. 104-107; Laum, Alex, Akz. 299; wackernagel, KS II, 1093 et 1106

Figure 24 "Comprehensive Odyssey": beginning of the scholia to the first line of the *Odyssey*, critical apparatus hidden.

a
ἄνδρα μοι: ἔδει μὲν ἐν τῷ "ἄνδρα" δύο εἶναι ὀξεύας, ^{O, 24} ὥς ἐν τῷ
M ^a
ὥς τό
"ἄνδρα τε καὶ οἶκον" [ζ181], ἀλλ' ²⁵ ἐφυλάξατο ὁ Ἀρίσταρχος
O
ἐφυλάξατο Ἀρίσταρχος
διὰ τὸ μὴ ἐν τῇ ²⁶ εἰσβολῇ
M ^a
εἰσβολῇ τῶν λέξεων
κακοφωνίαν ποιῆσαι
M ^a O
Note:
cf. Io. Char. περὶ ἐγγλ., An. Bekk. 1149 καὶ εὐλόγως εἰς τὴν ἀρχὴν τῆς Ὀδυσσεύας ὁ Ἀρίσταρχος οὐκ ἐβουλήθη δοῦναι εἰς τὸ "ἄνδρα μοι" δύο ὀξεύας, ἀλλὰ μίαν εἰς τὸ ἀν, φάσκων· "ἐν ἀρχῇ ποιήσεως παράλογον οὐ μὴ ποιήσω"; de accentu duplici apud Aristarchum ceterosque grammaticos cf. schol. Hrd. B255b, Z 289a, H 199b; schol. HP ¹ η 200; epim. Hom. η 18; Lehrs, qu. ep. 104-107; Laum, Alex, Akz. 299; wackernagel, KS II, 1093 et 1106

Figure 25 "Comprehensive Odyssey": beginning of the scholia to the first line of the *Odyssey* with the critical apparatus.

(1a) ἄνδρα μοι: ἔδει μὲν ἐν τῷ “ἄνδρα” δύο εἶναι ὀξεύας, ὥς ἐν τῷ “ἄνδρά τε καὶ οἶκον” [ζ 181], ἀλλ’ ἐφυλάξατο ὁ Ἀρίσταρχος διὰ τὸ μὴ ἐν τῇ εἰσβολῇ κακοφωνίαν ποιῆσαι. @1

Figure 26 Beginning of the scholia to the first line of the *Odyssey* in the TLG.

Even by merely looking at the scholia on the *TLG* web site, one clearly understands that what they are publishing is completely different from the “Comprehensive Odyssey” (see Chapter 2.2). They are achieving the recreation on screen of what is seen on the page, exactly as it is there, with the same line and page, not just paragraph, breaks. They also describe some aspects of the punctuation in the text. In the first scholium, they encoded the colon and both types of quotation marks, linking them to an online beta manual, providing their definition as “opening and closing double quotation marks”, “Latin colon, Greek dicolon, uncertain reading in *Res Gestae Divi Augusti*” and “either editorial or conjectural additions to the text or deletions from the text. Generally addition in papyrological and epigraphical use. Indeterminate between addition or deletion in codical use”.

The “Comprehensive Odyssey” does not follow Pontani’s line and page breaks; it pays attention solely to the paragraph subdivision. Furthermore, the “Comprehensive Odyssey” bears the critical apparatus. At the beginning of the project, the editors of the *TLG* decided to focus their encoding efforts on the base text of the works they were encoding, and this is still the case today (Chapter 2.2). Therefore, they are not encoding everything in the Pontani edition, in this case the two apparatuses and all the indications

of provenance of the scholia. This produces a searchable edition, but it does not permit one to set aside the printed edition.

In the “Comprehensive Odyssey”, the intention was to use the material in printed critical editions as the basis for digital critical editions. To achieve this, we encoded not only the text but also the critical apparatus and the apparatus *testimoniorum*. There may be places where Pontani, while using a paragraph division, cites a line number to express his opinion about a specific part of the scholium on which he is commenting⁸⁹. The problem with our encoding is that it encodes an entire paragraph, not single lines, which creates difficulties in understanding the apparatus *testimoniorum*, whereas Pontani connects it to a specific line of the scholia. We wonder whether there should be line encoding. It seems that doing so would not detach the edition from the book but continue the limitations of the printed page. One solution might be encoding the apparatus *testimoniorum* differently, attaching it to the text just as the critical apparatus did, but the apparatus *testimoniorum* does not always bear references to single lines of the scholia. So far, no solution to this problem has been found. A first step towards one might be separating its entries into those that carry line references and those that refer to an entire scholium. This would provide, at least, a numeric assessment of the cases where the editor refers to lines. We would then know exactly whether the entire encoding of the scholia needs to be changed or whether a specific solution should be provided for those particular occurrences. Nonetheless, this problem does not cause any total misunderstanding because the apparatus *testimoniorum* refers only to one specific scholium, more precisely to a specific paragraph, and to no other, being within the same <div> element, with an attribute n connecting it to one paragraph and one paragraph alone.

4.4.2 Digital Edition of the *Odyssey* text.

The text of the *Odyssey* in van Thiel’s edition is structured very simply and straightforwardly. It is divided into books and lines, as we can see in the picture below. The critical apparatus follows a line division and provides, at the beginning of each *Odyssey* book, a list of the manuscripts used to build the apparatus of the book. As we have mentioned⁹⁰, the text is available online only for non-commercial purposes, but without any punctuation, accents, capital letters or critical apparatus. This text was not used for the “Comprehensive Odyssey”. Instead, despite increasing the questions of

⁸⁹ See Chapter 5.3 and Appendix 2.

⁹⁰ See Chapter 1.7

copyright (see Chapter 3.8), we encoded the published text alongside its critical apparatus, because our final aim is to provide the whole text with critical apparatus; however, due to the constraints of time, we did not provide one for the secondary sources. We also encoded the list of manuscripts used in the apparatus and the list of abbreviations, to add information concerning the variants in the apparatus.

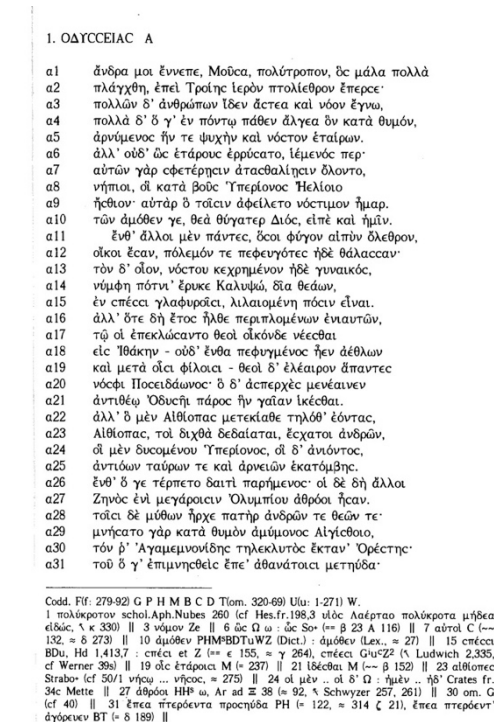


Figure 27 The first page of van Thiel's edition of the *Odyssey*.

Following the TEI Guidelines, the encoding was structured accordingly. First, we created the TEI Header, the description of “an encoded work so that the text itself, its source, its encoding, and its revisions are all thoroughly documented [...] supplies the descriptive and declarative information making up an electronic title page prefixed to every TEI-conformant text” (TEI Guidelines, 2014, p. 18-19). The TEI Header to this “Comprehensive Odyssey” includes the components <fileDesc>; the “(file description) contains a full bibliographic description of an electronic file” (TEI Guidelines, 2014, p. 19), and <encodingDesc>; the “(encoding description) documents the relationship between an electronic text and the source or sources from which it was derived” (TEI Guidelines, 2014, p. 19). The <fileDesc>, apart from the bibliographical evidence concerning the digital and source publication, carries the list of the papyri and manuscripts used by van Thiel and other editors in different critical editions of the *Odyssey*. This list is in the <sourceDesc>, (source description) which “describes the source from which an electronic text was derived or generated, typically a

bibliographical description in the case of a digitized text, or a phrase such as ‘born digital’ for a text which has no previous existence” (TEI Guidelines, 2014, p. 24). The TEI Guidelines state: “A list of all identified witnesses should normally be supplied in the front matter of the edition, or in the <sourceDesc> element of its header” (p. 415). We employed a <listWit> element; the “(witness list) lists definitions for all the witnesses referred to by a critical apparatus, optionally grouped hierarchically” (TEI Guidelines, 2014, p. 415), and the necessary <wit> elements inside it, and “contains a list of one or more sigla of witnesses attesting a given reading, in a textual variation” (TEI Guidelines, 2014, p. 414).

This is the structure of the <sourceDesc>, with the <listWit> elements:

```
<sourceDesc>
  <biblFull>
    <titleStmt>
      <title>Homeri Odyssea recognovit Helmut van Thiel</title>
      <author>Helmut van Thiel</author>
    </titleStmt>
    <publicationStmt>
      <publisher>Georg Olms Verlag</publisher>
      <address>
        <addrLine>Strauss Offsetdruck Gmbh</addrLine>
        <addrLine>6945 Hirschberg 2</addrLine>
      </address>
      <pubPlace>Hirschberg</pubPlace>
      <date>1991</date>
      <idno type="ISBN">3-487-09458-4</idno>
      <availability>Copyright 1991, Georg Olms Verlag</availability>
    </publicationStmt>
  </biblFull>

  <listWit n="1">
    <head>Papyri</head>
    <witness xml:id="b1029">1029b</witness>
    <witness xml:id="a1030a">1030a</witness>
  </listWit>

  <listWit n="2">
    <head>Manuscripts</head>
    <witness xml:id="B">
      <desc n="Van Thiel">
        <abbr>B</abbr>
        <bibl> Ambrosianus B 99 sup., s.XIII: cont. α 1-φ
          134</bibl>
      </desc>
      <desc n="Allen">
        <abbr>M<hi rend="superscript">2</hi></abbr>
        <bibl>Ambrosianus B 99 sup. (=121)
          s. XIII</bibl>
      </desc>
      <desc n="Ludwich">
```

```

<abbr>B</abbr>
<bibl>Mediolan. Ambros. P. sup. B 99</bibl>
</desc>
</witness>
<witness xml:id="Bi">
  <desc n="Van Thiel">
    <abbr>B<hi rend="superscript">i</hi></abbr>
    <bibl>interlinearvariante Ambrosianus B 99 sup., s.XIII: cont. α 1-φ
    134</bibl>
    </desc>
    <desc n="Allen">
      <abbr>M<hi rend="superscript">2</hi></abbr>
      <bibl>Ambrosianus B 99 sup. (=121)
      s. XIII</bibl>
      </desc>
      <desc n="Ludwich">
        <abbr>B</abbr>
        <bibl>Mediolan. Ambros. P. sup. B 99</bibl>
        </desc>
      </witness>
      <witness xml:id="M">
        <desc n="Van Thiel">
          <abbr>M</abbr>
          <bibl> Marcianus 613, s. XIII</bibl>
          </desc>
          <desc n="Allen">
            <abbr>U<hi rend="superscript">5</hi></abbr>
            <bibl>Venetus 613 s. XIII</bibl>
            </desc>
            <desc n="Ludwich">
              <abbr>M</abbr>
              <bibl>Venet. Marcianus 613 M<hi rend="superscript">a</hi>b<hi
rend="superscript">a</hi></bibl>
              </desc>
              <desc n="La Roche">
                <abbr>M</abbr>
                <bibl>Venetus no. 613</bibl>
                </desc>
              </witness>
            </listWit>
            <listWit xml:id="IBook">
              <head>Book I</head>
              <witness>F<bibl> <note>f: 279-92</note></bibl></witness>
            </listWit>
            <listWit xml:id="apparatus">
              <witness xml:id="Ze"><abbr>Zenodotos</abbr></witness>
              <witness xml:id="ω"><abbr>ω</abbr> <bibl>überall oder häufig dieselben
Varianten; die Bezeugung wechselt</bibl></witness>
              <witness xml:id="Parallelen4"><abbr>↯</abbr> <bibl>Bestätigung oder
Verteidigung der Textvariante</bibl></witness>
            </listWit>
          </sourceDesc>

```


We see here the structure of the entire <sourceDesc>, and how every manuscript was encoded within the <witness> element. For each there are the descriptions and sigla from all the critical editions of the *Odyssey*, providing a list of manuscripts, encoded in single <desc> elements. Every manuscript bears a unique xml:id as an attribute of <witness>, so all the descriptions, <desc>, of a manuscript use the same id. Every description encodes the abbreviation, <abbr>, and a short bibliography, <bibl>, the small description of each manuscript every editor provides. <desc> includes the name of the editor giving the description within the attribute n.

The text of the *Odyssey* with its critical apparatus comes after the <fileDesc> and the <encodingDesc>, after the end of the <teiHeader>.

```
<text>
  <body>
    <biblFull>...</biblFull>
    <div type="book" n="α">
      <lg n="1-105">
        <l n="1" xml:id="v1">ἄνδρα μοι ἔννεπε, Μοῦσα, <app><lem>πολύτροπον
</lem><note corresp="#Parallelen4">κ 330</note><rdg
wit="#schol.Aph.Nubes">πολύκροτον <note>schol. Aph. Nubes 260 (cf. Hes. fr. 198,3
υἱὸς Λαέρταο πολύκροτα μήδεα εἰδώς)</note></rdg></app>, ὃς μάλα πολλὰ</l>
        <l n="2" xml:id="v2">πλάγχθη, ἐπεὶ Τροίης ἱερὸν πτολίεθρον ἔπερσεν</l>
        <l n="3" xml:id="v3">πολλῶν δ' ἀνθρώπων ἴδεν ἄστεα καὶ
<app><lem>νόον</lem><rdg wit="#Ze">νόμον</rdg></app> ἔγνω,</l>
      </lg>
    </div>
  </body>
</text>
```

<text> comprehends bibliographical details on the chosen *Odyssey* edition, its text and the secondary sources. The *Odyssey* text is inside an element <div> within the <body>. The lines are grouped by the element <lg>, which, “(line group) contains a group of lines functioning as a formal unit, e.g. a stanza, refrain, verse paragraph, etc.” (TEI Guidelines, 2014, p. 143), and each line is in the element <l>; “<l> (verse line) contains a single, possibly incomplete, line of verse” (TEI Guidelines, 2014, p. 143). Both have an attribute n, providing the user/reader with the number of line.

The critical apparatus is encoded using the parallel segmentation method. The example of the first verse also explains how the abbreviations of van Thiel were dealt with. <app> includes not only the elements <lem> and <rdg> but also the element <note>, which was inserted anytime the editor added information either on the line or on the variant, such as <note corresp="#Parallelen4">κ 330</note> and <note>schol. Aph. Nubes 260 (cf. Hes. fr. 198,3 υἱὸς Λαέρταο πολύκροτα μήδεα εἰδώς)</note>.

The first note describes the encoding of one of van Thiel’s apparatus abbreviations, κ , encoded in an `<abbr>` element in a `<witness>` element in the `<listWit>` with the `xml:id` “apparatus” which was encoded in the `<sourceDesc>` element of the `<teiHeader>`. The editor’s description is provided within an element `<expan>` in the element `<witness>`:

```
<witness xml:id="Parallelen4"><choice><abbr> $\kappa$ </abbr> <expan>Bestatigung oder
Verteidigung der Textvariante</expan></choice></witness>
```

This is the list of the abbreviations, with a bibliographical explanation:

```
<witness xml:id="ω"><choice><abbr>ω</abbr> <expan>überall oder häufig dieselben
Varianten; die Bezeugung wechselt</expan></choice></witness>
<witness xml:id="Parallelen1"><choice><abbr>-</abbr> <expan>die Parallele stimmt
im wesentlichen Punkt überein</expan></choice></witness>
<witness xml:id="Parallelen2"><choice><abbr>== (~~)</abbr> <expan>die Varianten
auch an dieser (und weiteren) Stellen</expan></choice></witness>
<witness xml:id="Parallelen3"><choice><abbr>≈</abbr> <expan>morphologisch oder
syntaktisch verwandte Varianten</expan></choice></witness>
<witness xml:id="Parallelen4"><choice><abbr> $\kappa$ </abbr> <expan>Bestatigung oder
Verteidigung der Textvariante</expan></choice></witness>
<witness xml:id="Papyri"><choice><abbr>␣ J</abbr> <expan>umschließen wichtigere
mechanisch entstandene Lücken der Papyri</expan></choice></witness>
```

Introducing his critical edition, van Thiel describes what the critical apparatus contains, which might not seem conventional in all of its parts, particularly in the abovementioned one. There is “documentation of the information provided by selective manuscripts”, “a critical selection of the variants contained in the papyri”, “a critical selection of variants in the indirect transmission”, “references to parallels and discussion... to explain the transmitted text and often to defend it” and “the oldest manuscript for the D-scholia (Z) collated for the first time” (van Thiel, 1990, p. xxiii). The parallels describe influences on the tradition and possibilities for the origin of variants. He stresses their importance in the emergence of certain “categories of variants” and for understanding the mistakes of the copyist and their sort of automation. As we saw in the previous paragraphs, encoding the parallels in the critical apparatus was no simple task since the TEI module for the critical apparatus does not have specific elements that deal with these kinds of annotations. They were inserted into the element `<note>` and their abbreviations into a `<listWit>`, but this does not seem correct: they are not witnesses but reinforce and explain variants. Since the editor thought they pertained to the critical apparatus, they were encoded there, but they should be part of an *apparatus testimoniorum*, if it existed in the van Thiel edition.

At this point, we decided that, from a visual approach, the user/reader would see the same symbols as in the printed edition simply because they refer to explanations

inserted in the critical apparatus, not to variants. We did not change the visualisation, and these signs were left as they are in the printed edition, explaining their meaning at the bottom of the text. The only problem is where to put the <note> found in the element <app>, which includes the information on the line or on one variant because it refers to specific <lem> and <rdg> elements. From the viewpoint of the XML encoding, there is no particular problem; it can be inserted into the elements <lem> and <rdg>. It is more difficult to visualise this, using XSLT programming. The use of the XSLT stylesheet, described in 4.5.1, creates some problems in visualising the attribute corresp of the note element descendant of <lem> and <rdg>. The attribute corresp refers to the witnesses' identifiers encoded in the aforementioned listWit named apparatus. A solution must be found: thus far, if the XSLT file carries the instruction that the symbol used in the critical apparatus and encoded inside the <witness> is to be visualised through the attribute corresp, the note will appear not as a descendant of the rdg and lem elements it refers to, but as a following-sibling element. The following demonstrates how the encoding should be and how it now stands.

a) How the encoding should be, with note as a descendant:

```
<l n="15" xml:id="v15">ἐν
  <app>
    <lem wit="#B #D #u #Hd.">σπέσσι <note corresp="#Hd.">1,413,7</note>
  </lem>
  <rdg wit="#Z">σπέσι
    <note corresp="#Parallelen2">ε 155</note>
    <note corresp="#Parallelen3">γ 264</note>
  </rdg>
  <rdg wit="#Gi #uc #Z2">σπέσι
    <note corresp="#Parallelen4">Ludwich 2,335 cf. Werner 39s</note>
  </rdg>
</app>
γλαφυροῖσι, λιλαιομένη πόσιν εἶναι.</l>
```

b) How the encoding is now, with note as a following-sibling:

```
<l n="15" xml:id="v15">ἐν
  <app>
    <lem wit="#B #D #u #Hd.">σπέσσι</lem>
    <note corresp="#Hd.">1,413,7</note>
    <rdg wit="#Z">σπέσι </rdg>
    <note corresp="#Parallelen2">ε 155</note>
```

<note corresp="#Parallelen3">γ 264</note>
 <rdg wit="#Gi #uc #Z2">σπέεσι </rdg>
 <note corresp="#Parallelen4">Ludwich 2,335 cf. Werner 39s</note>
 </app>
 γλαφυροῖσι, λιλαιομένη πόσιν εἶναι.</l>

There are no other problems in the *Odyssey* critical apparatus apart from nesting lemmata, of which one example follows:

<l n="38" xml:id="v38">
 <app>
 <lem>Ἑρμείαν
 <app>
 <lem>πέμψαντες</lem>
 <rdg wit="#Pap1186 #Ze #Aph">πέμψαντε[ς] </rdg>
 <note corresp="#Parallelen3">v 296 Λ 103 δ 33</note>
 </app>,
 <app>
 <lem>ἐύσκοπον</lem>
 <rdg wit="#IBook">ἐύσκοπον</rdg>
 <rdg wit="#Pap1186">διάκτορον </rdg>
 <note corresp="#equalsign">=84</note>
 </app>
 Ἀργεῖφόντην,</lem>
 <rdg wit="#T" cause="omissio"/>
 <rdg wit="#Massaliotica">πέμψαντες μαίης ἐρικυδέος ἀγλαὸν υἱόν </rdg>
 <note corresp="#Parallelen4">West</note>
 </app>
 </l>

We must pay attention to the difficulty of encoding van Thiel's apparatus because it gives us information very concisely, using many symbols and abbreviations. On the contrary, the TEI requires everything that is to be encoded to be explicit and unambiguous. All the aforesaid notes denote the presence of a kind of short commentary on some variants. This somewhat gathers together what in the Scholia was separate, i.e. the critical apparatus and the apparatus *testimoniorum*, even if on a smaller scale. Many of these notes refer to parallels in other books of the poems or other works.

At this stage, they are not linked to any edition but it would be gratifying one if these connections could be linked to available digital editions and added here.

4.4.3 The Encoding of the Secondary Sources.

The secondary sources are in the same file and follow the *Odyssey* text, encoded in the element <body>. They are encoded in the element <back> within as many <div> elements as the lines of the *Odyssey* encoded here:

```
<back xml:id="d">
<div n="1">
...
<div n="105">
</back>
```

We decided to encode the secondary sources within what is called the back matter of a TEI file because it is an element open to many additions and interpretations and might well suit this case study: it can hold various <div>, which is adequate for encoding the secondary sources⁹¹. Every secondary source is encoded in an element <p> inside an element <note>,

```
<note corresp="#v1"xml:id="n3">
<bibl corresp="#b36">
<biblScope>n.26</biblScope></bibl><p n="26">...</p></note>
```

We shall now explain how every secondary source was linked first to the line it refers to and then to the bibliographical references of its author. This encoding was carried out in both cases with the attribute corresp. First, the element <note> carries an attribute corresp, linking the secondary source to a specific line (every line holds an xml:id) and to an attribute xml:id that specifies every note as unique. Second, the bibliographical information is found within the element <note>, provided in an element <bibl>, also linked by an attribute corresp to the bibliography of that specific secondary source. To understand this corresp attribute, we should add that, in back matter, in addition to the <div> bearing the secondary sources, there is another <div> containing the bibliographical references of the secondary sources mentioned, each one encoded in a <biblFull>. The identifier referred to in the corresp attribute refers to an xml:id attribute of the element <title> within the <biblFull>, <title xml:id="b56">La

⁹¹ The TEI Guidelines stress: “Conventions vary as to which elements are grouped as back matter and which as front. For example, some books place the table of contents at the front, and others at the back. Even title pages may appear at the back of a book as well as at the front. The content models for <back> and <front> elements are therefore identical. The following suggested values may be used for the type attribute on all division elements, in order to distinguish various kinds of division characteristic of back matter...notes A section in which textual or other kinds of notes are gathered together.” (TEI Guidelines, 2014, p. 178)

Préparation Évangélique/Preparatio Evangelica</title>. We decided we should provide certain information for every secondary source, which should be placed before the text, concerning the title, the author, the century of the author and the editor, encoded in elements <title>, <author>, <date>, <editor> within the element <titleStmnt> of the <biblFull>. The first three elements were each given an attribute to be of assistance with organising the bibliography, linking it to the text of the source.

```

<biblFull>
  <titleStmnt>
    <title xml:id="b56">La Préparation Évangélique/Preparatio
Evangelica</title>
    <author n="Eusebius">Eusebius Theologus et Scriptor
Ecclesiasticus<date when="0004">A.D. 4</date></author>
    <editor>Éduard des Places, s.j.</editor>
  </titleStmnt>
  <publicationStmnt>
    <publisher>Les Édition du Cerf</publisher>
    <pubPlace>Paris</pubPlace>
    <address><addrLine>29, Bd de Latour Mauburg</addrLine></address>
    <date>1980</date>
    <availability><p>Copyright 1980, Les Édition du
Cerf</p></availability>
  </publicationStmnt>
  <seriesStmnt>
    <title>Sources Chrétiennes</title>
    <biblScope>n.266</biblScope>
  </seriesStmnt>
</biblFull>

```

We should mention two final points concerning the encoding of the secondary sources. First, some of the latter do not carry an attribute `xml:id` but an attribute `sameAs` in the <note>. This is because certain sources encode more than one line in the same passage, and, therefore, `sameAs` avoids repeating the same passage when all the passages referring to the same source are brought together under the author's name and the title of the source. For example, five *Odyssey* lines (v.3, 4, 32, 33 and 34) are cited in paragraph 7 of the 38 *dissertatio* by Maximus of Tyrus. The attribute `sameAs` permitted the selection of the passage only once when unifying all the passages from the *Dissertationes* by Maximus of Tyrus. Second, every occurrence of the *Odyssey* lines in a passage of the secondary sources was encoded using three elements. <cit> “(cited quotation) contains a quotation from some other document, together with a bibliographical reference to its source” (TEI Guidelines, 2014, p. 71), <quote> “(quotation) contains a phrase or passage attributed by the narrator or author to some agency external to the text” (TEI Guidelines, 2014, p. 71) and <ref>; “(reference)

defines a reference to another location, possibly modified by additional text or comment” (TEI Guidelines, 2014, p. 96):

```
<cit xml:id="a84"><quote>ἐπεὶ Τροίης ἱερὸν πτολίεθρον ἔπερσεν</quote>
<ref>Odyssey α 2</ref></cit>
```

At times, the bibliography provides more than one edition under one source. Even if the text encoded is from one edition, others were also checked since they provided, for example, a translation or a commentary and were hence placed on the list. Thus, it was easier to understand the context surrounding the quoted lines. The length of each passage cited was decided according to the context. The main criterion was to provide the user/reader with a passage that maintained the most exhaustive meaning possible, according to the text, despite supplying only a fragment.

The last paragraph has described how the encoding of the secondary sources was carried out in the “Comprehensive Odyssey” but there is a major problem with the addition of secondary sources to this project: they are fragments. We have stressed that the architecture for the encoding of fragmentary text mainly used is the CTS URN. Initially we thought only of how to link the sources to the corresponding line. That is why the attribute *corresp* was added to the element *note* in order to link it to the line carrying as *xml:id* the same number as the *corresp*, but this attribute does not provide a univocal identifier to the *<l>*. Every note has an attribute *xml:id*, yet this is not univocal, either. The sole difference from the identifier of the line is that in the sources we have *xml:id="n3"*, while in the line there is *xml:id="v38"*. The same is the case of the bibliographical reference, whose identifier is *xml:id="b56"*. As we can see, the identifiers are only numbers, even if every line, note and bibliographical reference has its own number. If we were to implement the CTS architecture, the encoding will be more specific. Every verse will have a *urn:cts* carrying an identification for the person who creates the schema, the work cited and the passage cited. This will mean an identifier for the “Comprehensive Odyssey”, one for the van Thiel’s edition and one for the *Odyssey* lines. In addition, *urn:cts* need to be added to every passage in the secondary sources where the user/reader should identify the “Comprehensive Odyssey”, the edition cited and the passage of the source cited. Finally, CTS should be implemented in the same way also in the encoding of the scholia, thus improving the usability of the editions and enhancing them for future reuse with other projects. In the following chapter we shall describe a small number of secondary sources and why they were encoded in the “Comprehensive Odyssey”.

4.5 Visualisation.

4.5.1 XSLT.

The “Comprehensive Odyssey” is composed of three XML files, *Odyssey* book 1.xml, Scholia Book α .xml and Bibliography secondary sources.xml. To visualize the material in those files, six XSLT files were created: versi.xml, finale.xml, Bibliografia.xml, indirect sources.xml, scholialist2.xml, Scholia lista.xml and List of Manuscripts book I.xml⁹². The XSLT files have not been finalized but they are upgradable and changes can be made to suit other requirements or any further analysis that might be required hereafter. They create each of the many possible visualizations of the encoded material, one of the most important aspects of this digital project: it is not fixed and it does not suffer the constraints of the printed page or the ordeal of deciding conclusively about how to publish the final page. Therefore, every user/reader can download the source files and create his/her own visualisation for his/her own research purposes. We imagine providing the files using a Creative Commons Licence, following the OSCE framework, as we pointed out when talking about choosing printed editions. We understand that the users/readers will need some guidance with regard to XSLT. At first, we should provide this via Guidelines similar to those of the DFHG. Due to the difficulties in dealing with XSLT, it seems that only users with some previous knowledge of XSLT will try to produce their own text, with others needing some XSLT tutorials. These XSLT files were used for the transformation scenarios that formed four final HTML pages of the “Comprehensive Odyssey”: Home, indirect tradition bibliography, scholia and manuscripts book 1. Creating a transformation scenario and visualization is the most challenging aspect of the entire “Comprehensive Odyssey” from a digital perspective.

As we saw while describing the *Chicago Homer* (Chapter 2.4), XSLT does not always seem the best possibility for handling visualisation. Robinson (Chapter 2.4 and 2.6) developed two means of publishing that do not rely on XSLT, SDPublisher and DET. Robinson does not state why he decided to look elsewhere from XSLT. This is a complex issue connected to the broader question of how markup works and to whether we should continue to use XML, the TEI and XSLT. We are talking about embedded or

⁹² List of HTML pages produced with the transformation scenarios created with the *Odyssey* book 1.xml file:

versi.xml and finale.xml: Home page.

Bibliografia.xml: Single pages of the secondary sources.

indirect sources.xml: Indirect Tradition Bibliography.

scholialist2.xml: Scholia.

Scholia lista.xml: bibliography of the scholia.

List of Manuscripts book I.xml: Manuscripts Book I.

standoff markup. In his article of 2012, Schmidt talks about removing markup from an encoding and putting it in standoff form, so that “markup tags are removed from the text and stored in a separate file, together with their offsets into the plain base text. In this way any markup-set can be later combined with the plain text to produce a normal SGML or XML document” (Schmidt, 2012, p. 138). Further in the same article, when trying to envisage a non-XML system for handling texts in digital humanities, he deals with the subsequent loss of “standard XML tools”, which are: “XML Parsers, XML Editors, XSLT, XPath-based searching, XQuery” (pp. 141 - 142). As regards XSLT, Schmidt downsizes its use, affirming that its main employment is to “transform XML digital surrogates into HTML”. Its other functionalities work towards examining every elements and attributes of XML or “servicing the syntax of XSLT”. Only a small number of functions of XSLT generate HTML. The author believes that “although this is an important function, it could be performed in another way more simply and is not indispensable” (Schmidt, 2012, p. 142). Schmidt is not alone in asking whether we should continue with the same kind of encoding. Another example is Ore, working on Henrik Ibsen’s writings⁹³, who, in an article of 2012, deals with markup, looking at how it should be implemented and at its history from ancient classical philology to XML/TEI and digital editing. We should remember that the Ibsen project works with XML/TEI or, to be more precise, with a customised version of the TEI which at present is not TEI conformant. The author wonders whether standards are of any use, if they need to be modified to be employed in a specific project. We should follow a specific standard, however, due to the great number of tools and services available, even if developed for other projects. For example, by being encoded in XML the Ibsen project can rely on “eXistXML-textbase, XQuery, XSLT, Cocoon and generators/transformations” (Ore, 2012, p. 119); thus, new tools were not needed, which would have been proprietary for the encoding of that specific project. In conclusion, he examines inline or standoff encoding, stressing that we can convert from an encoding with inline XML to one where certain information is stored in a database. Even if standoff markup “allows for the encoding of data stored in other places or on read-only media” (Ore, 2012, p. 119), Ore states that it makes it more difficult to retrieve the data because, if it relies on URI or a bit count, “the data and so the byte (vel sim.) address will change as well” (Ore, 2012, p. 122) Therefore, the data need to be “under control of the association responsible for the standoff codes” (Ore, 2012, p. 122).

⁹³ www.ibsen.uio.no Accessed on the 2 February 2016.

We realise that XML and XSLT should not be taken into consideration without considering their drawbacks and that, if XML is abandoned for another encoding, another grammar may be developed for the visualisation. As things stand, XML and XSLT work together and are a *de facto* standard to be followed, despite being aware of their limitations, in order to improve interoperability between projects.

What is interesting here is understanding how XSLT works and how to achieve the visualization the editor has in mind.

The `versi.xml` and `finale.xml` XSLT files are those most important for the edition because they handle the visualization of its main page, i.e. home. On the HTML home page there are four frames, whose content was produced with the transformation scenario created with the *Odyssey* book 1.xml and the `versi.xml` file. The file `finale.xml` manages the place where the content created will be visible on the HTML page. In `versi.xml` there are a series of instructions concerning how each secondary source will be connected to a specific line and how the scholia will be similarly linked to the line. The edition comes mainly from the creation of external documents linked to the *Odyssey* text, which is the core of the “Comprehensive Odyssey”. The encoding and the visualisation processes reinforce the notion that every aspect of the edition stems from the *Odyssey* lines, from every connection we can establish between the sources and from every research path we may find by examining both the passages and the variants they might possess (see Chapter 5).

This can easily be seen by skimming through `versi.xml`. One can thus notice that all external documents are created from a template applied to the element `<l>`, the element used to encode the *Odyssey* lines. This template handles the fundamental points in the “Comprehensive Odyssey”. Every single instruction available in it helps to build up the structure of this project, and every passage in it reinforces the view that the *Odyssey* text is the focal point of the edition. Attention is drawn to producing links connecting the secondary sources and the scholia to the lines. These links associate the lines with two groups of external documents, those including the secondary sources and those handling the scholia. In both cases, one document for every encoded *Odyssey* line was created, as can be seen in the encoding provided below:

```

<xsl:template match="I[@xml:id]">
  <a name="{@xml:id}">
    <xsl:result-document href="{@xml:id}.html" method="xhtml" doctype-
system="http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd"></xsl:result-
document>
  </a>
  <a name="{@xml:id}">
    <xsl:result-document href="{@xml:id}.html" method="xhtml" doctype-
system="http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd"></xsl:result-
document>
  </a>
  <html><head><title>Odyssey</title></head><body><xsl:apply-
templates/></body></html>
</xsl:template>

```

There are two links for every line, created with the elements <a>, visible through the letters I, indirect sources, and S, scholia, positioned on the left of the line. This template manages two XML documents, running only from *Odyssey* book 1.xml, but also creating the results needed by using data from *Scholia Book α.xml*, facilitating the production of the edition. As one can see, there are two series of resulting documents, one referring to the file with the scholia.

This instruction created two series of documents, but other templates were needed to tackle other links and connections. The most difficult and important ones, for additional technical reasons, shape the visualisation of the scholia and *Odyssey* critical apparatuses. There were problems, for example, as to where to view the apparatus, how to number it, connect it to the text and visualise the abbreviations. There were cases of nesting lemmata needing specific instructions to be numbered correctly and viewed in the correct place. The problem of how to envisage the critical apparatus was solved by creating a short JavaScript attached to the lemma. This generates a number near the lemma. By clicking on it, the user/reader unveils the variants to that specific lemma, which is displayed together with the abbreviation of the witness, where the latter is available. All the witnesses in the critical apparatus are abbreviated following the list of van Thiel's abbreviations for the *Odyssey* and Pontani's for the scholia.

The template concerning bibliographical references is another important one. It connects the title of each secondary source found under each line to a single external document, where every occurrence of that specific source is found. It also adds to each

source a small amount of bibliographical information, such as title, author, date and editor. All this is needed to visualise what in the XML encoding is expressed only by numbers, such as `<bibl corresp="#b12"><biblScope>p.162-163</biblScope></bibl>`, as we can see in this fragment of the edition.

Excerpta de sententiis.

Constantinus VII Porphyrogenitus Imperator Hist. et Scr. Eccl.

A.D. 10

Carolus de Boor

Figure 28 Bibliographical Information in the external document of one specific source

Thereby the user/reader can easily discover the edition chosen for that specific work. To look for more detailed bibliographical information, the user/reader can check the page Indirect Tradition Bibliography, where s/he can find an exhaustive bibliography for every secondary source, ordered by date. Despite having previously stressed that the *Odyssey* text is the most important aspect of this edition, the indirect tradition is of value in its own right. The “Comprehensive Odyssey” permits viewing the secondary sources by themselves through the creation of single files, each having all the passages appearing under the same element `<title>` in all the lines encoded. On the page Scholia, we can view the Scholia and the lines of the *Odyssey*. The Scholia are as important as the secondary sources and they require their own space. Apart from the indirect tradition, prominence was also given to the manuscript on the page Manuscript Book I, which includes a table with the descriptions of all the manuscripts of the *Odyssey*, encoded following all the printed critical editions taken into account in this digital project. To look at the sources without losing sight of the text of the *Odyssey* closely connects the indirect tradition to the text. It makes it possible to discover all the lines cited in one work. Furthermore, on the bibliography page for the indirect tradition, while offering all the sources arranged by the date of the authors, we can discover how many works by the same author cite *Odyssey* lines.

One last important point to be mentioned is that the Home page of the “Comprehensive Odyssey” is structured into frames, as can be seen from the XSLT file `finale.xsl`. It might seem inappropriate to use frames because they are considered deprecated. The major problem we encountered regarding the use of frames is that it is difficult to resize them yet leave them all visible on the web page, despite how small the page is on the screen. The question of the near impossibility of using the browser back button with frames was overcome, up to a certain point, thanks to the description bar at

the top of every page of the “Comprehensive Odyssey”, which contains links to all the aforementioned HTML pages included in the “Comprehensive Odyssey”. In this way, whichever page the user/reader is on, s/he can click on the name of that page on the bar and go back to its default visualisation. We realise this is not the best system but it has not yet seemed to have caused any particular hindrance to the project. Moreover, the “Comprehensive Odyssey” is a proof of concept, and this structure offers the visualisation of the project as it is intended. If the “Comprehensive Odyssey” should be developed further, the chance will be taken to look at more compatible ways of structuring a HTML page.

HOME INDIRECT TRADITION BIBLIOGRAPHY SCHOLIA MANUSCRIPTS BOOK I GENERAL INTRODUCTION DOWNLOADS CONTACTS

Figure 29 Comprehensive Odyssey description bar

4.5.2 CSS.

Each XSLT file contains information about the visualization of the HTML page created using the transformation scenario. These concern the style of the HTML page and were created using the language Cascading Style Sheet (CSS). CSS in no way changes how the material is organized, but only how it appears on screen. The information supplied by the CSS language enhances the visual experience, helping users/readers surf/use/read the page in front of them. From our experience of the “Comprehensive Odyssey”, we can state here that using XSLT is similar to learning a new language, a new grammar, and it feels like learning to think in a different way, particularly when the editor’s background is not computer science but classics. The difference with CSS is that it is very difficult to achieve a point where knowledge of this language is fully proficient: one’s knowledge can always be improved, or one can understand better how the final result the editor wants to achieve functions. Our CSS is very simple, but we feel that it might need improving due to the frame structure of the Home page, which is not easy to handle, despite permitting a clear and simple configuration. The limitations of using frames call for a visualisation that will be better understood not only by the editor but also by the user/reader because four frames on the screen do not leave enough room for the text, which is sometimes too small to be seen on the screen. A solution might be to find ways of expanding or reducing the frame size, perhaps by using JavaScript. At this stage of the project, it is not yet clear how this problem will be solved. We should just add one more example to this question about frames, *Versioning Machine*. We mentioned above in this chapter (4.3) that it makes it possible to visualise parallel versions of a text from various witnesses. In version 5.0 the

editors describe how they tackled space limitation on a screen. They provide a way of changing the size and location of panels to adapt the page to the needs of the moment. They stress: “The total horizontal scrollable space is therefore determined by the total number of witnesses that are opened. The total vertical scrollable space is determined by the length of the longest open witness”. We can also see the workspace accommodate the number of witness open on the screen, but this cannot continue endlessly, and the program handles at length a large text with a huge number of witnesses. This is one way of solving this issue, via scrolling and Java, but, currently, it seems a solution that might work even for the “Comprehensive Odyssey”.

4.5.3 TEI Issues.

We have assumed here that the TEI should be employed in digital critical editions as it is to be seen as a standard for digital editions. We should express more clearly that taking the TEI as a paradigm to be employed in digital critical editing does not mean being unaware of its limitations. First, we should state that the notion of TEI is more complex than it seems. Following Jannidis (2009), the TEI can be considered an Organisation, a Research Community and a set of Concepts and Tags. The TEI is the organisation that maintains and develops its Guidelines for future, and different, uses together with being a community of users discussing their needs. Users can perceive the TEI as mainly a set of tags and elements that change and develop over the years due to the needs of the various disciplines employing it. The number and complexity of these tags is what can cause the TEI to become overcomplicated for a number of users and, in Jannidis opinion, this is why many users would prefer to “learn how to write their own schema than learn the TEI” (Jannidis, 2009, p. 258). Following Pierazzo (2015), the TEI can be described as a mean for better understanding the components of texts, offering a common vocabulary for the same features in different disciplines, describing an increasing number of characteristics. The TEI also fulfils one of the requirements of the OSCE (Bodard and Garces, 2009), the need for “transparent documentation...to qualify the edition as ‘open source’” (Pierazzo, 2015, p. 130). Nevertheless, Pierazzo cites three hindrances to the employment of the TEI: “access, flexibility and overlapping hierarchies” (Pierazzo, 2015, p. 130). As Jannidis said, Pierazzo stresses again that the number of elements belonging to the TEI is so great that every scholar who has to learn it for a project might find it overwhelming. In being so full of elements, it can also make the development of tools that could help in the encoding of a huge number of similar phenomenon with their proper element more difficult, despite offering flexibility. The

third question is that, being “based on XML, it cannot offer a full and convenient support for features that requires non-hierarchical structures” (Pierazzo, 2015, p. 131). This third problem has not yet been solved, while, as mentioned above, one possibility would be to use standoff markup. Pierazzo stresses that we could thereby encode the texts with a small number of elements, while keeping the more complex annotations in external files. She follows Schmidt’s notion that embedded markup hinders file sharing because adding markup to a text means adding our own interpretation of it, connected to the project of the person to whom the text belongs. At first sight, standoff markup seems a suitable solution, but it suffers from “the lack of editorial tools and support at the scale of the individual scholar”, requiring a “complicate[d] software architecture” (Pierazzo, 2015, p. 132), and learning its use seems now even more challenging than learning XML and the TEI. Pierazzo concludes that standoff markup needs further development before it can become a tool employed on a larger scale, such as XML and the TEI are now. Nevertheless, standoff markup has its own complications, even if of a different nature. If we remove almost all the markup from the main text, the text might seem a “stable, pure object without interpretation” (Pierazzo, 2015, p. 133), whereas actually “an allegedly ‘plain text’ (that is a text without visible codes) is not a text without interpretation, but a text where interpretation is conveyed by writing conventions and implicit assumptions” (Pierazzo, 2015, p. 134), which should never be forgotten during any kind of encoding.

We stated above, in Chapter 4.5.1, that there is an ongoing discussion on the positive and negative characteristics of XSLT, with a call to seek another standard for handling the visualisation of XML files. We argued that, in the present situation, we should continue to employ XML/XSLT, whilst being aware of their acknowledged limitations. We called XML/XSLT a *de facto* standard and here we should add the TEI to that list. We discussed the growing interest in standoff markup but, as stated by Pierazzo (2015), there is still a long way to go before we can embrace this different method of publishing XML files. Having now three documented and studied *de facto* standards, we should be very careful about which new language or infrastructure to study. In particular, we should not think of standoff markup as an idea connected to the notion of no interpretation. It will only provide a useful “module of a document” (Pierazzo, 2015, p. 133), but there will always be an interpretation, even in a ‘plain text’.

4.6 Conclusion.

In this chapter concerning the enquiry into how encoding works, it became clear how an encoding reinforces the attention paid to the text. In the following chapter on secondary sources we shall see how encoding a text familiarizes us with its difficulties, with the characteristics of different printed editions and with how they can shape the content of articles and commentaries. The description of the encoding procedures stresses how every single aspect of a text needs to be clearly understood in order to be handled correctly during encoding. The reason for this is that following the TEI Guidelines means following a set of rules, which must be applied to the text. However, they cannot be applied as easily as they should be. Tackling a digital project for further research would be helped by creating an efficient means of encoding, but this is a difficult achievement requiring a great deal of time. Producing a digital edition from printed editions involves problems, most of which, however, derive from the editor re-mediating from the printed medium and transferring what was produced for the printed page, adapting it to the digital screen. As in all digital projects, the main question is the time required to conclude them (see Chapter 6). Even if what we have clarified here may become fairly straightforward once it has been learnt, it will nevertheless take a long time to complete a project entailing the encoding of all the secondary sources of the *Odyssey*. It is important to state here that the question is not only a technical one. As we shall see in the next chapter, the difficulty consists in both choosing how to encode the secondary sources and which sources to encode, whether to select only those reporting a line or also sources referring to a specific line, and mentioned in the Scholia, or in an article on a subject related to a specific line of the *Odyssey*.

As far as the digital aspect is concerned, one final point is that encoding should be as consistent as possible and that we must assess all the problems that might stem from it while, at the same time, trying to make decisions. Problems can arise not only while following the TEI Guidelines, but also when working on the XSLT file handling the visualisation. In working on this edition, the major difficulties occurred while encoding the critical apparatus of Pontani's scholia. This is because, compared to van Thiel's edition of the *Odyssey*, it is more complex in terms of witnesses and in the description of the various issues the editor analyses, hence providing a larger number of cases that are to be analysed in the prospect of an encoding. We should mention here that encoding the entire *Odyssey* and its scholia would be too great an endeavour for one editor alone mainly because the errors that might occur while transcribing such a long text would increase, something that must be avoided. It also seems necessary for the

creation of the visualization of the digital edition to be effected with the assistance of an expert developer. Developing a satisfactory XSLT requires more time than one usually foresees and cannot, at times, be handled without external help. Every part of the edition must be checked so that it is consistent with every web browser and will always function in any foreseeable future circumstances.

A further point we wish to underline before concluding this analysis concerns the TEI Guidelines for the critical apparatus. We became aware of the difficulties of putting them into practice correctly when dealing with all the various instances offered by the *Odyssey* and its scholia. What we mainly wish to underline is that we now believe that this section of the TEI Guidelines, while providing us with a wide range of elements for different textual and linguistic phenomena, might require more specifications in order to deal with the most difficult cases in a more definite and precise manner. As it now stands, it works well enough for simple, straightforward cases, but for an extensive project requiring more detailed encoding, several, or at least more specific, elements are needed if scholars want to avoid tag abuse or using generic elements that can be employed in different and separate environments. The problems we have described emerged during the encoding of the scholia of the first one hundred and five lines of the *Odyssey*, occupying 72 of the 210 pages of the Pontani edition of the first book, and of the corresponding lines of the *Odyssey* in the van Thiel edition. One can only imagine that many more may arise, therefore, and the critical apparatus module might well face a never-ending scrutiny and analysis with continual requests for the development and addition of elements, involving a constant revision and perhaps simplification, particularly when the encoding is complete and a full awareness of all the various phenomena requiring encoding has developed. We must stress that some of the issues presented here arise from our encoding of texts of printed editions, but even if the project concerned a born-digital edition, there would still be problems, albeit of a different nature.

Chapter 5 Secondary Sources: Importance of Choice of Edition, Collecting Authors' Citations.

5.1 Introduction.

Our purpose here is to provide an example of the research that can stem from using the “Comprehensive Odyssey”. We describe which information can be obtained by analysing the secondary sources and how they can be treated as quotations. The “Comprehensive Odyssey” may achieve its maximum potential in the foreseeable future when it is possible to build a network of XML/XSLT/TEI editions and when the *Odyssey* text is entirely encoded.

One of the main characteristics of this digital project is its return to the very roots of Homer, in order to answer complex questions concerning his text. Using printed editions has offered the editor the chance to see in how many different ways we can edit a single text. With this digital project the indirect tradition will be better organised, leading to examining Homer across the centuries more thoroughly, through considering the variants in the secondary sources and understanding indirect quotations in ancient authors more completely. While producing this proof of concept we noticed cases where the editor will need to encode the same text twice under two different authors because one text quotes the other. This means that before choosing an edition for the “Comprehensive Odyssey”, we have to understand the characteristics of that particular author's edition, whether the editor used the text of one edition of the source or whether he himself produced a new one. This means discovering where the balance lies between two authors, not simply offering completely new editions to the community of classics scholars; it means reformulating some questions, adding new ones and refocusing on the concepts of text, author and works.

It might seem that this project has two aspects: on one hand, it is a digital project on the *Odyssey* of Homer, encoding its text and the critical apparatus of the van Thiel edition, and, on the other, it is a repository of the secondary sources and of the scholia. One question we should ask is whether these two aspects can remain parts of the same project or whether they do not rather pertain to two different spheres and should be separated. We recognise that we are describing both Homer and Homer read by others. On the one hand, there are the Homeric variants found in the secondary sources, while, on the other hand, there is Homer and how he was read and cited by different authors in different centuries. Nevertheless, it does not seem that they should be separate, as we

already mentioned in Chapter 1.2. The secondary sources are needed to provide all the variants extant in the tradition, direct and indirect as it might be. What will be described here is an example of studies that can stem from analysing the secondary sources and their Homeric variants. We shall see the difficulty of maintaining the two aspects separate because in order to understand the variants we have to understand the text in which they are to be found and, while studying this, attention will focus on the reception of Homer. We said in Chapter 1.2 that this secondary path could be separated, which is true. In a critical edition of Homer, the variants should be recorded and analysed only where necessary. Any further study should pertain to a second path, stemming from the critical edition but perhaps also disjointed from it. In our opinion, the secondary sources should be included in the “Comprehensive Odyssey”, but what we describe in the following paragraphs might, or might not, be part of it. We should stress that this may be pursued at a later stage and in a different project (see Appendices 1 and 2). Nevertheless, the secondary sources are in the indirect tradition of the Homeric poems and should be recorded in critical editions, as we saw in the La Roche edition of 1867-1868.

5.2 Secondary Sources as quotations of works.

Before describing four case studies, we should define the secondary sources in this project as fragments of works, as quotations of works where there is a line of the *Odyssey*. They can be treated as fragmentary authors and the “Comprehensive Odyssey” as a collection of fragmentary authors, in some cases, a compendium of lost authors, depending on whether we have a direct or indirect quotation for the author cited.

To understand this concept better, the notions of Berti in her work on fragmentary Greek historiography are central. Berti aims to employ digital texts of fragmentary corpora to create new editions that will include “more scholarly information, are far easier to maintain, and are much more usable” (Berti et al. 2009, p. 259). Editing fragments is similar to editing “hypertexts” (Berti et al. 2009, p. 259), works cited by other authors bearing an hypertextual nature. A digital project could express more clearly the links between quotation and source text, together with building a digital library without duplicating records.

Berti et al. stress that quotations should directly point to the sources from which they are extracted, without losing the possibility of being separately annotated and, also, without giving the idea that a text is repeated twice or more in a corpus of authors due to a quotation. They state five functions a digital edition of fragmentary authors should

possess: “Quotation as Machine Actionable Link, Alignment of Citation Schemes, Fragment as Search Query, Dynamic Collation, Secondary and Tertiary Sources” (Berti et al. 2009, p. 260). These refer to links to the source, to every digital edition of the source other than the one employed as source, to page images of editions not encoded and to “secondary and tertiary sources” (Berti et al. 2009, p. 260). As far as the latter is concerned, here is where the CTS architecture becomes important as the protocol with which to produce a repository of sources.

The TEI provide a detailed encoding of the logical aspect of the source, but Berti et al., referring to editions stemming from an OCR reproduction of printed editions, needed to encode certain physical features of the works/books. They state that physical qualities connect the correct text to a page image, so that it should not be manually typed and should help link conjectures from the critical apparatus to the referred text (Berti et al. 2009, p. 261).

We agree that encoding physical features will help link the text to the image of the document encoded. Nevertheless, we do not consider line numberings and divisions essential for the encoding of the critical apparatus. In the “Comprehensive Odyssey” (see Chapter 4.4.1), we used the Parallel segmentation method of the TEI, not connecting the apparatus to a text passage, but to the word/words it refers to, so we would not have to encode the aforementioned physical descriptions. We need to encode line divisions only for the *apparatus testimoniorum* of Pontani’s edition of scholia. In this proof of concept, we avoided referring to print as far as possible: we thought of encoding texts, not documents. Nevertheless, certain authors might have established printed editions, therefore, if we base a digital edition on a printed one, we should transform the references and concordances into a digital format. For example, if one particular edition is chosen, we should record the different listings of fragments in other editions together with an indication as to whether we are dealing with “a text fragment at least as *testimonium* or *fragmentum*, and to specify different kinds of fragments” (Berti et al. 2009, p. 261) with the beginning and ending of the fragments in various editions. These are handled with the CTS architecture. They interpret the fragments in different ways, first collecting material from different libraries, secondly “interpreting primary and secondary sources both synchronically and diachronically”, thirdly creating a “good practice for managing ancient sources” (Berti et al. 2009, p. 262).

In our project there are different kinds of witnesses, some are ‘lost authors’, while others are authors of whom one or more works remain. However, the way they are selected for the encoding, their fragmentary form, makes them similar to

fragmentary authors. Furthermore, the secondary sources are also witnesses of the quotations of the Homeric poems in later texts. We are dealing with “quotations and reuses of surviving sources” (Berti et al., 2014-15, p. 2). The goal should be to compare the original text and its reuses, encoding the reused portion of text, signalling other reuses of the text in other works. We refer to the abovementioned works produced for the *Leipzig Open Fragmentary Text Series* (LOFT), *Perseids* and the *DFHG*. Encoding the secondary sources for the “Comprehensive Odyssey” resembles publishing fragmentary sources: we should attribute greater importance to the data than to the interface because this might change while the data should remain as re-usable as possible.

Regarding the *Preseids* platform, Berti et al. (2014-15) would like to encode the texts together with links, annotations and commentaries using “semantically and structurally meaningful ways that adhere to well-accepted and documented standard formats” (Berti et al. 2014-15, p. 4). The identifiers should point to “lost authors and their works, authors and extant texts that preserve quotations and text reuses of the lost works, different editions and translations of the lost and extant texts, named entities (e.g., persons, places, and events) mentioned within the texts, commentaries and annotations on the texts, from ancient times through the present” (Berti et al. 2014-15, p. 4). This should occur by means of a TEI encoding with the CITE architecture and the CTS urn framework for the identifiers.

In chapter four we described the issues behind XML and the TEI and defined standoff markup. The editors of *Perseids* consider a division between the data and the encoding techniques for the text, deciding that the data added should stay in their own place which is different from the encoded text. This should function for the annotations, developed using the Open Annotation data model, which “enables us to serialize every annotation in its simplest form, as a link between one or more *target* items being annotated, and one or more *bodies* representing the contents of the annotation” (Berti et al. 2014-15, p. 7). The encoded data should be organised in various collections such as we can find in printed editions and they might be: “abstract lost text entities themselves, digital images of manuscripts of the extant source texts that quote those lost texts, commentaries on instances of text reuse, and linguistic annotations of the quoted text” (Berti et al. 2014-15, p. 9). Finally, we should document the origins and provenance of the data encoded and recorded in any digital project. They refer to information already available, becoming more accessible via digital analysis and they prove their role in modern scholarship, and, as data, receive additions through the TEI encoding. The

emphasis is on the data not on their representation because “the visual representation of the data is one type of reuse, and the data format selections have been made with the need to support disseminations for online presentation in mind” (Berti et al. 2014-15, p. 11).

In our project, we encoded printed editions, but they are the work of an editor, therefore, many of their characteristics are subjective and their value lies in the critical apparatus, again originating from the work of the editor. We could never avoid subjectivity, but the only places where an almost complete collection of sources and variants are to be found are repositories of collations and conjectures. Boschetti (2007) describes two ways of collecting all the information needed, the automatic parsing of all the apparatuses and pre-determined forms completed by a scholar. We need to use at least two editions, recording the sequential position of words in order to encode the exact positions of variants and additions/deletions in any of the two sources. Using an algorithm, we could then evaluate the similarities of strings and check the differences. In this proof of concept, the only way to understand the tradition would be to encode the critical apparatus of any source, using the *Perseids* platform and framework in order not to lose differences in the tradition and in other editions.

The case studies in this chapter are the quotation of the *Odyssey* in a number of lost authors, Antisthenes, Crates of Mallus, Chrysippus and Diogenianus. The example of Antisthenes will clarify the difficulties of dealing with the text of a lost author and how we should explain which text or work we are referring to, whether the lost author or the author who cited him. We shall see the importance of defining a beginning and an ending for a quotation and how different printed editions might otherwise act. If we start from the assumptions of Berti we have just described, all the secondary sources in the “Comprehensive Odyssey” are text reuses of Homer, while some of them are quotations of lost authors where Homer was reused.

5.3 Line 1, πολύτροπον and πολύκροτον⁹⁴.

The first case study concerns the very first word that refers to Odysseus in the *Odyssey* and its variant. As we have said, all the secondary sources were collected from various printed editions and with parsing of each line, entire or partial, in the *TLG*, in order to find variants. In the case of the first line, there are three questions to be posed: how long a quotation should be, how many secondary sources should be encoded and how consistency can be maintained when quoting works. To understand this, we will

⁹⁴For a detailed analysis together with bibliography, see Appendix 2.

discuss two passages, one from Plato's dialogue *Hippias Minor*, cited in the *apparatus testimoniorum* of the scholia, and the other from an Antisthenes fragment. In the first, the author does not cite the first line directly, only referring to it by employing the word 'πολύτροπον' connected with Odysseus. The second passage is in the *Quaestionum Homericarum ad Odysseam pertinentium reliquiae* by Porphyrius, and found in the Scholia, and reports the same criticism of Hippias' positions as expressed by Plato. The question is how to deal with this text, that is to say, whether we should treat it as a work of Porphyrius, a work of Antisthenes or part of an *Odyssey* scholium since the user/reader will read a different text each time, depending on the edition chosen.

Πολύτροπος is employed twice in the *Odyssey*, in the proem and in line 330 of Book X. This word helps define the character of Odysseus and links him to the god whose characteristic is being capable of lying and being deceitful, namely Hermes. Following Chantraine's etymological dictionary, the word, composed of the adjective πολύς and the noun τρόπος, means "aux milles tours, plutots que aux nombreux voyages... mais en *Odyssey* 1,1 il y a peut-être une ambiguïté voulue". We can say that πολύτροπος literally means that Odysseus is a man "of many journeys", but, metaphorically, it could mean a man "of many turns of mind". The variant πολύκροτος, ον means (Liddle-Scott-Jones): "ringing loud or clearly, ... sly, cunning, wily, v.l. in *Od.1.1...*". Alongside πολύτροπος, the word πολύκροτος is another compound of the adjective πολύς, here with the word κρότος signifying "rattling noise" which Chantraine's dictionary defines "coup qui résonne avec les mains, les pieds, des rames, coup sure des objets de cuivre, etc.". We should briefly state that the analysis of πολύτροπος covers two different subjects intersecting each other: the first is the proem to the *Odyssey* and the figure of Odysseus, together with the notion of the concealment of his identity, while the second is a comparison with the proem to the *Iliad* and with the character of Achilles.

If we look at the "Comprehensive *Odyssey*", we can find sources citing the beginning of the line but not the part where πολύτροπος is to be found. We should recall here that we encoded only sources that quoted the line directly, not just the word in connection with Odysseus. The sources quoting the second part of the line can be divided between extracts citing the first line while describing the meaning of πολύτροπος and extracts quoting the line to explain a grammatical pattern. In the first group we can find: Polybius' *Historiae*, also quoted by Constantinus VII Porphyrogenitus *Excerpta de sententiis*, one *Dissertatio* of Maximus Tyrius, Gregorius Pardus *De apto et solerti genere dicendi Methodus* (*Περὶ μεθόδου δεινότητος*), the

Etymologicum Magnum and Himerius *Man and the World*. In the second group there are: Maximus Planudes *Dialogus de verborum Constructione*, Pseudo Plutarch *Vita Homeri*, Alexander Rhetor *De Figuris*, the *Scholia Londiniensa* of Dionysii Thracis *Ars Grammatica*, the *Rhetorica Anonyma De Figuris*, Dionysius Halicarnassensis *De Compositione Verborum* and Aulus Gellius *Noctes Atticae*.

The “Comprehensive Odyssey” includes places where πολύκροτος is used in the accusative in lieu of ‘πολύτροπον’, in the first line. They are the *Commentarii at Homeri Odysseam* by Eustathius, the *Scholia Vetera in Nubes (Aristophanes)*, the *Suidae Lexicon* and Hesiodus *Fragmenta*.

Returning to the beginning of our analysis, we describe the *Hippias Minor* of Plato and the fragment of Antisthenes, looking at the questions we asked there. These texts are both speeches quoting Homer while reasoning on mythological figures and rhetorical speeches. The second was written by a Sophist, and one of the characters of the *Hippias Minor* is a Sophist. Both texts are an example of the relationship between Homer and the culture of orators and sophists. Furthermore, in both texts the figure of Odysseus is compared to that of Achilles, and they are both significant since they concern a change in how ancient writers perceived Odysseus. These two texts are central, shedding light on the debate as to whether these kind of sources should be encoded and how we should use the scholia as a secondary source. Regarding Antisthenes, we should ask how to deal with him, whether we should encode the text under the Scholia, under Porphyrius or under Antisthenes or under all three. We might say that both the *Hippias Minor* and Antisthenes can be seen as secondary sources, speaking almost directly about a verse, even if they quote only one word of it, analysing the subject of the verse. We could add these sources if we treated the “Comprehensive Odyssey” as a repository, as the work of a community whose communal decisions could surpass the Guidelines containing the project rules. Furthermore, we should stress that were we to employ the CTS architecture, we could add identifiers and connect the same text found in three different works. The questions are whether we should have one record or three records, since every edition is different, and whether we should encode the differences as annotations on a platform such as *Perseids*.

The *Hippias Minor* is a dialogue by Plato about truth and falsehood. Plato talked about those subjects when comparing Odysseus and Achilles. Despite being connected at the beginning only with Odysseus, πολύτροπος in the end is also used to refer to Achilles, in a philosophical discussion of Socrates. We should state here that in this dialogue Socrates defends Odysseus from the accusations of being a liar and false, not

to mention wily and shifty, and, thus, Plato might seem to describe Socrates as being himself polytropic (Lambert, 2002, p. 242; LévyStone, 2005). Another comparison between Odysseus and Socrates is found in two writings by Xenophon on Socrates, the *Banquet* and the *Memorabilia*. In the latter, the Homeric verses were used to explain the political and social opinions of Socrates (Gotteland, 2015). Homer is then used as a medium for describing Socrates and his ideas. Socrates “fait appel à la parole homérique, trésor de sagesse dans lequel le philosophe va puiser sans réserve”⁹⁵ (Gotteland, 2015, p. 189).

We now move on to the passage from Porphyrius citing Antisthenes’ opinion of Odysseus, found in the scholia to the first line of the *Odyssey*, already mentioned while discussing the encoding process (Chapter 4.4.1.4, section d), where we stressed the implications of not following page and line breaks of the chosen printed edition. Looking at the current situation of printed editions, we can state that we can encode the text using two different editions, Pontani’s edition of the scholia, followed by Pierce (2015) in her newly published edition of the fragments of Antisthenes, and the edition of Antisthenes published by Decleva-Caizzi (1966), where she followed the text published by Schrader (1890) in his edition of Porphyrius, without questioning its criteria.

Talking about the Pontani edition, in our encoding we did not follow the paragraph divisions or line numberings as they stand in the printed edition. There are two reasons for this: first, the critical apparatus was encoded using the Parallel Segmentation Method of the TEI Guidelines, which can only be used in-line, i.e. at the specific point where the variant is found (see Chapter 4.4.1.3). Second, the *apparatus testimoniorum* of the printed edition follows a paragraph, not a line, division. This proves difficult in this passage, where a sentence cites a line number, and it is important to understand Pontani’s view of the issue at stake. In this instance, the *apparatus testimoniorum* resembles a short commentary on the passage, and, therefore, line numbering is extremely important, and creates a particular problem for our digital project.

Here we are encoding a lost author, available to us only through different editions pertaining to different works. We have five or six critical editions either of Antisthenes or of Porphyrius, at times rendering different texts. In our analysis, we followed the work of Berti et al. of 2009, when they stated that we should employ an

⁹⁵“calls for the Homeric word, a hoard of wisdom, from which the philosopher will draw without reserve” (my translation).

ontology for representing fragments to “aligning multiple citation schemes of different editions of the same work” (Berti et al., 2009, p. 261).

While reading further bibliography to understand the relationship between the notions of Plato and Antisthenes, we became aware that in certain articles the texts were quoted unquestionably. Lévy (2005) cites this passage of Porphyrius as if it were indisputably a “texte de Porphyre qui résume l’argumentation d’Antisthène”⁹⁶ (2005, p. 195). Jouanno (2013) quotes the text of Antisthenes using the translation by Goulet-Cazé (1992), telling the reader that the text was transmitted by the *Odyssey* scholia. Her reference text is the 1855 Dindorf edition, without mentioning the new on-going edition by Pontani, which is very different from that of Dindorf. Luzzatto (1996, pp. 283-288) recognises the problem, stating that Antisthenes is difficult to separate from Porphyrius (see Winkelmann, 1842 and Mullach, 1867) and that we are reading a text published by someone who was not editing Antisthenes.

Current editions would have us believe that the Antisthenes’s text derives from a direct tradition, whereas it does not because the fragments of Antisthenes we read derive from “gli Aporemata omerici di Aristotele, quindi dagli Zetemata di Porfirio...”⁹⁷ (Luzzatto, 1996, p. 286), now part of the scholia, whose editors were not editing the philosopher and, therefore, their final aim was different⁹⁸. Rostagni (1922), Decleva-Caizzi (1966) and Giannantoni (1990), in his edition of the pre-Socratics, believe the whole text is from Antisthenes. The interventions of Schrader (1890), already describing the text as a quotation from Antisthenes in his edition of the *Quaestionum Homericarum* of Porphyrius, influenced the editions of Decleva-Caizzi (1966) and Patzer (1970), while Ludwich (1889-1890) avoided such corrections, producing a text free of interventions.

If we were to employ the CTS architecture and the *Perseids* platform for publishing Antisthenes, we should, first of all, provide a list of all the printed editions holding this text in chronological order and establish whether an editor employs the text of another edition:

- 1821 Buttman, *Odyssey Scholia*
- 1842 Winkelmann, *Antisthenis Fragmenta*
- 1855 Dindorf, *Odyssey Scholia*

⁹⁶“text of Porphyrius which summarizes Antisthenes’ discussion” (my translation)

⁹⁷“the Homeric Aporemata of Aristotele, then from the Zetemata of Porphyrius...” (My translation)

⁹⁸See Buttman’s edition of the *Odyssey Scholia* (1821) and Dindorf’s edition (1855), cited by Luzzatto (1996, p. 286 – 287), and the fact that they attribute the origin of the text to either a grammarian or Porphyrius.

- 1867 Mullach, *Fragmenta Philosophorum graecorum*
- 1890 Schrader, *Porphyrri Quaestionum Homericarum ad Odisseam pertinentium reliquiae*
- 1889-90 Ludwich, *Scholia in Homeri Odysseam A 1-309*
- 1892 Blass, *Orationes et fragmenta, adivinctis Gorgiae, Antisthenis, Alcidamantis, declamationibvs*
- 1966 Decleva-Caizzi, *Antisthenis Fragmenta*
- 1970 Patzer, *Antisthenes der Sokratiker*
- 1990 Giannantoni, *Socrates and Socraticorum reliquiae*
- 2007 Pontani, *Scholia*.
- 2015 Pierce, *Antisthenes of Athens, Texts, Translations, and Commentary*.

We have to understand the relationships between these editions, whether an editor employs the text of another one, as Decleva-Caizzi and Giannantoni do with Schrader, establishing connections. Each edition should have an identifier and either should be accessed on screen or their textual differences should be elucidated in the encoding. As Almas and Berti (2013) point out, the *Perseids* platform permits the visualisation of the source text in different editions allowing the highlighting of re-use, the lost author in this example. In the Perseus catalogue we found this urn for Porphyrius' *Quaestionum Homericarum ad Odisseam pertinentium reliquiae*, urn:cts:greekLit:tlg2034.tlg016, this for the Schrader edition, urn:cts:greekLit:tlg2034.tlg016.opp-grc1, this for the Fragments of Antisthenes, urn:cts:greekLit:tlg0591.tlg001, and this for the 1892 edition of Blass, urn:cts:greekLit:tlg0591.tlg001.opp-grc1. The urns identify the authority making the encoding, the author's name with the specific work, separated by a full stop. In our example, we need two groups, one for the urns of Porphyrius and one for the urns of Antisthenes. The urn ending will have an unambiguous identifier for each edition. One last thing to encode is the lost author, Antisthenes, in the editions of Porphyrius and in the scholia. Following Berti and the creation of a Perseus Collection of Lost Content Items (urn:cite:perseus:lci) for encoding Antisthenes inside Porphyrius and the scholia, we could have all the editions together with a commentary. In the "Comprehensive Odyssey" we have one edition for Porphyrius, one for Antisthenes and one for the scholia, but the identifiers should work similarly. We should provide both the edition of the source text and that of the lost author because their edited texts might differ. In the

Porphyrus encoding and in the scholia there should be an identifier for quotation; we should state that Porphyrius quotes Antisthenes and the first and last word of the quotation. We have described how the text of Antisthenes originates from the “Zetemata di Porfirio” and that this material is now part of the Scholia. There should be an urn telling readers/users that the scholia quote Porphyrius, and an identifier, adding the quotation of Antisthenes to the urn. The identifier for the scholia, from the Homer Multitext, is urn:cts:greekLit:tlg5026 and with the Pontani urn from the *TLG*, it becomes urn:cts:greekLit:tlg5026.tlg018. This should be one of the three basic urns. This is how Berti (2014-15, par. 2.1) expresses the idea that one author quotes another (in this case that Atheneus quotes Istros in the *Deipnosophistae*): urn:cite:perseus:loi.2.1 quotes urn:cts:greekLit:tlg0008.tlg001:3.74e#Ἰστρος-συκοφάνται. To be precise, Berti states: the edition of Istros quotes the passage in Atheneus, where Atheneus quotes Istros, so urn:cite:perseus:loi.2.1 (the Perseus Collection object representing the Istros edition) quotes urn:cts:greekLit:tlg0008.tlg001:3.74e#Ἰστρος-συκοφάνται, the exact place in the passage. Using Pontani’s *Odyssey* scholia as a starting point for citing the scholia, the Schrader edition for Porphyrius and the Decleva-Caizzi for Antisthenes, we have urn:cts:greekLit:tlg0591.tlg001 (Antisthenes) quotes urn:cts:greekLit:tlg2034.tlg016 (Porphyrius) quotes urn:cts:greekLit:tlg5026.tlg018:1.1e#οὐκ ἐπαινεῖν-ἀπόβλητον λόγον (Scholia). We need to be clear with the identifiers, stating whether we refer to a specific edition or to a work in general. We can follow two different paths, one encoding all these editions, and the other one encoding one edition with the relevant information from the other editions available as a commentary. The second solution seems to be more appropriate for the “Comprehensive Odyssey”, but the first approach should be followed for a digital edition of Porphyrius. Implementing the CTS architecture will make the relationships between authors and editions explicit, and textual searches in the “Comprehensive Odyssey” repository will provide more detailed, comprehensible results. The *Perseids* platform will help represent the quotations and the texts re-uses together, meaning that we could see the lost works within their “embedding context” (Berti and Almas, 2013, par. 2.1). In our example, we could see Antisthenes and all of his sources and witnesses, which means Porphyrius and all of his sources and witnesses.

In conclusion, in order to discover which secondary sources should be included, we need to parse a line in the *TLG* and read commentaries and critical apparatuses. We integrated every source found in a critical apparatus because the editor deemed it important to understand a variant, since one of the strongest points in this project is the

possibility to retrieve all the variants in the indirect tradition and in the scholia. Looking at *Hippias Minor*, how many secondary sources should be encoded which are not in critical apparatuses, but are in the *apparatus testimoniorum* of the scholia? We need to make a decision about where to stop and establish clear Guidelines, making it easier to arrive at a shared decision in case of a collaborative project. Nevertheless, subjectivity and personal judgement cannot be ignored in the decision-making process, even more so when we need to choose the edition of the source. By considering critical apparatuses, we shall find other links and have to make different decisions in every case. A platform such as *Perseids* will offer the chance to combine subjectivity with a collaborative effort, with the chance to add sources at a later stage, if necessary. The *apparatus testimoniorum* of the scholia pertains to the editing of the scholia, and if we encoded it applying CTS architecture for every source cited in it, adding a urn:cts, they could be identified for further textual searches or links to external editions.

Our project will award more importance to the text and to each author. While transcribing, we concentrate on every characteristic of the texts. We question every available edition because each one can shed a different light on a text and on its meaning. We could not do so for every case that might emerge from an entire *Odyssey* encoding, but this examination will provide a better understanding of the importance of the text, calling for the collaboration of experts on a specific author.

5.4 Apollonius Dyscolus.

This paragraph concentrates on Apollonius Dyscolus, a second-century grammarian, who considered Homer the author providing the paradigms for the grammatical rules and linguistic phenomena he wanted to explain. Considering the first 105 *Odyssey* lines of the “Comprehensive Odyssey”, we recognise that Apollonius cites Homer in many of his works, such as *De constructione*, *De pronomibus*, *De conjunctionibus* and *De adverbis*.

In the analysis of these *Odyssey* lines, we can evince that most of the Homeric passages found in Apollonius are in his *De Constructione*, v. 1, 2, 7, 8, 9, 10, 23, 24, 40, 69, 45, 81. Only three passages are in *De pronomibus*, v. 7, 45, 81, two in *De Conjunctionibus*, v. 2, 6 and one in *De Adverbis*, v. 40. Line 7, examined in 5.6, is cited in *De Constructione* and in *De Pronominibus*, in the first case when Apollonius reasons on an “Exception apparente: L’article qui precede le dérivé possessif ne va pas avec le

pronom”⁹⁹ (Lallot, 1997, p. 127). In his commentary (1997, v.2, p. 63), Lallot clarifies that a definite article could not have been in the first line of the *Odyssey*. It transgresses grammatical rules because a connection to a previous sentence cannot be established at the beginning of a work. It refers to the man of excellence, but this meaning is associated with the sense of only one man’s possession. In the second passage, the first *Odyssey* line and the second of the *Iliad* are connected because their syntactic structure has a noun in the accusative related to a relative pronoun. This pronoun is the subject of the following verb and is, therefore, in the nominative case: ἄνδρα... ὃς and μῆνιν... οὐλομένην, ἥ. Dorjahn (1930, pp. 282-284) stresses that Apollonius Dyscolus quotes Homer far more than any other author and the mistakes found in his works might suggest that he quotes Homer by heart, which is not impossible when one thinks that he held Homer to be ‘The Poet’.

5.4.1 Line 40, τίσις ἔσσεται Ἀτρεΐδαι and τίσις ἔρχεται Ἀτρεΐδαι in Apollonius Dyscolus.

An example of a variant, perhaps deriving from Apollonius Dyscolus possibly quoting by heart, can be found in line 40 in the first book of the *Odyssey*. If we look at the “Comprehensive Odyssey”, we can discover in Van Thiel’s apparatus a variant in manuscript D (Paris. 2403, s XIII) and, in another hand, in manuscript Y (Marcianus cl. IX num. 29, of Leontius Pilatus (died 1365)), with the word ἔρχεται instead of ἔσσεται. Allen cites only Apollonius’ work as the place where the variant can be found, with no manuscripts, as do La Roche (1867) and Ludwich (1889), while Stephanie West (1981) refers ἔρχεται to a whole category of variants, a *varia lectio antiqua* (*apud scholia nisi auctor nominatur*), as von der Muehll (1912) had previously done.

If we consult the secondary sources, we can see quotations of this line in Apollonius Dyscolus *De constructione*, *De Adverbiis*, Aristonicus *De signis Odysseae* and Eustathius *Commentarii ad Homeri Odysseam* and in the *Scholia Graeca in Homeri Iliadem* (*scholia vetera*). The variant is found in Apollonius Dyscolus *De Adverbis*, thus the same line is cited differently in two works by the same author.

In the passage from the *De constructione*, Apollonius explains a rule, namely that it is impossible to put a pronoun with an unmodified accent in a possessive sentence; only an enclitic one is permissible. Quoting a passage from Δ 343, he writes that the verb is constructed with the ellipsis of the preposition περί and, as an example of this, he mentions one line in the *Iliad* (B 356) and two in the *Odyssey*, α 40 and α 69.

⁹⁹“apparent exception: the article which precedes the derivative possessive cannot be used with the pronoun” (my translation).

The verb used here is the one found in the *Odyssey* text and is ἔσσεται, the 3rd person singular of the future indicative medium epic of εἰμί.

In the passage from the *De Adverbiis*, Apollonius describes the adverbial use of the dative case of the article, τῷ. He explains that it does not require a circumflex accent and a subscribed iota, but makes one half of a sentence change towards a causal meaning, yet it is difficult for us to understand whether the word is an adverb able to evoke cause or a conjunction with a causal meaning. For Apollonius, a speech becomes causal every time a causal preposition is used before a noun (modern linguists affirm the word τῷ is a different word from the pronoun). He then explains that a causal sentence cannot be expressed by the dative case, and it is also not very likely that it is a causal conjunction. We might say that poets quite frequently omit the preposition, as can be seen in several places in the *Iliad* and the *Odyssey*. Here, Apollonius has the line with the variant ἔρχεται. In Schneider's critical edition (1878), we see in the critical apparatus that this word is in manuscript A, first hand of the codicis Parisini 2584, and in Bekker's edition. This verb is the 3rd person singular of the present indicative middle-passive of ἔρχομαι¹⁰⁰.

Looking at the other secondary sources of this line, the *Scholia in Iliadem* cite the line as an example of the use of a patronymic, which is Νηλήϊος in *Iliad* Ψ 514, the grandfather of Antilocus. Similarly, in the *Odyssey*, we have Ἀτρεΐδαι, meaning Ἀγαμέμνωνος and not Ὀρέστου. Eustathius, in the *Commentarii ad Homeri Odysseam*, connects this passage to similar views in the *Iliad*, describing in detail how Homer deals with the genealogy and his use of patronymics.

Aristonicus' *De signis Odysseae* mentions a case similar to the one illustrated above concerning Porphyrius and Antisthenes in the *Quaestiones Homericae*. Carnouth (1869) edited the Aristonicus fragments, drawn from the *Odyssey* Scholia; therefore, in the "Comprehensive Odyssey" this extract is both in the secondary sources and in the scholia, quoting an *Odyssey* line directly. The two texts differ merely because the edition of the *De signis Odysseae* starts with the indication that in the text there was a διπλῆ, a symbol meaning, between other things, various lectures, rejected lines or, in dramatic poetry, a change of speaker. The editor also adds to the text the words ἡ διπλῆ ὅτι. The scholia do not carry the indication of the διπλῆ, but instead their critical apparatus includes some variants, not found in Carnouth's edition (1869). The explanation here is that Ἀτρεΐδαι is assigned to Agamemnon, not to Orestes.

¹⁰⁰The meaning of the line in the *Odyssey* changes slightly, from "vengeance will be from Orestes for the son of Atreus" to "vengeance comes, starts, and sets out from Orestes for the son of Atreus".

5.5 Crates of Mallus in line 24 ἤμεν δυσσομένου Ὑπερίονος ἡδ' ἀνιόντος.

In the first example, we described two secondary sources, Antisthenes and Porphyrius, available in the scholia, which in the secondary sources would be encoded under two authors with the same text. The same passage, but edited differently, is only found in the scholia because the text of Porphyrius accessible in the *Quaestiones Homericæ* derives from a passage in the scholia. By looking at line 24 in the first book of the *Odyssey*, we see an example of various secondary sources with only one feature in common, namely that they cite Crates of Mallus. Line 24 of the *Odyssey* is attested in many passages from Geographers, because it describes the geographical position of the Ethiopians¹⁰¹, as the people living farthest away in inhabited land.

Below is another example of indirect sources, involving the question of which secondary sources and which editions should be included. Taking as an example the Broggiato (2001) edition of the fragments of Crates, one of the passages she includes will not be found in the secondary sources of this “Comprehensive Odyssey”, another being in the “Comprehensive Odyssey”, but not under Crates. The passages quoting Crates in Broggiato’s edition (2001) are: Posidonius *Fragmenta* (this text is not quoted in the main text, but in a note in the critical apparatus under Strabo), Strabo *Geographica*, Geminus *Elementorum Astronomiae*, and Eustathius, *Commentarii ad Homeri Odysseam*. Of these texts, the only two mentioning Crates, using his exact words, are taken from Strabo, one of them giving a comprehensive description of the Περὶ ὠκεανοῦ of Posidonius¹⁰²; they are placed under Crates in our digital edition. In the “Comprehensive Odyssey”, of all the quotations from the *Crates Fragmenta*, that from Strabo and the other from Posidonius differ, because the chosen Strabo edition (2002-2011) is not the same as the one Broggiato (2001) chose. Furthermore, the editors of Posidonius (1988) (Kidd completed and published an edition initiated by Edelstein) published their own work, referring to existing publications of the works cited in their apparatus, also making their own choices, explaining them in the critical apparatus, which is a merit of their critical edition. We must state here that Broggiato (2001) affirmed that the scope of her edition was to “unify all the fragments of Crates of Mallus unambiguously transmitted ὁνομαστί” (1988, p. lxxviii)”. For this reason, the passage of Synesius *De insomniis* (1992) is not to be found in her edition because it

¹⁰¹ An overview of the descriptions of the Ethiopians in ancient literature can be found in MacLachlan, B., 1992. “Feasting with Ethiopians: Life on the Fringe”, in *Quaderni Urbinati di Cultura Classica*, New Series vol. 40 No. 1, Fabrizio Serra Editore, pp. 15-33.

¹⁰² A detailed analysis of the views of Crates, Strabo and Posidonius with bibliographic references can be found in Posidonius, 1988. *The Fragments*, eds. Edelstein-Kidd, vol.2 Commentary, Cambridge University Press, Cambridge-New York, pp. 216-275.

records Crates' variant, but not his name and, therefore, it is not located under Crates in the "Comprehensive Odyssey", either. Broggiato's text (2001) is based on selected editions, and she states in the critical apparatus where she was personally able to view the manuscripts, thus giving the edition the correct consistency. In the commentary, she tried to reconstruct the context of the fragments in ancient philology (2001, p. lxix).

In conclusion, the editors of Posidonius do not quote Crates in the text; we can read his name in the critical apparatus and in the text of the Strabo edition. Only one of the two texts from Strabo is found in the edition of the fragments of Crates. The one reporting Posidonius is only partly transmitted in the critical apparatus. Furthermore, Broggiato's edition (2001) conveys a passage from Eusthatius and his commentary on the *Odyssey* because it contains a reference to that of Strabo quoted entirely in the "Comprehensive Odyssey". The Geminus text does not quote Crates' variant directly but explains his point of view. It is not under Crates in the "Comprehensive Odyssey" because it has no direct citation connected to Crates' variant. The question is whether attention should be paid only to the analysis of lines and the collection of variants or whether, to understand this aspect even better, other works containing no direct quote should also be inserted. In order to understand the variants more clearly, we felt this project should also provide the critical apparatus for the secondary sources. Without it, for example, it would not be clear that, although the editors of Posidonius do not quote Crates' variant in the text explicitly, this is because they do not want to insert it directly into the text, not because they do not think that it is the variant of Crates the text is referring to. In Synesius, too, we can find the variant, but only the line, not the name of Crates, is mentioned and quoted with it. It is obvious, therefore, that the "Comprehensive Odyssey" is becoming a project requiring specific editorial interventions for many secondary sources, and we assume that experts on specific authors should do so to provide consistency to the editions selected for the secondary sources. If this is not the case, the decision to include in the secondary sources only those authors directly quoting a line of the *Odyssey* will be followed, even if this might result in omitting some important passages.

5.6 Homer's *Odyssey* α 7, 32-34 in Diogenianus, Chrysippus and Eusebius.

We shall describe in this paragraph a group of secondary sources which are another example of text re-reuse. The source text is Eusebius' *Praeparatio Evangelica*, and the two authors quoted are Diogenianus and Chrysippus. Chrysippus is cited in the

fragment of Diogenianus, who is the source of Eusebius, so we are dealing with two fragmentary authors. If the *Perseids* platform were employed, we could visualise together not only one witness but two. Furthermore, this is not only a case of re-use, it is also an interesting example of the second path of studies that can stem from the “Comprehensive Odyssey”, which we envisaged might or might not be part of the project, but will, nevertheless, be looked at while choosing which secondary sources to encode and which edition to choose for the repository. Here we shall briefly describe the source and the witnesses, while a more detailed account of their relationship will be put in an appendix to this dissertation. The common denominator of these sources is an analysis of the notion of fate and destiny and the role of men. To support their view, Diogenianus, Chrysippus and many other authors available in the “Comprehensive Odyssey” add the Homeric verses which take different meanings depending on the author. The source, Eusebius, reports the witnesses in the *Praeparatio Evangelica* 6.8, where he assembles sources to address the argument concerning fate and destiny. This adds an analysis of the Homeric verses and helps understand the importance of fate and free will in Stoic thought. These Homeric lines depict human responsibility and free will in contrast to the influence of gods on human life. This analysis is found at the beginning of the first book of the *Odyssey*, in the prologue, where Odysseus’ return is being discussed: his companions are compared to Aegisthus because of their foolishness in not following the commands of the gods. We should stress how Homer remained a focal point in the Greek speaking world, even when the political and social situation had changed from earlier times, along with the rise of Christian thought in that geographical area. To assess the different authors, we shall provide a little information about Eusebius, Chrysippus and Diogenianus.

Eusebius (260-339 A.D.) was a Christian scholar who lived mostly in Caesarea Maritima in Palestine and became bishop there in 314 during the rule of Emperor Constantine. Most of his work is connected to Caesarea, its library and school, run as an institution for studies for both Christians and pagans and for experimenting with new writing techniques, from the papyrus roll to the codex. Eusebius was an important figure in the development and creation of the book, in particular in making the page look different. He quoted many authors in his works, mainly in the apologetic ones, such as in the *Praeparatio Evangelica*, which was written in about 313 A.D. and narrates a history of Hebrews and Greeks in order to convince them of the superiority of the Scriptures. To achieve this, he employed a vast variety of sources so as to discuss while providing background material. His use of excerpts of various length makes it difficult

to understand which sources he adopted, whether first hand, excerpts or second hand. Whichever way of citing he employed, he preserved a number of authors that would otherwise have been lost to us. As far as Homer and Diogenianus are concerned, Eusebius is the source of all the quotations and fragments of Diogenianus. While he might have quoted the latter first hand, it is not certain whether he did so for Homer. Every young student studied Homer at that time, and it is, therefore, possible to find reminiscences together with lines in quotations from other authors.

To pass on to Diogenianus and Chrysippus, one can say, briefly, that Diogenianus was the Epicurean author who wrote in opposition to the Stoics, and, as was customary, precisely against Chrysippus. Diogenianus, inside a description of fate and destiny, portrays Homer as a poet, and hence not obliged to tell the truth. The *Praeparatio Evangelica* then provides a depiction of the use of Homeric lines when representing Chrysippus's depiction of the human actions in connection with destiny and fate, together with an example of his thoughts on cause. All these notions of fate, fatalism and cause were used by subsequent authors as a paradigm of the Stoic movement, as is the case of Diogenianus and Eusebius.

Using the urn:cts framework (Almas and Berti, 2013, par. 2.1) to give identifiers to the source and to the witnesses, we obtain the following structure: Diogenianus *Fragmenta*, urn:cts:greekLit:tlg1322.tlg001 quotes Chrysippus' *Fragmenta Logica et Physica*, urn:cts:greekLit:tlg1264.tlg001 quotes Eusebius' *Praeparatio Evangelica*, urn:cts:greekLit:tlg2018.tlg001:6.8e#Aξιων-μάρτυρι. This expresses the relationship between an edition of Diogenianus, which, following *Perseids*, is assumed to be an object of a CITE list of Lost Content Items, and a passage of Eusebius. As for the Scholia, Porphyrius and Antisthenes, the relationship is not only between one object and a passage, but between two objects and a passage, or between an object and a passage, Diogenianus and Chrysippus, after which this passage becomes an object and the passage is Eusebius. The current *Perseids* interface should afford visualisation of the source, Diogenianus, and of all the witnesses, with comments and notes, understanding the relationship between the texts, identifying the quoted passages and their context of origin, also making it possible to connect the same passage to images of various critical editions. The abovementioned connection will make explicit what in many cases can be understood depending on the structure of the printed edition, but mostly available in the

critical apparatus or in a comment, as we saw in the Eusebius edition by Édouard des Places, Belles Lettres, 1980, employed in the “Comprehensive Odyssey”¹⁰³.

5.6.1 Other authors who quote line 7 and lines 32-34.

In the “Comprehensive Odyssey” we can list and check all the other authors citing lines 7 and 32-34; they include not only grammarians and philosophers, but also lexicographers and commentators, not to mention a Latin author, namely Aulus Gellius, who indirectly cites Chrysippus.

As was previously mentioned, canonizing the Homeric text helped understand and create the grammar of the Greek language. We see this by looking at the secondary sources, which is why we find not only philosophers but also grammarians among them. This is a list of the sources for line 7 and 32-34:

Line 7:

Aristonicus *De signis Odysseae*, 1 B.C.-A.D. 1

Maximus Tyrius *Dissertationes*, A.D. 2

Hesychius *Lexicon*, A.D. 5/6

Porphyrus *Quaestionum Homericarum ad Odysseam pertinentium reliquiae*, A.D. 3

Diogenianus, Chrysippus, Eusebius *Praeparatio Evangelica*.

Line 32:

Diogenianus, Chrysippus, Eusebius *Praeparatio Evangelica*.

Heraclitus *Allegoriae*, A.D. 1?

Cyrillus *De adoratione et cultu in spiritu et veritate*, A.D. 4-5

(Pseudo) Plato *Alcibiades ii*, (5-4 B.C.)

Aulus Gellius *Noctes Atticae*, 113/130-169 A.D.

Scholia in Aristophanem *scholia in Pacem*

Stobaeus *Anthologium*, A.D. 5

Hierocles *Fragmenta ethica*, A.D. 2

Maximus Tyrius *Dissertationes*, A.D. 2

Line 33:

Maximus Tyrius *Dissertationes*, A.D. 2

Scholia in Homerum *scholia in Iliadem*.

Aristonicus *De signis Odysseae*, 1 B.C.-A.D. 1

Cyrillus *De adoratione et cultu in spiritu et veritate*, A.D. 4-5

¹⁰³For a more detailed analysis of Eusebius, Diogenianus and Chrysippus, together with bibliography, see Appendix 1.

Stobaeus *Anthologium*, A.D. 5

Scholia in Aristophanem *scholia in Pacem*.

Aulus Gellius *Noctes Atticae*, 113/130-169 A.D.

(Pseudo) Plato *Alcibiades ii*, (5-4 B.C.)

Chrysippus, Diogenianus, Eusebius *Praeparatio Evangelica*.

Line 34:

Porphyrus *Quaestionum Homericarum ad Iliadem pertinentium reliquiae*, A.D.

3

Stobaeus *Anthologium*, A.D. 5

Methodius *Symposium sive Convivium decem virginum*, A.D. 3-4

Heraclitus *De incredibilibus*, post 4 B.C.?

Apollonius *Lexicon Homericum*, A.D. 1-2

Aelius Herodianus *De Iliadis prosodia*. A.D. 2

Eustathius Thessalonicensis *Commentarii ad Homeri Odysseam*, A.D. 12

Eustathius Thessalonicensis *Commentarii ad Homeri Iliadem*, A.D. 12

Scholia Aristidem *Scholia in Aelium Aristidem*.

Hesychius *Lexicon*, A.D. 5/6

Aelius Herodianus *De Odysseae prosodia*, A.D. 2

Aristonicus *De signis Odysseae*, 1 B.C.-A.D. 1

Chrysippus, Diogenianus, Eusebius *Praeparatio Evangelica*.

Hierocles *Fragmenta ethica*, A.D. 2

Scholia in Homerum *Scholia in Iliadem*.

Aulus Gellius *Noctes Atticae*, A.D. 113/130-169

Cyrillus *De adoratione et cultu in spiritu et veritate*, A.D. 4-5

From this, we understand that the same authors cite lines with a similar meaning together or separately in different works. There are works by commentators, philosophers, lexicographers and Christian writers, mainly authors of the first centuries A.D. If every grammarian and lexicographer is eliminated, we see that most sources use these lines as examples within their discussion on fate and human destiny, either from a philosophical perspective or from a religious one, the latter particularly in Methodius and Cyrillus. There are some sources that, instead of revealing an interest in discussing destiny, focus on the expression ὑπὲρ μόρον, which can be read either as two words, meaning “fate” or “destiny”, or as one word, as an adverb. Attention must be paid to whether the word should be written as a preposition followed by a noun or as a

compound of the preposition and the noun. This word is found a second time in line 35, acting as the principal focus of the secondary sources for that line.

5.7 Conclusion.

We gave four examples, four case studies, of which most were philological and one philosophical, to understand the investigations that can be carried out when consulting the “Comprehensive Odyssey”, with an explanation of how the digital format could shape the relationship between lost authors and their sources. The notion behind this analysis is that the “Comprehensive Odyssey” will hold not only the *Odyssey* digital text, but also a repository of the secondary sources, enclosing a repository of variants and of the sources that provide them. We understand what working on the Homeric tradition means just by looking at the variants or at how subsequent authors employed and interpreted Homer. We have stated that although they are two different research paths, they might intersect, thanks to the way in which the “Comprehensive Odyssey” may well work. Throughout this dissertation, we have described a repository holding encodings of works of highly regarded printed editions under copyright or of public domain editions, with annotations of the most recent information taken from those under copyright. The *Odyssey* will always be at the heart of the edition, but in order to decide on the editions of the sources and subsequently on the variants they hold, which are important for the *Odyssey*, their history will definitely be briefly surveyed. If one considers adding identifiers, we open the door to further investigations, even into the works of a single author, recording all the sources behind a single author or behind a single work.

In the first example, we analysed the word πολύτροπος and the variant πολύκροτος, pointing out the difficulty in deciding which secondary sources, and which edition, for each of them to use and encode, along with any problem deriving from this choice. The second example concerning Apollonius Dyscolus entailed the possibility of citing all the Homeric occurrences in a single author and, thereby, the opportunity to understand how Homeric lines were used, whether there are inconsistencies and how they can be related to how many authors quoted from memory. The third example briefly described two Homeric lines quoted to give strength to a geographical description. Furthermore, it focuses once again on the issue of which secondary sources to encode. Here, attention is paid to the question of how many other authors one should cite under a specific author found only in indirect citations. The last example does not refer to any philological issue or variant but depicts the use of Homeric lines regarding a

philosophical question; it illustrates how even Christians continued to refer to Homer, albeit indirectly, and how his authority did not diminish throughout time.

Furthermore, we described how the secondary sources in the “Comprehensive Odyssey” are a selection of passages and should be dealt with as fragmentary authors, which not all of them are. We depicted how employing urn:cts could help understand the single passages and the connections between them. We showed how the relationship between sources should be made more specific in order to link together all the relevant sources and the witnesses, such as the Scholia, Porphyrius and Antisthenes. Providing single identifiers linked together defines more clearly the cases where there is the same text under different authors. Thus, the “Comprehensive Odyssey” could enhance what one finds in a critical printed edition together with a detailed analysis of Homeric variants.

Furthermore, we included an example that is not connected to the implementation of variants but to the history of the Homeric tradition and interpretation. This is only an example of what could be achieved by using the “Comprehensive Odyssey”. It adds to the discussion on how to encode fragmentary authors and how to express the connections among them. This study should not be made directly while working on the “Comprehensive Odyssey”, but it might stem from it, especially if it were produced considering the notion of a platform with the possibility of adding comments. We know that the information on Eusebius, Diogenianus and Chrysippus is not directly connected to Homer and his variants. It shows further studies on the Homeric tradition. We understand that studying other authors or lines in different authors might lead us further away from Homer so that it might seem we are no longer studying Homer, but other authors.

In the following chapter we shall discuss the future of the “Comprehensive Odyssey” and the possibility of employing crowdsourcing to help its completion, and whether the great plan described in these chapters is a feasible endeavour.

Chapter 6 Critical apparatus, Copyright and Crowdsourcing: Feasibility of the “Comprehensive Odyssey”.

6.1 Introduction.

The previous chapters described different stages in the analysis of the “Comprehensive Odyssey” proof of concept, starting with the history of the *Odyssey* tradition, continuing with a depiction of digital projects, an investigation into digital scholarly editing and editing in general, a chapter on the principles and the encoding and one on the secondary sources.

This chapter will outline some possible outcomes for this project, built on the assumptions of the former ones. We describe three important points: the critical apparatus, copyright and crowdsourcing. Since this is a proof of concept, it includes the notion of “critical” as it should be in digital critical editions; this, therefore, is one major points to be addressed at this stage. In chapter three we discussed copyright, and here there will be a final analysis, in connection with Robinson’s abovementioned project, “Textual Communities”. Last but not least, we shall tackle the notion of crowdsourcing, already mentioned when describing the *Suda on Line*. This phenomenon will now be depicted from a general standpoint and from the Humanities perspective, by examining how it can become part of the modern field of publication.

The critical apparatus is very evident and is what makes an edition a new endeavour, where the availability of the variants and of the history of the work allow future scholars the possibilities to restudy the text, making it their own. Copyright is a challenge for any digital project, and a digital critical edition/repository does not escape it. The latest work by Robinson questions how Creative Commons licences are employed and makes us look at how to tackle copyrighted material, exploiting it as far as is possible, as Dillen and Neyt have explained (2016). In conclusion, analysing crowdsourcing will help us to decide whether this proof of concept might have a future or whether it is an impossible dream that can never become reality due to the extent of its current outline. The “Comprehensive Odyssey” links together the critical apparatus, the written tradition of the poems and their oral transmission, which might be seen as now taking on the shape of a collaboration, as described in the first chapter. Collaboration can assume the form of crowdsourcing, but we ask whether if it will be possible to implement it in this project and whether this will be worthwhile.

Nevertheless, we should always realize that a digital edition will never make any research easier in the short run. As Régnier (2014, p. 267) declares: “To date...the digital medium makes operations more difficult for critical editions; [it] extends the duration of the projects; [it] is difficult to harness; and [it] spectacularly blows up the costs of production, diffusion, and IPR (intellectual property rights) protection costs...Can digital critical editions escape economy?”. The answer to the last question is “no”, because a digital project could never skip any of these stages and reduce the overall costs.

6.2 The Critical Apparatus.

We described the encoding of the critical apparatus in great detail¹⁰⁴. The critical apparatus is very important for understanding the work of a classics scholar; the editors of the TEI Guidelines deemed it so significant for the creation of an encoding standard that they dealt with it in a specific chapter, Chapter Twelve. One of the latest publications on digital critical editions, Apollon, Bélisle, Régnier, 2014, *Digital Critical Editions*, dedicates an entire chapter to the challenges of transferring a critical apparatus from the printed to the digital medium. They enquire into the public for whom critical editions are produced nowadays, how far the editor shares his viewpoint with the reader and how the digital medium influences the creation of critical editions (2014, pp. 85-86). An editor produces critical editions, yet s/he only creates the edition, s/he does not publish it. The editor follows established rules in a fixed framework with documented procedures, conventions and arrangements, in theory helping the reader to trace the editorial process forming the text. In practice, the reader should already have some knowledge of how a critical edition is formed in order to understand the edition s/he is consulting. Furthermore, every critical edition has an introduction where all the editorial choices are explained, for example abbreviations, the structure of the apparatus and the meaning of any signs perhaps used in the text. Contrary to the current situation with print, in the digital environment the editor could, if s/he so wishes, also be the publisher of the digital edition. Apollon and Bélisle (2014, p. 93) fear that modern editors will have to “find the means to undertake a more complex research enterprise while producing modular presentation adapted to various publics”. Apollon and Bélisle (2014, p. 94) not only think of permitting access to some material but also of how to transfer to the digital medium the characteristics that positively form a printed critical edition, such as “introductory materials, glossaries, annotations and apparatus”. They (2014, p. 95)

¹⁰⁴ Chapter 4 section 4.4.1.3/4

reflect on publications containing not only the text but also the “whole literary and cultural production of the humanities, adding, when possible, information allowing non-scholars to reconstitute texts and to gain access to information needed in order to analyse the meaning of a text or document”. This leads to questioning the relationship between the editor and the reader in a medium where it is felt that the latter can freely browse through the material that the editor has spent several years collecting and analysing. The critical apparatus is defined as a tool that legitimizes the authority of the editor and gives enough information for the reader to check the former’s work, and may have a “selection of sources...collation of variants...notes and comments” (Apollon and Bélisle, 2014, pp. 103-104). Apollon and Bélisle underline that the digital medium affords more choices during selection, allowing for a more exhaustive data collection, perhaps even leading to consider variants that would have been discarded in a printed edition. The notes and comments document “the genesis, context, and historical kinship of a text...splitting the critical apparatus into several layers” (Apollon and Bélisle, 2014, p. 104). They (2014, p. 104) rightly describe an online critical edition as not giving the same visualisation, but “diverse perspectives and ‘views’”. They describe such views, however, returning somewhat to the printed book, when talking about “parallel reading...synchronised facsimile, diplomatic and normalized views, or local interaction using pop-up windows” (Apollon and Bélisle, 2014, p. 104). Apart from pop-up windows, pertaining only to the digital medium, the other above-mentioned views are already a characteristic of certain printed editions, for example the papyri and manuscripts editions, although they can be handled only one at a time in print. Parallel readings exist as way of showing different versions of the same work, conjoining rewritings of the author, as, for example, in the 1998 Peruzzi critical edition of Leopardi’s *“Canti”*. In this edition, the editor presents on every page a number of lines in the last version written by Leopardi and below this, the same lines in all the various drafts available, following the autographs and prints in chronological order (see *How to Use the Edition*, pp. 9-14).

The question we might ask is what the role of the critical apparatus in a digital edition will be, or, even better, whether we can talk about critical apparatus in a traditional way. This becomes evident in the “Comprehensive Odyssey” wherever a critical apparatus has been encoded. The critical apparatus, like every other aspect of a digital edition, helps focus attention on the text, concentrating on variants and witnesses, sometimes providing references to other works both as secondary sources and as examples in order to understand a variant. In this way, the critical apparatus leads

towards a circumstantial analysis of the digitized text. Every aspect of a text needs to be understood as it may be important for the encoding. For example, in using the parallel segmentation method for the critical apparatus, it should be clear what every single variant refers to since a variant is connected to a specific lemma (either one word or a phrase). The main reason for this is that the computer needs to be told everything that the user/reader of a printed edition knows either from experience or from having read the introduction. This occurs both when the digital edition digitally reproduces a printed edition and when it is an edition born digital. The main challenge is how to visualise the new information and the relationships between these new materials. A printed edition always has the text in the centre, and the critical apparatus is printed in various layers at the bottom of the page or at the end of the book. Regarding this, Apollon and Bélisle (2014, p. 111) talk about “new possibilities for concretizing the relationships between the critical apparatus and the work”, suggesting clear reasons for the disappearance of the boundaries of the printed page, leaving room for the display, which is not an unrestricted area and which presents its own challenges. They (2014, p. 111) are right to state that “new cognitive problems” will appear, without emphasising that the traditional apparatus will disappear for “user-selected visualisations” with a “switching between various points of view on the text”. The issue at stake concerns visualisation: in the digital medium the way we can see the critical apparatus on screen will change. The traditional apparatus will remain as a concept and will still be the place where the editor’s endeavours are wholly expressed and explained. The editor will decide whether to provide user-selected visualisations or not, and, if so, how. For example, Mastronarde’s edition of Euripides¹⁰⁵ scholia does not provide user-selected visualisations, only views pre-determined by the editor, with no chance for the user/reader to become involved in any change. However, if an editor is supportive of user/selected visualisations, a major hindrance is that what can be seen simultaneously on screen is not unlimited and, therefore, we might see different visualisations aligned together, but not an indefinite number of them. A web page has no limits in length, but the screen surface has, which is why scrolling exists; the visual comparison of different visualisations is limited to the amount that the screen can handle. In the “Comprehensive Odyssey” the critical apparatus was encoded wherever there was a variant, adding in the visualisation file a small Java script allowing the user/reader to view the variants without moving from the page. In this case, there is a user-selected visualisation, permitting a view of the variant in the limited space of the page. Even if

¹⁰⁵ See chapter 2.9

user-selected, it is still a visualisation where the user cannot change very much since it is still pre-set by the editor. Visualisation is produced with XSLT and CSS, and every user/reader will be able to download the source files and, by changing the XSLT file, decide what to see on screen.

We have spoken in this section about how important the critical apparatus is and how it may change when migrating to the digital medium. At the same time, the “Comprehensive Odyssey” shows the encoding of the apparatus of a printed critical edition, meaning encoding a text under copyright. This problem exists both for the scholia and for the *Odyssey* text.

6.3 Copyright and Creative Commons Licenses.

In chapter 3.8 we discussed copyright from the perspective of facsimile reproduction, intellectual property and utilizing printed editions in a digital project. We examined the recognition of pre-existing copyright and of the credit given to an editor in a digital project. We furthermore analysed how the “Comprehensive Odyssey” could be shaped by the actual limitations imposed by respecting copyright and how the platforms built under the Open Data Projects in Leipzig might help overcome those difficulties, together with applying Creative Common licences. Here we shall look at a negative aspect of such licences and at how copyright might shape, but not block, a project.

Robinson (2013)¹⁰⁶ considers using a Creative Commons Share-Alike license as one of the five landmarks that should shape a digital edition: encoding work and documents, attributing all the editors’ actions, not being attached to a specific interface and using a reliable storage system as an institutional repository. It seems as if Robinson were implicitly criticising the employment of the Creative Commons Non-Commercial as standard licence. He believes it poses too many restrictions, hindering the exploitation of the data of a project, even in a non-profit environment; it would resemble “locking up a project and throwing away the key” (Robinson, 2013). He suggests shifting towards the Creative Commons Share-Alike licence, which enables one to “copy and redistribute the material in any medium or format” and to “remix, transform, and build upon the material for any purpose, even commercially” (Creative Commons, 2015).

His notion is to set a project free, while simultaneously being able to check that there is no “large-scale exploitation” (Robinson, 2013), in order to promote knowledge

¹⁰⁶ <http://www.slideshare.net/PeterRobinson10/peter-robinson-24420126>.

through distributing a work, providing a common ground for contribution, without considering copyright the only way to further creation (Dusollier, 2003, p. 288). As Dillen and Neyt (2016) argue, we should always remember these aims, but they are not always achievable. The main issue seems to be the licence, since the editor of a digital project might be unable to exploit copy-left in its entirety because of copyright. The problem lies in the material the editor would like to include, when he/she might not obtain the licence for its employment. Robinson believes we should only publish digital projects whose material we can obtain control of. As we saw in the chapter on digital projects, we should not dismiss the possibility of employing raw data. They might be useful even by being available only through browsing, indexing and comparison. Sometimes an editor can access the material, but not redistribute it, and the restrictions might differ from country to country, depending on different copyright laws. We agree with Dillen and Nayt who stress that “the editor’s first concern will be to distribute her edition to as many people as her source materials will allow” (2016, p.6). With no copyright restrictions, the material should be published and shared, using “as public a licence as possible” (Dillen and Nayt, 2016, p.6). Should it be impossible to publish it, the editor should not abandon the project, but provide as much academic material as possible. We are considering metadata, what Dillen and Nayt call “ancillary data”, a detailed description of the project resources and of how the editor reached his conclusions.

In a digital project, for example, reporting how the project works, including from a technical perspective, is greatly valued. We are talking about producing TEI and ODD documentations, describing how the project works and how we achieved the results. As an example, we might recall the *DFHG* Guidelines, which permit learning the foundations of the project and helping future contributors, and the Digital Mitford Coding Guidelines¹⁰⁷, describing the encoding practices for the digital edition of the works and letters of Mary Russell Mitford (1787-1855). Dillen and Nayt evoke the Encoding Manual¹⁰⁸ of the *Beckett Digital Manuscripts Project (BDMP)*, published as an upgradable web site. The user knows from the outset that it is published primarily as a resource for collaborators. It mainly provides information on XML and TEI, before adding pages on the specific project, Header, text, special features with examples, sample text and validation information. Thus, editors share as much data as possible, so that any user can be aware of which characteristics the editors considered relevant for

¹⁰⁷ <https://docs.google.com/document/d/1r-8NGPJL1pZ20pnfvoX5OT0DkcDi-NBp5urJiZwx1sY/pub>.

¹⁰⁸ <http://uahost.uantwerpen.be/bdmp/>.

the goals of their project. Returning to copyright, another way of sharing copyright material is fair use (see Chapter 3.8.1), employing material under copyright for non-commercial or educational purposes, but it is subject to interpretations regarding the transformation, factual or creative nature, qualitative and quantitative importance and change in the value of the original work (Shaeffer, 2009, pp. 368-369). We need to transform the material so that it can be re-used, within the difficult boundaries of fair use. We can cite the project of Dillen and Nayt, the *Lexicon of Scholarly Editing*, where they provide copyright material, but transformed into citations and quotations, a process they call fair use:

“materials are used for research purposes; (2) ...only uses those fragments that are strictly relevant for its argument... (3) ...consistently attributed to their rightful authors according to the relevant accepted citation practices; (4) the use...only furthers the original nature and aim of the copyrighted material... and (5) all of the above is published in a transparent, non-commercial environment” (Dillen and Nayt, 2016, p. 9).

We must stress that there is still ample room for research even without trespassing beyond the limits of copyright. This essential starting point might apply to the “Comprehensive Odyssey” as well. From a theoretical approach, there are no hindrances to developing this proof of concept, and the real question is whether we could implement it from the point of view of the amount of material envisaged as being part of it in the first place. If we consider the abovementioned notions of Open Data, alongside the work on collaboration of *Perseids*, we should look at how, and whether, we could apply those models to the “Comprehensive Odyssey” and whether it would be worthwhile doing so. Developing general infrastructures not built for a single project will, eventually, enforce the notion expressed by Robinson that there should be not only one project, but many, with several scholars and people working on the data provided, “exploring it different ways” (Robinson, slide 20, 2013).

6.4 Crowdsourcing.

6.4.1 Crowdsourcing: general notion.

As we have said, digital projects often aggregate a huge amount of material from different sources, whether under copyright or not, and this might shape, up to a certain point, their content and grade of availability and openness. Nevertheless, this is not the only reason why a project might not become feasible. There is also the problem of how

to manage the analysis and encoding of the material envisaged in the previous chapters as part of the “Comprehensive Odyssey”: the *Odyssey*, the Scholia and the secondary sources, i.e. how to deal with the way research will be shaped once we have made a decision about its contents.

Furthermore, time is another essential factor in digital critical editions and might affect their feasibility, as well. As far as the “Comprehensive Odyssey” is concerned, we can make an approximate calculation: it took almost two months to create a list of the sources for 105 lines of the first book and to collect them in the library. The *Odyssey* has 12,110 lines. We can, therefore, estimate we might spend between 15 to 20 years to complete the entire poem. The same might be said of the *Homer Multitext*. At present, the following six manuscripts are being edited: Venetus A, Venetus B, Marciana 841, Escorial Y.1.1, Escorial Ω.1.12, Genavensis 44. The *Chicago Homer* and *Eumaios* web sites have not been updated for several years, and the latest version of the application *WordHoard* was built in 2011, with a copyright extending from 2004 to 2013. Mastronarde published his Euripides scholia in 2010, and the first progress update was April, 2014, with a further update in September, 2014. Mastronarde points out: “Because of many other projects and commitments, it has been impossible during the past four years to put online a larger sample of scholia with additional features. Visible progress should become much more rapid from 2015 onward. Nevertheless, the work has continued in the background”. This statement clearly defines the future of a digital project when it is not a scholar’s sole commitment. Over such a long period, the infrastructure of a project, its platform or its repository risk changing or becoming obsolete, which is why it is absolutely essential to encode the files in XML/TEI to preserve and re-use them relatively easily.

Examining past projects and at various theoretical publications on digital editing, it seemed that one of the main notions behind digital projects is collaboration, be it among peers or among editors and the general public. Here we shall describe the form collaboration might take, mainly through analysing what is called crowdsourcing, starting from a general description of its meaning and origin to proceed towards a more specific analysis of its content in the humanities.

What is crowdsourcing and how does it connect people in order to contribute to achieving a specific goal?

“Crowdsourcing is a story of cooperation, aggregation, teamwork, consensus, and creativity. It is a new arrangement for doing work, but it also is a phenomenon where, when the conditions are right,

groups of people can outperform individual experts, outsiders can bring fresh insights to internal problems, and geographically dispersed people can work together to produce policies and designs that are agreeable to most” (Brabham, 2013).

A project is a crowdsourcing project if the following points are found: a group performing a task, a number of contributors willing to help voluntarily, an online platform for accepting the activities and for the community to interact, both among themselves and with the organisers, and, last but not least, a “mutual benefit” for both the organisers and the external users. The control of the stages of a project is not univocal, nor does it lie only with the editors, as in a printed critical edition, but it is shared among editors and contributors, making it something midway between what Brabham describes as top-down and bottom-up managements (2013, p. 4). Crowdsourcing is a technical and conceptual notion, lying in the Internet and in the cooperative culture that can arise from it, which can be called collective intelligence (Brabham, 2013, p. 11). We break away from the notion of the internet as an anonymous medium liberating the user from the need for identity with its restrictions. For digital editions, or repositories, we need identifiable users, and should not restrict them but provide them with a recognition of their efforts and understand who it is that is contributing with his/her background. It is true, however, that internet can permit a participatory culture and thereby a kind of collaborative problem-solving, becoming a synonym for innovation. As explained in Chapter One, this innovation can be related to the distant past of oral culture, oral transmission, oral composition in performance, closing a circle going from the past to the present and backwards. Because of diverse needs and backgrounds, each user gives something different back to the organisers, the editors of an edition, providing a different outlook on questions that have already been considered, perhaps supplying new solutions. Crowdsourcing relies on the importance of the crowd and on recognising that the crowd may be part of what we might describe as “collective intelligence” and “wisdom of the crowd” (Brabham, 2013, p. 22-23). Here, in the right conditions, the result of collaboration might produce solutions that are an important addition to the work of experts in the field. Crowdsourcing is a never-ending exchange and peer-reviewed control, with a clear task ahead for the participants, so that they do not lose the main thread. One of its most important qualities, even for a project grounded in the humanities, is that it is helpful in appointing “micro tasks” transversely to many people in different places and times. Opinion is not unanimous, but we can repeat here how Brabham divides crowdsourcing, looking at the problems it might be employed in: “knowledge-discovery and-management approach, the

broadcast-search approach, the peer-vetted creative-production approach, and the distributed-human-intelligence tasking approach” (Brabahn, 2013, p. 44). Furthermore, we must state that crowdsourcing is thought of differently, considering the various disciplines in which it is employed, but any discipline will look at its economic aspect and at its possible benefits, from the reduction of costs and eventually gaining revenue to the different ways employed for recruiting volunteers.

From this discussion it might seem that there are no hindrances to developing crowdsourcing, but certain questions must be considered: finding a crowd, the quality of the crowd, legal issues (free speech, intellectual property, copyright), unfair business practices, ethical issues and labour rights (Brabahn, 2013, Chapter 3). The most important question in our discussion on the feasibility of a digital humanities project is that concerning intellectual property and copyright because we talk about a shared endeavour, where the editors might have the general control, but contributors produce their own knowledge, however great or small it might be. We already mentioned in Chapter 3.8 the importance of recognising collaborators’ work, especially in the humanities, where it seems more difficult to renounce control over the product of intellectual work. In a case such as this, we need definite and clear rules protecting both the editors and the contributors. We need to recognise that there is no longer any exclusiveness for either party, particularly if Creative Commons licences are employed for handling the material and sources of a digital edition. Rules governing a digital publication are also needed to check that the material the contributors submit does not incur any kind of copyright violation. Brabahn (2013, p. 88) recognises that every project involving the participation of a crowd will achieve its maximum potential when the community is satisfied with how it is run, because, if a large number of participants cease to contribute, it will fall into disrepair and abandonment. There is the notion that every stage in a crowdsourcing project is handled with democratisation in mind, so that every user feels as if s/he is accomplishing something that lies in a new future, which before this moment existed in different ways or never existed previously. Brabahn (2013, p. 91) means that the contributors believe that they control what they produce and submit to a project. In his opinion, contributors, or, as he calls them in this description of a “for profit crowdsourcing application”, “amateur labourers” (2013, p. 91), have the impression that they have more authority over the final artefact. He stresses that democratisation is only a façade, since, in the end, the final product of this crowdsourcing will still be assembled under a logic of profit and capitalism.

Will the organisations and the participants gain in the end, or will the project's fate be that of an unfulfilled dream? In a digital humanities setting, it relies on the achievements of a community in a definite time, racing against a timetable established by the editors. We might stress that the “interplay between crowd and organisation is crucial for crowdsourcing because it ensures a mutually beneficial outcome that probably could not have existed without the co-creative efforts of both parties” (Brabahn, 2013, p. 29).

In conclusion, crowdsourcing is closely connected with the digital medium and it will be implemented on more and more digital platforms and by many vendors; it is hence likely to become a business service (Brabahn, 2013, p. 100). This means, if we refer to crowdsourcing from a monetary point of view, that “crowdsourcing platforms will come to be seen by organisations as run-of-the-mill third-party vendors, not much different from copying and printing vendors, shipping and logistics vendors, or management consultants” (Brabahn, 2013, p. 100).

The same is true of humanities communities, never forgetting that a community might be vast and diverse and that research always proceeds towards a better understanding of the type of users and their motivations, with the goal of building more apt platforms, together with sound ethics.

6.4.2 Crowdsourcing and the Humanities.

To relate now this new model of publication with the humanities, we need to clarify what the notion of a shift in paradigm involves for publication. At present we look at what might be called an entire reorganisation of all our cultural heritage within the new paradigm of digital practices, reformulating everything that has been regarded as a habit over the last centuries. When digitising, we re-materialise the sources, transforming them into something that is not fixed and never-changing but into a modifiable product. As we already pointed out in Chapter One, this process is no longer completely hierarchical, but more “horizontal and fluid” (Dávidházi, 2014, p. 13). The notion of producing a finished, perfect product changes, as we now face collective, never ending, ever-changeable and ameliorable publications. Nevertheless, digital information does not cease to have a physical nature and also a clearly defined set of guidelines. The process of mediation is something achieved through the encoding, which provides a way of keeping everything that the author wrote (WYKIWW, what you keep is what the author wrote, Dubucs, 2014, p. 29). The distinction between authors and readers becomes less evident because readers increasingly become

commentators, freely expressing their opinions and, thus, they are seen to be authors, as well. The “Comprehensive Odyssey” deals with an oral work, composed during an oral performance and with the transmission of this artefact via a written tradition of direct and indirect sources. It is a transformation from a spoken relationship between authors and listeners to a more silent, private relationship. The sources are the material traces of oral discussions and of the private thoughts of later authors. With the notion of openness, collaboration and shared written commentaries, we try to reformulate the exchange that occurred when listening or, more accurately, during the recital process. We now possess only a written result, a transmission starting from the “transcription” of such oral relationships/recitals, and we must encode as many data from every branch of the tradition as possible, in order to record and preserve them for any future study.

It seems that as new books are published, the issues hindering the embracing of digital publications never change. Gersmann (2014, pp. 37 – 46) enumerates peer review/impact factor, the relationship between publishers and authors and the need for active commitment in digital publications. Questions are still being asked about their standards, availability and openness, and Gersmann believes that we are still far from what he calls “networked Humanities” (Gersmann, 2014, p. 40). He goes as far as to say that, despite our being still firmly attached to the printed ways, collaboration will become a foundation of future publications, because, in his opinion,

“the judgement of experts has now been joined – indeed, if not replaced – by a democratic process of opinion forming that will gradually claim ever more space and put its stamp on mutual communication” and “the hierarchically structured ‘vertical communication’ of the past will be replaced by a ‘horizontal, fluid communication,’ in which academic laymen and experts stand side by side on an equal footing” (Gersmann, 2014, p. 46).

Critical editors in the digital medium are assisted in editing manuscripts and in producing shared commentaries. Bozzi (2014, pp. 99 – 115) describes exhaustively a collaborative system for digitally editing manuscript sources, considering the needs of ancient and medieval studies. Such a project should be provided with shared standards, a modular architecture and should be searched through the web. Bozzi (2014, p. 101) envisages these criteria for his “system for digital philology”:

“linear transcription of a single source;
positive apparatus for recording the variants of the collated sources;

- specific area of the apparatus for storing the readings selected or proposed by the critical editor;
- automatic generation of the *textus constitutus*;
- automatic generation of the text of all the other reviewed and collated sources;
- computer-assisted assessment of the variants and man-machine user interface to hypothesize stemmata resulting from the apparatus data”.

The information recorded pertains to extra textual and para textual levels of data encoded using TEI. We should encode everything, depending on the needs of the user, and publish everything through the platform for visualisation, regardless of its being encoded or not.

Bozzi underlines his development of a system that should further the creation of collaborative projects between users. In his, still fictional, example, the same project has two aspects, a textual one with primary sources and one with further analyses, such as commentaries and annotations. The latter needs to be associated with an id. to the passages in the former, and, furthermore, the publication should not be automatic, but approved by a committee of validators, such as in the *Suda On Line* (see Chapter 2.5), who decide on a public or restricted publication (Bozzi, 2014, p. 105). The author seems sceptical about the success of this idea, mainly because, despite there always being an exchange while producing an edition, “the phases of interpretation of the text and evaluation of errors and variants are strictly connected with the knowledge and sensitivity of the single editor” (Bozzi, 2014, p. 105). The principles Bozzi follows are: encoding a source text available through digital images, considering ecdotic reasons for choosing the reference text and comparing it with the tradition, recording all the variants and typos, encoding marginal notes as para textual information linked to the text and linking the words in the text with the words in the image. He believes this tool will be very useful for adding stylistic and philological annotations to a text and for indexing them, making them accessible for further studies. Furthermore, he produces a design specific for the critical apparatus, divided into three stages, “typology and variants weight...a man-machine interaction system aimed at showing all the possible relationships between the codes, according to the apparatus information...the *stemma codicum* construction” (Bozzi, 2014, pp. 109 – 110). Bozzi does not forget the importance of the users’ evaluation of the solutions resulting from the machine operation, which are the final decisions that will appear in the output.

6.4.3 Crowdsourcing in Classics.

We have just described how an editor of a critical edition envisages a project in a digital environment. In the following paragraphs, we shall depict how crowdsourcing can be connected to the Classics, together with the notion of Open Education. Those two aspects are linked, as we can see by looking at the *Perseids* platform. At the same time, while studying the language, students, who become users, work on a project, producing valuable results. Up to a point, digital scholarly editing becomes a means for contributing together while learning XML/TEI and other digital competences, even for students. We agree with Bodard and Romanello (2016) when they stress that, whatever project we work on, the notion that should characterise all of them is openness, in the way of Open Access, Open Data, Open Standards, Open Licencing and Open Source Software. In their book *Digital Classics outside the Echo-Chamber* (2016), they collect studies on Digital Classics, dividing them into Teaching, Knowledge Exchange and Public Engagement. The core of their collection is learning and collaboration and how to benefit from this new situation where studying and producing new knowledge can be performed in a more flexible manner. Here we have been dealing with digital publications in the humanities and how collaboration will play a significant role in their diffusion. Before going back to crowdsourcing and the *Perseids* platform, we shall describe briefly what learning in a collaborative environment means.

We might divide learning into two categories, learning XML/TEI encoding through digital resources, both via classroom teaching and a single self-centred approach, and learning classical languages and disciplines, such as Epigraphy and Papyrology employing the digital medium, where encoding might or might not be involved. There are university courses where students can learn the TEI as if in a class facing a teacher, and there are projects where markup could be learned while producing digital content. We should add that learning Classics is not only connected to projects but also to the simple learning of Ancient Languages, whether at university or in secondary schools. We should stress that we can already find resources available through Open Access, therefore, free to be used and distributed. By reading Mahoney (2016, pp. 34 – 50), one can comprehend that Open Resources for education are still difficult to find and the problem is what we have discussed in many places in this dissertation, that is to say, the reluctance of providing personal material at no cost for fear of losing it and of not being recognized as the authors. Mahoney rightly stresses: “Combining resources freely, strengthens rather than weakens the subject” (Mahoney, 2016, p. 37). To let this happen, open resources should be made available using the

lowest standards available, with the right metadata attached for easier search and with a clear license for its distribution and re-use.

In conclusion, we must suggest two other examples concerning learning ancient languages using digital resources: *The Open Tutorial for Beginning Ancient Greek* and the *Ancient Greek Dependency Treebank*. The first consists in eighty-four HTML pages based on John William White's *First Greek Book*. It is free and distributed under a Creative Commons Non-Commercial-By Attribution-Share Alike license. Its most favourable aspect is that it allows for a production of material that cannot be achieved outside an online environment. The second is “a digital corpus of Greek literary texts that include a word-by-word morphological and syntactic annotation” (Mambrini, 2016, p. 83). A treebank is a way of learning by doing, letting students learn not only the grammar but also ancient civilization, by questioning the meanings and interpretations of every passage. Building a treebank means performing a full morphological analysis, together with understanding the context and the variations in meaning that any possible reconstruction of a sentence carries. This will help students understand the various connotations that a word might have and how we can choose among them. All the recorded interpretations might already be available in the reconstructions obtainable from previous studies, which should be extensively searched while annotating a work in the treebank. Thus, we are also challenged to find a solution to difficult passages, to make them searchable and analysable, so that we can study a specific phenomenon in one author or in a series of authors.

If we shift our attention to learning XML, TEI and encoding using a digital platform and digital resources, we look to *EpiDoc* and the *Perseids* platform, described in detail in Chapter 2.10. Here we will look at its importance as a place for developing collaboration. *Perseids* is a platform for everyone to work on, regardless of their expertise and background, where they can learn while collaborating. Its positive aspects are the varieties of views available, the interoperability of the data and the breakdown of social and geographical barriers. Editors deciding to employ *Perseids* for their projects should manage to look at the reliability and future sustainability of the data. It is very important to recognize that *Perseids* looks at changes in how knowledge is transmitted through a kind of dialogue between experts and non-experts, or experts of various disciplines, and achieves this through adding third party frameworks for annotation and also providing the data at anytime, anywhere, to editors and users. This is because the data are stored under a Creative Commons CC-BY-SA license with no proprietary system. Every component added to the platform should be open source, and made

available in “open source control repositories” (Almas and Beaulieu, 2016, p. 177). We have to point out that *Perseids* can change the notion of teaching, together with furthering collaboration. What we mean is that “the teacher becomes a collaborator, guiding students through the process of research” (Almas and Beaulieu, 2016, p. 177). Since the project we evaluate in this dissertation concerns a text having its roots in oral communication, to understand the role of the teacher we might go back to what we stated in Chapter One about the notion that switching to digital editions is similar to going back to the exchanges of oral communication in performance. The teacher or editor, depending on the goal of a project, is then someone who provides knowledge and then receives it back, with additions and changes. It is s/he who, alone or with a community of editors, will record and correct the contributions before publishing them. In this way we will learn that there is no fixed edition in a digital environment but a continuous fluctuation with changes that will be preserved and recorded. It is a peer-review system supporting all kinds of contribution, whether small or large, and it is a reward for students who see their contributions published. The main goal of *Perseids* is to follow the high standards of critical editions transferring them into the digital medium, making them more widely available via a number of tools that will allow for the making of treebanking analysis, the linking of an image to its transcription and the possibility of adding comments directly within the platform, together with employing CTS-URN and the Open Annotation data model. Thus, the data can be linked, referred to and assessed correctly. From the view of crowdsourcing, *Perseids* then helps students become scholars, making them part of a larger community, not taking away their work, so that they can re-use it. Together, it makes it possible to work on large collections of texts, such as the “Comprehensive Odyssey”.

6.4.4 Crowdsourcing and the Humanities now.

In conclusion, what does examining crowdsourcing for a project in the humanities mean? If we examine a new book published in 2016, *A New Companion to Digital Humanities*, we see that there is an interest in crowdsourcing explained in connection with collaboration, infrastructure and social editing. The only criticism we can make of such a large and vast collection of essays is that there is no reference to Classics in any of its chapters, at least none deemed important enough to have a mention in the index at the end of the book. Furthermore, there is no mention of one successful project in classics, the *Suda On Line*, in any of the chapters dealing most directly with crowdsourcing. It seems that most of their examples are taken from

projects regarding English literature. Nonetheless, they give an accurate depiction of the present situation concerning crowdsourcing and collaboration in the humanities.

Collaboration is seen as an essential part of humanities research. The old notion of the work of a single scholar appears to be threatened by cooperation, by work effected by a group, compared to work resulting from the inquisitiveness of a single person. Collaboration means connecting different cultures, positions and infrastructures, and its most important prerequisite is remembering and respecting all the different viewpoints. Edmond (2016) states that we need “intermediaries” (Edmond, 2016, p. 57) who will look at keeping the workflow moving and “encouraging open-mindedness” (Edmond, 2016, p. 57). Collaboration occurs within what Edmond calls infrastructure, the union of the sources of a project and of the software employed to analyse them. What Edmond stresses about needing to hide infrastructure from view, in order to build something that will help achieve a goal without shaping how it should be reached, and “never force the undesirable, but ... support the productive” is very important (Edmond, 2016, p. 60). Edmond expresses fears for the future, unless there are changes in how scholars look at sharing, and if we do not build a system that will take care both of the construction of the infrastructure and of its future preservation.

In Chapter One we described the possible relationship between orality and the communication model developed by the digital medium. We emphasized that comparing and contrasting different ideas during an oral exchange might happen similarly in this new written system of communication, i.e. collaboration within the digital medium. This exchange of ideas also occurs in society, so the teamwork we described might be one aspect of what is called Social Scholarly Editing. In the model described in Chapter 1.5, we placed the digital medium within the history of communication, its being the latest stage in a process originating in orality, which we can understand better through interpreting the Homeric poems. The never-ending interchange going back and forth from the editor to the readers/users takes place because there is shared knowledge between the two, not only concerning the poems, but also shaped by the historical times in which they live. The same could be said for the notion of Social Editing, where the concept of social might mean “user-generated content” (Price, 2016, p. 137). Here we described users participating in endeavours initiated by scholars, and under the control of a community of scholars, as in the *Suda On Line*. We stressed the importance of infrastructure in sustaining crowdsourcing projects, but what generates the need for new editing platforms is the abundance of records like digitized images of documents and OCR scanning of texts. As Codignola

(2014, pp. 63 – 87) clearly states, there is a sudden wealth of material, of primary sources available to scholars, and it seems as if we are being overloaded with information. If a computer can handle all the available material and produce results of a quantitative nature, an historian alone will never be able to handle all these new data, and he will be able only to publish researches which will be either too general or too specific. Furthermore, Codignola (2014, pp. 74 – 75) fears that we might be losing the context, the evidence that can only be found in printed sources and nowhere else. He talks about the composition of a book, how we look at its index, its notes, and how we explore its chapters. We are surrounded by the availability of data, so that we might find the information we need, but in a sequence of results of a query. We follow the doubts expressed by Chartier¹⁰⁹, a professor at the Collège de France, in an article in the newspaper *Le Monde*, quoted by Codignola. Chartier states that reading texts in a different medium changes their nature and their meaning; therefore, if we do not want to lose the past, we need to continue our programs of preserving the various material supporting texts. More importantly, we should be aware of the relationship between the materiality and content that we leave behind and we also need to record all the information possible, to avoid merely facing “un monde de fragments décontextualisés, juxtaposés, indéfiniment recomposables, sans que soit nécessaire ou désirée la compréhension de la relation qui les inscrit dans l'oeuvre dont ils ont été extraits” (Chartier, 2009¹¹⁰). Social editing, collaboration, is what is needed to handle these sources, these digitized documents; it will help to publish more accurate online content and with more related information, despite the possibility digital projects have of being published while they are still in progress. Siemens and Crompton, editors of the Devonshire Manuscript¹¹¹ of 1530/1540, stress that their aim is to produce a “truly socially mediated edition of the manuscript for publication” (The Social Edition: Scholarly Editing Across Communities, 2012¹¹²). Price (2016, p. 144) reports that Robinson stated that social editions will be the work of many and the property of all. This might be true up to a point, considering the constraints that can be put on the re-use of data. Referring to licensing and restrictions, Price (2016, p. 145 – 146) states that if, on the one hand, we publish more fluid and open projects, on the other hand there are

¹⁰⁹ http://www.lemonde.fr/idees/article/2009/10/26/l-avenir-numerique-du-livre-par-roger-chartier_1258883_3232.html Accessed 12/06/16.

¹¹⁰ “A world of decontextualized, juxtaposed, indefinitely recomposable fragments, without the comprehension of the relationship that inscribes them in the work from which they were extracted being either necessary or desirable”. (My translation)

¹¹¹ http://en.wikibooks.org/wiki/The_Devonshire_Manuscript. Accessed the 12/06/16.

¹¹² <http://www.dh2012.uni-hamburg.de/conference/programme/abstracts/the-social-edition-scholarly-editing-across-communities/>. Accessed the 25 September 2016.

still too many restrictions. In his opinion “open content needs to be fully and truly open, not open only after an author has granted permission” (Price, 2016, p. 146). We should employ user-generated content to provide more precise encodings and to publish amounts of texts otherwise remaining concealed.

We considered various aspects connected with crowdsourcing: collaboration, infrastructure and user-generated content. When examining crowdsourcing employed in the Humanities, we see two directions, one looking towards the Heritage Sector and the other at Digital Humanities and document transcriptions. For the Heritage Sector, we are looking at GLAMs (galleries, libraries, archives and museums). It is a gathering of interested individuals driven by a desire to enhance public memory. If users were engaged in activities that give them a public reward, they would feel part of our cultural heritage system. Terras (2016, p. 429) tells us what defines crowdsourcing in digital humanities. She quotes the opinion expressed by Dunn and Hedges (2012, p. 7, 18-19), who isolate four factors:

a) The existence of a clearly-defined humanities direction and/or research question. [...] this characteristic is especially significant, since the *academic* component of academic humanities crowdsourcing implies some form of professional rigor. However, we do not assume that the source of that rigor must necessarily originate from a Higher Education Institution.

b) The potential for a group with open membership to transform or add value to primary material or the [its] interpretation [...]

c) There needs to be a definable task, or some meaningful and replicable way of breaking the workflow down into sets of definable tasks.

d) The activity should be scalable, both to different volumes of data and different levels of participation. (Dunn and Hedges, 2012, p.7)

They believe crowdsourcing might also have another outcome, the production of new knowledge, which Terras sums up as follows:

“making ephemera available [...]; opening up information [...]; giving a wider audience to specific information [...]; circulation of personal histories and diaries; giving personal links to historical processes and events; identifying links between objects; summarizing and circulating datasets; synthesizing new data from existing sources; and recording ephemeral knowledge before it dissipates” (Terras, 2016, p. 429).

One of the fields where crowdsourcing is most employed is document transcription. The issues Terras (2016, p. 430 – 435) describes must be carefully recalled because, even if they stem mostly from her experience as editor of the

*Transcribe Bentham*¹¹³ project, they seem to be almost universal. Primarily, she states the need for a platform on which to perform this collaboration and moreover that we need to deal with volunteers' understanding of how they might perform their activities. We follow Brumfield¹¹⁴ and Robinson¹¹⁵ (2013) on how the contributions of collaborators could fall into the realm of dystopia and utopia. Dystopia means that we are confronted with a number of collaborators, perhaps doing a great deal of transcribing, but without knowing the existence of standards or how to use them, so that they will provide a large amount of unserviceable work, when compared to the rules for transcribing documents, such as TEI and EpiDoc. In contrast, utopia means a sharing among professionals and amateurs, where collaborators are taught or given guidance to complete better editing and encoding, following what is now considered standard, and which they are not compelled to know beforehand. In this way, there will be more quality in crowdsourcing projects, and even undertakings where users work alone will gain from this lesson because amateurs will become not only better supporters of their editions but also a living example of the importance of having standards for editing. Having the chance of learning at least some basic standards will improve even projects not run by scholars or institutions but solely by volunteers. We should stress here that this is what Brumfield describes as "road to utopia" (Brumfield, 2013), something which he would like to see achieved in the future, without knowing whether it will ever become reality or not.

Following this line of reasoning, Terras points out that projects employing the TEI as their encoding markup, such as in *Transcribe Bentham*, demonstrate the possibility of training users to employ XML. Involving scholars in digital projects ensures a quality checking system of the encoding; they will then be able to train users

¹¹³It is true that a project involving the transcription of the writings of the philosopher and reformer Jeremy Bentham (1748-1832) is completely different from the encoding of the secondary sources of the *Odyssey*. The final aim of the Bentham Project is to publish a scholarly edition of *The Collected Works of Jeremy Bentham*, which will consist in almost seventy volumes, to be edited from the transcription of the 60,000 folios held in the UCL Library's Special Collection and in the 12,500 held by the British Library. The transcription will create a "searchable digital repository of the collection" (Causer et al., 2012, p. 120). The editors decided to involve the public in this project: they were looking for unpaid volunteers with no prior expertise either in the subject or in the technique of transcribing manuscripts using XML/TEI. The editors needed an interface that would host the manuscript images and a transcription tool. To achieve this result, they created a Transcription Desk, a MediaWiki with high-resolution digital images and a transcription toolbar that helped in the identification of specific characteristics of portions of text. The toolbar adds TEI/XML tags to the transcription. In this way, the transcription could be easily transferred from the Transcription Desk and converted into XML using an XML editor (Causer et al., 2012, pp. 120-125). <http://blogs.ucl.ac.uk/transcribe-bentham/>. Last visited on the 3rd November 2014.

¹¹⁴<http://manuscripttranscription.blogspot.it/2013/07/the-collaborative-future-of-amateur.html>. Accessed the 25 September 2016.

¹¹⁵http://www.academia.edu/4124828/SDSE_2013_why_digital_humanists_should_get_out_of_textual_scholarship. Accessed the 25 September 2016.

either directly or with the compilation of Guidelines. If we now recognize the possibilities crowdsourcing offers, we can also start thinking about how the data produced should be stored and saved for future research. This involves the long discussed issue of copyright and licence, how to treat the data provided by the contributors and how to consider their labour from an ethical perspective. If collaborators were students, the training would help provide students with a set of skills transferable to their future research.

As Terras stresses, “The digital humanities can aid in creating stronger links between the public and humanities research...crowdsourcing becomes a method of advocacy for the importance of humanities scholarship, involving and integrating non-academic sectors of society into areas of humanistic endeavour” (Terras, 2016, p. 435).

6.5 Conclusion: Is the Crowdsourcing Model Suitable for the “Comprehensive Odyssey”?

After this detailed analysis of crowdsourcing and its involvement in the humanities, we must check to see whether it could be implemented in the “Comprehensive Odyssey”. We shall base our analysis on the *Suda On Line* and on the aforementioned understanding of collaboration. We believe the only way forward for an editorial project in digital humanities handling many documents and texts is collaboration, and crowdsourcing might aid progress in this sense. The “Comprehensive Odyssey” is a proof of concept that might avail itself of platforms such as *Perseids* because it consists in the encoding of various texts from different sources: the scholia, the secondary sources and the *Odyssey*. Depending on the final decision concerning the choice of editions for the secondary sources, the work required in this proof of concept might change. To return to what we stressed in Chapter 3.8, this depends on the choice of public domain editions or of copyrighted printed editions. We envisage that the work on the “Comprehensive Odyssey” could be divided into three stages. 1) Collecting and encoding the secondary sources. 2) Submitting the encoding: once the volunteers have completed their encoding, they can submit it. 3) Checking the progress of the “Comprehensive Odyssey”. In any digital project described in Chapter 2, and in our analysis of crowdsourcing, we faced a collaboration that came in between what Brabham called top-down and bottom-up managements (2013, p. 4). Nevertheless, the role of the editors, or, to cite Brabham, of the top-down management, is still more important than that of the users, the bottom-up management. The role of the managing editors is still predominant. Although editors are becoming facilitators of the work of

the users, they are the one who control the standard of every project, regarding not only the content but also the digital platforms of publication. We realise that we must provide Guidelines, so that anyone deciding to contribute can understand the requirements and how to proceed. Since we believe that the “Comprehensive Odyssey” might work only through collaboration, we have to say that the managing editors should never ask too much from the community, but should accept what any member can offer because, as Rockwell (2012, p. 147) said, “They are your word-of-mouth advertising”. Furthermore, Rockwell (2012, p. 148) stresses that a community should be encouraged because “the sense of community is one of the motivations for volunteers to participate”. During the various stages in such an enormous project we should check to see whether the system works and also whether the “organizational team” (Rockwell, 2012, pp. 148-149) is structured well enough to handle the issues that will inevitably arise.

The difficulties of a project of this scale concern the choice and number of secondary sources to encode, the addition of the encoding of the scholia and the understanding of XML/TEI. We stressed in Chapters Four and Five that the choice of sources might not be straightforward and, similarly, neither might the selection of printed editions. The question is whether we could employ crowdsourcing to solve these issues or whether they should be settled before the collaboration employed for the encoding and addition of the chosen texts. At what stage should we employ collaborators? What would the incentive for people to collaborate be if we asked them only to encode texts edited by others, where there was no contribution on their part? If editors were to leave the choice of editions to contributors, what would the chances be that they would look at critical editions and bibliography and make an informed decision on which edition to choose? Or would they use the first edition/text that happened to be available to them? In every project we analysed, whenever it concerned the edition of a work, there was one chosen edition, such as the Adler edition (1928 – 1938) for the *Suda On Line*. It is difficult to understand now what the outcome might be. It is clear that even a discussion on a source might enrich the project by recognising existing questions regarding certain texts. Discussing them to reach an agreement or a compromise will, nonetheless, hinder the project’s progress, even if from our analysis of projects and theories of crowdsourcing we have seen that contributors should not be belittled and an editor should not make them feel that their collaboration is not respected. We believe, from reading the Guidelines to the *Digital Fragmenta Historicorum Graecorum (DFHG)*, that a text, if digitally edited and encoded, will receive additions, and that employing Guidelines will help users grasp XML/TEI

(something we mentioned when speaking about teaching XML/TEI). We should ask whether it would be better to break the encoding into smaller phases, thus trying to reduce the amount of information beginners will have to master to be able to submit an entry. Learning XML/TEI has been exhaustively discussed. Following what Bodard and Stoyanova pointed out about learning digital epigraphy (2016), we can understand how the implementation of workshops during conferences and classes on EpiDoc in Master's courses are helping to spread the knowledge of digital epigraphy. In this way, contributors acquire the necessary digital skills that are kept separate from the teaching of epigraphy in a classroom. In their opinion, learning markup is like learning to think in a structured way about data, also helping to understand the notions of attribution, credit and responsibility (Bodard and Stoyanova, 2016, p. 63). They consider that "the educational and public engagement benefits of crowdsourcing activities are more significant and important than the content creation or enrichment achieved by the process" (Bodard and Stoyanova, 2016, p. 64). We are convinced that acquiring a small number of digital skills through Guidelines, similar to those of the *DFHG*, would help contributors, even to a proof of concept such as the "Comprehensive Odyssey". The final number of collaborators would probably drop, but its scholarly aspect would thereby be maintained.

Contributors would be those who are mainly interested in Homeric studies. Nonetheless, there is the chance that some of those interested in one of the authors in the secondary sources might also come across this edition. Unexpected users are less likely, but if this proof of concept is published on line, they should be foreseen. There may be other outcomes, which cannot be predicted easily, depending to a great extent on how the transfer from the printed to the digital medium changes attitudes among readers/users of printed editions and of the *Odyssey*, the work at the core of the "Comprehensive Odyssey". This does not mean their approach to the *Odyssey* in itself will change, just to the information they can find in the same place, that is to say, the secondary sources and the scholia. Hillesund and Bélisle (2014, pp. 114-154) call it "digital remediation...the refashioning that each new technology introduces in its presentation when a medium tries to represent another medium". They make, moreover, the case for differentiating scholarly reading from other kinds, such as reading in private. Scholarly reading involves not only reading a text but also working on it, questioning every part of it and understanding its content together with the knowledge it offers. They question how the vast information available with its new structure will shape reading practices. They believe what has changed is "the readers' goal" (Hillesund and

Bélisle, 2014, p. 151), not reading a definite text, but browsing and critically choosing its readings. Yet again, the problem remains as to whether editors try to achieve too much. This question is undoubtedly present in the above-cited authors' underlying comparison between their description of readers' habits and the new opportunities of digital editions. While editing the "Comprehensive Odyssey", it became obvious that a digital critical edition of an ancient Greek text would encompass a wide range of subjects (philology, epigraphy, codicology), not to mention technical challenges. These are, up to a point, described by Hillesund and Bélisle (2014, pp. 151-152) when they affirm that digital editions will offer advantages over paper editions: "...more inclusive and richer versions of texts...new methods for critical studies and analysis...open navigation...add[ing] comments, links and annotations...collective productions".

Following the notions described in this chapter, we should aim for an edition combining the material encoded following Open Data projects, such as *Perseids*, thus openness with comments and annotations. Simultaneously, we believe the "Comprehensive Odyssey" should retain a fixed text. As much as the user/reader would like to select from different choices, s/he will always need to have a point of reference. By being provided with the source files, the user/reader can look at the XSLT files, changing them to achieve his/her own visualization. If we follow the *Perseids* platform or the *DFHG*, we must prepare the XSLT files only after we have completed the encoding. We have to think mainly about the text and the work to encode, about how much information to retain and add and ensure that the encoding files will be available there in future. As Parker (2012) pointed out, we should reduce the working process and keep the XML files as unchanged as possible, allowing for modifications only at visualisation stage. The most important task is collecting the material and encoding it. We believe crowdsourcing could be an effective method for achieving this. Will it lead to a feasible endeavour? We believe it will give this project, or at least the encoding, a chance, an option, while, without collaboration, it would be like climbing an enormous mountain, with no likelihood of ever reaching the peak.

Conclusion: Possibilities and Hindrances.

In this dissertation we explored the question of whether a digital critical edition/repository of Homer's *Odyssey*, its secondary sources and its scholia could be produced. To see whether this endeavour had any chance of being feasible and worthwhile, we divided the work into stages, starting with an analysis of how matters now stand both in the tradition of Homeric Scholarship and in the digital humanities world, as regards digital projects on Homer and the Classics. We proceeded with an overview of digital scholarly editing and textual editing theory. Having set the ground upon which the foundations of our "Comprehensive Odyssey" could be laid, we described its principles and encoding process. We then devoted one chapter to the secondary sources, the choice of their edition and how they can be regarded and encoded as quotations. To conclude our examination, we allocated the final chapter to the study of the feasibility of our project, describing crowdsourcing, while stressing once again the importance both of the critical apparatus and of understanding copyright.

We point out the main elements we learned and which lines of investigation had to be pursued and which set aside. We started from an analysis of orality and of changes in means of communication, from orality to print to digital. We must emphasize again here that the text object of this dissertation is the subsequent transcription of a work originating in the realm of oral compositions in performance. The findings produced by a study of orality are overwhelming and, at times, disconcerting. We refer to the findings of both Foley (1999), Kelly (2007) and González (2013) and to their respective notions of traditional referentiality and notional fixity. The Homeric poems are replete with 'words' that are not single words, but "cognitive units of traditional expression" (Foley, 1999, p. 22), understood only by reading behind the signs, comprehending the associations they stir up from our memory. The point Foley makes is that the *Iliad* and the *Odyssey* employ a language that the poet and the listener shared. Sharing took place in the performance arena, where this special language was employed, and only there could this particular register be put to use and understood. Here lies the importance of Kelly's research (2007) into what lies behind words and units, on the connotative level of the poems, that is to say, what lies behind the literal meaning of words. In the same way, we refer to González (2013) and notional fixity, the gradual fixation of a story that continually changes in a never-ending way through various oral performances. The story, which came from a divine inspiration from the muses, is original, and the

audience is reassured that it will always remain the same, despite changing during the various competitions. We find here the creativity of the single rhapsode, the first creation of a fixed sequence of events by a single person together with group composition in performance, the “connection of prosodic, syntactic and semantic elements, all of which are understood and felt by the audience” (González, Chapter 1.4).

We explained the importance these studies have in understanding the relationship between editors and users/readers of digital editions through the works of Ong (1982) and Pettitt (2007). Ong describes our age as an age of secondary orality, coming after the passive notion, the sense of privacy and of fixity, both in text and in viewpoint, instilled by writing. He believes orality is linked to communication, an exchange that occurs in a social space, where something moves from one person to another in a constant give and take between them. What happens today is that we live in a world with a new sense of communion, this time shaped by the previous movement towards the inner self and by the experience of print and writing. Pettitt proceeds and is more radical, expressing the idea that we had been living in what he calls the “Gutenberg parenthesis” and we are now part of a remediation process, a movement towards a communion of oral, written and print-literal communication, where the exchange is transferred into the web. What we envisage for digital editions is connected to these ideas and it is the notion of collaboration and Open Data expressed by Crane and Berti in Leipzig. This communication can take place within our world of secondary orality in the written world, where exchange happens in a written way, mediated by the digital medium.

After contemplating Jacobson’s communication method (1960), how can we define what are we experiencing now? We described a development of this method, from oral communication to written communication to the digital medium and we envisaged a never-ending movement back and forth among the digital edition/repository, the editor and the user/reader. We draw a comparison between the structure we now have and the orality of ancient times, depicting the editor as the new rhapsode and the users/readers as the new listeners collaborating, not in a performance arena, but on the platforms provided by the digital medium, one example of such being *Perseids*. The present change can be seen as a movement towards the past, which Pettitt fears because it could take us back to the openness of the Middle-Ages, making us “surf[...] to serfdom” (Pettitt, 2007, p. 7).

We considered as the most apt to suit our proof of concept the work on Open Data for classical studies, promoted mainly at the university of Leipzig, together with

the notion of Open Source Critical Edition developed by Bodard and Garces (2009)¹¹⁶. As we explained in Chapter Six, there are two major hindrances to the feasibility of this project, one being copyright, the other time, connected to the complexity and vastness of the material proposed for encoding in Chapter Four. We must stress that we are aware of the fact that, by proposing here to encode printed editions under copyright, we tend to move away from the notion of Open Data and the possibility of employing creative commons licences in our proof of concept. This is why we have been looking with great interest at the latest work on platforms for collaboration by Crane and Berti. They are developing a solution whereby we could encode a version of a work which is in the public domain and later add, in commentaries, whatever might be deemed worthwhile from more recent editions under copyright. Furthermore, they stress the importance of collaboration, of engaging students, of teaching and producing scholarship together. As we explained in Chapter Six, we have to realise that digital technologies can be employed for furthering the learning of classical languages, and, furthermore, they might not be a prerequisite of a contributor to a digital project, but they could be learnt, either by Guidelines or in workshops. A very important aspect of research in digital Classics is the communion of teaching and researching, of encouraging students to contribute to a project while studying. Another important characteristic of Berti's work worth mentioning again here is her study on encoding quotations and fragmentary works. We described her work on the *Perseids* platform and on the *Digital Fragmenta Historicorum Graecorum (DFHG)*. From the *DFHG* we took the notion of the importance we should attribute to the encoding of a text, which in that case comes before developing the XSLT files for visualisation. It taught us how to encode a specific edition of a work, remaining attached to the physical structure of the printed edition, something about which we became very aware while producing the encoding of the scholia in the Pontani edition (see Chapter 4.4.1). An additional feature found in both the *Perseids* platform and the *DFHG* is the implementation of the Canonical Text Services (CTS) and the Collections, Indexes and Texts architecture (CITE), "a framework that allows URNs to be used as a new means for referencing citations" (Chapter 2.6). Both were introduced by the editors of the *Homer Multitext* (Chapter 2.6) who employed the architecture to offer the scholia in context, providing unique identifiers for every single object published in their project. If the "Comprehensive Odyssey" proceeds any further, we believe that, they should be implemented in the project.

¹¹⁶ Chapter 3.9.5

At this point, we had to ask to which part of the project collaboration and CTS might be added, whether to the encoding of the *Odyssey*, to the scholia or to the secondary sources. This draws us to the final point: which parts of this proof of concept should be continued and which should be considered too vast to be pursued any further. The argument is twofold. On the one hand, we must consider whether it would be feasible to encode all the material we proposed, and, on the other hand, whether the studies we described in Chapter Five should not also be part of this digital critical edition/repository; they may, however, be a point of departure that lies too far afield.

As far as the first point is concerned, we should remember that the “Comprehensive Odyssey” holds the transcription of printed editions, one for the first 105 verses of Book One of the *Odyssey*, one for the secondary sources and one for the Scholia. All this material is what remains of the various oral performances that were held throughout the centuries and of the first transcription of the poems, if there ever was only one. We decided that the “Comprehensive Odyssey” should contain the poem’s direct and indirect tradition, even if only that found in printed editions. The question is whether there should be just one single project containing all this diverse material, or whether the latter should be treated discretely, in one project at a time. We came to realise that we were treating editions of works of different origin in a similar fashion, for example original works and collection/quotations. We originally thought we could simply separate the secondary sources from the scholia, but we then realised that even secondary sources cannot be treated as a single category. We described how the secondary sources in this project are quotations, but some are from works that we possess in their entirety, while others are quotations within other authors. There are also secondary sources available only in the scholia, but the scholia are a work on their own. Given the aforementioned complications in choosing the secondary sources and their editions, it will be difficult to achieve a ‘complete’ survey of them for every *Odyssey* line, even if we managed to establish a crowdsourcing project. Considering these hindrances, if, as we have said, we would like to produce a digital scholarly edition/repository, we would need an editor for every encoded work, which seems even more arduous than building a collaboration network. The examination of previous and ongoing digital projects on Homer and the Classics has been most valuable in recognising the issues lying behind the “Comprehensive Odyssey”. Here we are talking mainly about all the projects concerning Homer (chiefly the *Homer Multitext*), the *New Testament Project* and all those involving Open Data and crowdsourcing. As for the latter, we might stress that the *Suda On Line*, the *Transcribe Bentham* and the *DFHG*

are all only about one work or one author. Furthermore, studies on secondary sources, which form one chapter of this dissertation, were inevitable while developing the “Comprehensive Odyssey”. They helped assess the situation and understand what the work ahead would entail. As we stated in Chapter Five, “in order to decide on the editions of the sources and subsequently on the variants they hold, which are important for the *Odyssey*, their history will definitely be briefly surveyed” (Chapter 5.6). This will be unavoidable, if we turn to crowdsourcing because it means involving people who might not have a very profound knowledge of the author they are to encode. This question also includes studying not only Homer but also other authors, and we realise that this should not pertain directly to the “Comprehensive Odyssey”, but might be part of further studies, which could depart from this proof of concept but not at the same time. Were we to implement the CTS/CITE framework for citations, these further, separate studies could be linked to the secondary sources to which they refer. As far as the scholia are concerned, we believe a true digital critical edition of them should be encoded as a work of its own, using the CTS/CITE architecture, due to the difficulties recognized in Chapter Four.

Were we to answer the question we posed at the end of the introduction, it is clear that the “Comprehensive Odyssey”, as we described it in Chapters Four and Five, has no future. It is too ambitious since it contains several different aspects within one project. However, given what we have learnt about implementing citations in a digital encoding, it would not be impossible to connect/link editions of secondary sources to the lines in a future digital critical edition of the *Odyssey*, perhaps by means of a commentary. It could then become “an edition that contains within itself many editions on one sole platform (Vanhoutte, 2010)” (Chapter 4.3). The production of such an edition, would, needless to say, have to be able to avail itself of the desirable situation of editions created via a XML/TEI encoding, without using a proprietary software or platform. We should stress that we believe in the importance of studying orality in connection to collaboration in the digital medium, and in the value added by this medium to the research into, and learning of, the Homeric poems. We reiterate the importance of Classics scholars in shaping digital platforms and methods, both for learning and for editing and stress the need to pursue Open data and Creative Commons licences in order to reduce the problems of copyright, which, nevertheless, it will be impossible to ignore.

In conclusion, we do not consider this proof of concept a failure, but a worthwhile journey towards understanding the present possibilities of the digital

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medium and the current state of Homeric studies in the digital age, and enquiring into how the two can find a balance and proceed.

Appendices

Appendix 1 Diogenianus, Chrysippus, Eusebius and Homer's *Odyssey* α 7, 32-34.

1.1 Introduction.

In this specific case, we demonstrate how the use of the “Comprehensive *Odyssey*” could help understand not only variants but also the fact that Homer was considered important by authors in different centuries to the same degree. We do not intend to say that it would not be possible to demonstrate this in printed editions, merely that in our digital project all these sources are gathered together in the same visual space, without any need to seek one of them specifically, and that they all depart from the *Odyssey* itself, not from one secondary source. In this digital project, all the sources will be set out together under the line they are quoting, and similarities can be inferred by simply skimming through the texts. The notion on which this project is based is that the *Odyssey* is always taken as the starting point. It is as if we had a different focal point, in this case reflecting the fact that not only can secondary sources help promote a philological understanding of the text of Homer, but that they can also be a starting point for a more general analysis of a specific theme, from a Homeric point of view. As we stressed in Chapter 5.1, the study performed in this appendix depicts a secondary aspect stemming from the collection of Homeric variants, but not directly connected with the textual edition of the sources.

When examining the list of secondary sources for lines 7 and 32-34 of the first book of the *Odyssey*, a common denominator stands out, namely the concept of fate and destiny, and we see how these Homeric lines are used as examples of this concept in the fragments of Diogenianus, Chrysippus and in the *Praeparatio Evangelica* by Eusebius. The sources have a complex relationship because the passage from Chrysippus can be read in a fragment of Diogenianus, and the Diogenianus fragments in Eusebius. There is more than one Diogenianus in Greek Literature. Before proceeding to explain the reasoning of Eusebius and his quotation of Diogenianus, it should be clarified here that Eusebius' Diogenianus is the Epicurean author, not the better-known grammarian of the time of Emperor Hadrian¹¹⁷. As a characteristic of this “Comprehensive *Odyssey*”, every author has been given his own citation and his own bibliographical reference.

¹¹⁷Diogenianus was a second-century grammarian, born in a city called Heraclea at the time of Emperor Hadrian. The information available on him comes from the Suda lexicon. The Suda cites two works by Diogenianus: one is the Λέξις παντοδαπή κατὰ στοιχείον (an epitome of the lexicographical works of Pamphilus and Zopiron in five volumes, with a paremiographic interests) and the other is the Ἐπιγραμμάτων ἀνθολόγιον (a selection of satyriacal and symposial compositions) (Fausto Montana, 2003).

Each of these authors cites the other for a different reason, in this case in order to express his view on fate and destiny and on the role of men in the occurrence of historical events. We can see that they state a different opinion not only on fate and destiny but also on the meaning of these Homeric lines. The fragments of Diogenianus and Chrysippus can be found in the *Praeparatio Evangelica* 6.8, where Eusebius gathers together various points of view on the concept of fate, starting from ancient Greek philosophers. Eusebius cites only Diogenianus and Chrysippus, but when looking at lines 32-34, there are other Stoic philosophers one needs to quote: Cleanthes in his book *De Providentia et Divinatione* and Hierocles in his treatise on τίνα τρόπον θεοῖς χρηστέον. Cleanthes is mentioned in the scholia in lines 32-34, while Hierocles is quoted by Stobaeus in *Anthologium* 2.9.7. Here they are used only to explain how the concepts of fate and freewill had an important place in Stoic thought. The Homeric passages are not discussed in these authors; they are quoted merely as an example within a broader discussion on free will and fate. Nevertheless, their quotation is important because it provides us with a glimpse into how Homer was seen and how certain lines were used in order to make a point about an issue.

In the following pages, we shall focus in particular on the Homeric lines and on how Chrysippus and Eusebius used them in their arguments on fate and free will. Eusebius does not exactly express his own ideas, but the way he employs his sources means that he is following an argument against Stoicism, and his reasoning heads towards a greater goal, i.e. to lead the reader to the study of the Sacred texts. These lines from Homer deal with the concept of human responsibility as opposed to the influence of gods on human life. First, it is stated that men will die as a result of their own villainies and, second, that men accuse gods because they think that the gods are responsible for their misfortune, yet, in the end, it is by their own actions that they are harmed, and what they encounter is harsher than what is assumed to exist in their destiny. This discourse on man's destiny can be found at the beginning of the first book of the *Odyssey*, in the prologue, where Odysseus is praised for being superior to the other men of Ithaca who were at sea with him. The gods, with the exception of Poseidon who was visiting the Ethiopians, are assembled and deciding on the return of Odysseus, who is still wandering around after the Trojan war. These lines portray both Odysseus' desire to save his companions and the fact that he was not able to do so because they were fools, like Aegisthus, who was killed by Orestes. The gods warned Aegisthus not to marry Agamemnon's wife, but he did not listen and so was rightly killed, as Athena explains. Athena is pining for Odysseus, yet her words are set within a much broader

discourse on destiny, divine intervention and free will. Below is the text of the two passages from the van Thiel edition of the *Odyssey*:

αὐτῶν γὰρ σφετέρησιν ἀτασθαλίησιν ὄλοντο,
νήπιοι, οἳ κατὰ βοῦς Ὑπερίονος Ἥελίοιο
ἦσθιον· αὐτὰρ ὁ τοῖσιν ἀφείλετο νόστιμον ἦμαρ.

“ὦ πόποι, οἷον δὴ νῦ θεοὺς βροτοὶ αἰτιόωνται.
ἐξ ἡμέων γάρ φασι κάκ' ἔμμεναι· οἳ δὲ καὶ αὐτοὶ
σφῆσιν ἀτασθαλίησιν ὑπὲρ μόρον ἄλγε' ἔχουσιν,
ὥς καὶ νῦν Αἴγισθος ὑπὲρ μόρον Ἀτρεΐδαο
γῆμ' ἄλοχον μνηστήν, τὸν δ' ἔκτανε νοστήσαντα,
εἰδὼς αἰπὺν ὄλεθρον, ἐπεὶ πρό οἱ εἶπομεν ἡμεῖς,
Ἑρμείαν πέμψαντες, εὐσκοπον Ἀργεῖφόντην,
μήτ' αὐτὸν κτείνειν μήτε μνάσθαι ἄκοιτιν·
ἐκ γὰρ Ὀρέσταιο τίσις ἔσσεται Ἀτρεΐδαο,
ὀππότε' ἂν ἠβήσῃ τε καὶ ἤς ἱμεῖρεται αἴης.
ὥς ἔφαθ' Ἑρμείας, ἀλλ' οὐ φρένας Αἰγίσθοιο
πεῖθ' ἀγαθὰ φρονέων· νῦν δ' ἀθρόα πάντ' ἀπέτισε.”

This case study emphasises the fact that the figure of Homer remained a focal point for different authors in different times, continuing to form an essential text for the education of the population, from childhood on, even in a cultural environment that had changed from the time when the poem was set down in writing.

The period of time described in these paragraphs on Eusebius, the last period of Diocletianus and the reign of emperor Constantine, is a period influenced by the studies being carried out during the Hellenistic age, and in Alexandria, where, at the same time, the Homeric text was canonized and a commentary on the Greek translation of the Bible was produced. Pontani (2012) points out that it is thanks more to ideological factors than to linguistic ones that the Homeric poems emerged as the principal example used in the formulation of the Greek language (Pontani, 2012, p. 55). Homer was the “identitarian value for the Greek-speaking world” (Pontani, 2012, p. 77), and a philological work on the poems was produced at the same time as the emphasis was placed on the study of them for Greek grammar.

1.2 Eusebius.

1.2.1 Eusebius and the Caesarean library.

Life:

Eusebius was a Christian scholar (260-339) who lived most of his life in the city of Caesarea Maritima in Palestine, where he was a follower and student of Pamphilus, before becoming Bishop there in 314. He was the co-author of the *Apologia Origenis*, which Pamphilus wrote in the last years of his life spent in prison during the last period of Diocletianus' great persecution under governor Urbanus, until he was martyred in 311. He was also on very good terms with Emperor Constantine, for whom he wrote the *Vita Constantini* after the latter's death. It is assumed that Eusebius died between 339 and 340. His works started at the time of the great martyrs, about whom he wrote in his *De martiribus Palaestinae* of 311, while his other works were a response to the attacks launched against Christianity, such as the *Chronicon* and *Eclogae Propheticae*. He then moved towards narrative and apologetic works, the *Historia Ecclesiastica*, the *Preparatio Evangelica* and the *Demonstratio Evangelica*. In these works, through the quotations of Greek sources, he describes the superiority of Jewish wisdom and how it achieved its apotheosis in Christianity, counter-attacking the notions expressed as 'paganism' against the new religion.

Library, book production and change:

Eusebius' work is mainly connected to Caesarea with its library and school¹¹⁸, which he helped to enlarge and to become a focal point for research during his time as bishop there. It was an institution created principally to foster the links between Christianity and paganism, and to create an exchange which aimed to encourage interest in the Scriptures. The library had nearly 400 works, a number which was smaller than that of Alexandria and many of those to be found in Rome yet larger than many private libraries and monastery libraries available at the time in the region around Constantinople. It may well have been one of the smaller libraries, but this does not undermine its value as one dedicated to research. Along with other libraries that were created at the time of Eusebius, it was not only a place used for a collection of books, but also acted as a witness of the change from papyrus rolls to papyrus codices, from

¹¹⁸The expansion of the library started in 232 with the arrival of Origen, together with the establishment of a kind of school whose purpose was not to be devoted solely to the advanced education of Christians. During the persecution which occurred in the year 250, Origen was arrested and tortured but he survived, dying a few years later, leaving a depleted library. This situation persisted until the arrival of Pamphilus at Caesarea; he promoted the rebirth of the library and the school until he died in the last throws of the Diocletian persecution, leaving the task of helping the school to return to its former state to Eusebius.

papyrus codices to parchment codices, and from places of the production and exchange of codices to the creation of scriptoria.

In their work, *Christianity and the Transformation of the Book* (2006), Anthony Grafton and Megan Williams describe the change in the meaning of a book as a “material object and as a unity of meaning” (2006, p. 12). Eusebius achieved a result that was more than merely copying and preserving codices, and Grafton and Williams state that Eusebius gave rise to a work that became a standard for centuries¹¹⁹. He had a great sense of the page, which he deployed in a new way because he felt it necessary for the most important texts to be more easily accessible to readers¹²⁰.

1.2.2 Sources of Eusebius.

Knowledge of sources:

In his book about the library and Eusebius, Carriker (2003) and, furthermore, Kalligas (2001), in his article about the possibility of there being a trace of Longinus’ library in that of Eusebius, provide the best information about how Eusebius made use of his sources. The question is whether Eusebius quoted first-hand or whether he used *excerpta* or second-hand sources. In many cases, Eusebius quotes long passages, citing the title of the work and the name of the author. In such instances, one obviously assumes that he may have had a direct knowledge of the work, but, when the quotation is shorter, it is difficult to decide whether Eusebius read the particular author directly or whether he had second-hand knowledge of either the work or the author. There is no way of comparing passages of Eusebius with the manuscript tradition because similarities may derive from an ancient horizontal contamination and, therefore, there might be no connection whatsoever between the text in Eusebius and the manuscripts. The problem is that the use of excerpts meant that they were decontextualized and that “a scholar would, as he read more, and earlier, works, gradually excerpt fewer passages”; it might thus seem that the quotation comes from an intermediary even when

¹¹⁹ An example of this is the *Chronicon*, a collection of historical events in various countries from the beginning of the world. This work is divided into two parts, a Chronography, in which he connected dates and calendars from various countries with events that happened at that specific time, and a Canon or Tables. These are a “schematic chronicle of world history” from Abraham to the Romans, with information about nineteen countries and the years of the rulers connected to Hebrew patriarchs, with the main events that took place.

¹²⁰ When Eusebius approached the *Gospels*, he divided the texts into sections and gave them numbers; the numbers helped in the creation of tables that listed passages from the Gospels, which were then grouped into different tables, each of which listing passages connected to specific Gospels. It was possible in the end to move from one passage to a parallel one in a different Gospel. (Grafton and Williams, 2006, p. 195) This was part of his constant work on finding a favourable use of the page, which he continued in his *Commentarii in Psalmos*; in this case, he drew up tables with the names of the speakers and the corresponding passages he could recognize.

it does not (2003, p.49). In this case, even if the source was used through an intermediary, it is not possible to appreciate whether the author was also that of the original text. In the case under consideration in this chapter, the question arises as to what the use of the sources in the *Praeparatio Evangelica* was, and, in particular, what knowledge Eusebius had of Diogenianus and of how he cited Homer in his works.

Carriker (2003) is not certain but presumes that, even if the *Praeparatio Evangelica* is mainly considered a text where Eusebius used florilegia, it is not possible to rule out the use of direct sources. For the modern reader, it would be equally important to consider the Eusebius of the *Praeparatio*, an author who was only assembling a vast amount of data and in this way preserved ancient authors who would have been lost to us without his written apologetic work. This is the instance in this case study, thus why it is interesting to see what lies behind the use of every source.

Carriker (2003, pp. 51-53) points out that at times Eusebius does not conceal the fact that he is citing second-hand, but occasionally he merely hints that he is using a secondary source, such as compilers and doxographies. Carriker concludes by stating: “The use of each author must be examined in turn” (2003, p. 53). Eusebius “used intermediaries, even anthologies for some material like poetry, but his method in other works was to read original texts and gather material, a practice that he is likely to have followed when he composed the PE (*Praeparatio Evangelica*)” (2003, p. 53).

Apologetic Works:

The *Praeparatio Evangelica* stands within the tradition of apologetic works written in order to defend Christianity from the attacks of Jews and pagans. Aaron P. Johnson (2012) defines the *Praeparatio* as the “culmination of the apologetic tradition” (2012, p.11) written at the beginning of a new era, the era following the Great Persecution, the era of Constantine, who defeated Maxentius in precisely the year before Eusebius started writing the *Praeparatio* in 313 A.D.¹²¹.

Even if it might seem to be an anthology, the *Praeparatio* is a unitary work that depicts the history of both Hebrews and Greeks with the final purpose of describing Christians as a progeny of the Hebrews and of belittling the Greeks by comparison. According to Johnson (2012, p. 60), Eusebius uses the quotations in order to challenge the authority of the very same authors that he cites, creating a “narrative of descent” as a preparation for the education of converts. (2012, p. 61)

¹²¹In this chapter, simple religious categories are used as means of distinguishing Greeks and Hebrews. Johnson (2012) believes that this is too simple and that “categories of religious identities- ‘paganism’ or ‘monotheism’ - cannot sufficiently explain the formulations of identity produced in the *Praeparatio*” (p. 17).

Eusebius' aim is to convince non-Christians that the Scriptures are of greater worth than the writings of the ancient Greeks on a specific theme. The method he uses can be called "negative criticism", following the definition put forward by Kofsky (2000), which disproves a belief by adopting the writing that the Greeks composed in favour of that specific subject. Eusebius' worth is that all sources are as important to him as they are to the modern reader, even if they are used to demonstrate the contrary to what the original author's intention was. David Amand de Mendieta (1945, pp. 362-367) describes Eusebius as an explorer of the past, an archivist, not an original writer, but someone who uses the sources in order to contrast Hebraic philosophy to Greek philosophical schools. Using innumerable citations and extracts, he wants to avoid any accusation of ignorance, while attacking various aspects of Greek thought, such as the Stoic vision of fatalism¹²².

Diogenianus and Homer:

As far as Eusebius' knowledge of Diogenianus is concerned, one has to remember that Eusebius is the main source of all the remaining fragments of Diogenianus: first, a criticism of the pagan belief in oracles, supported by a quote from "Diogenianus' attack on Chrysippus' doctrine of Fate" (Carriker, 2003, p. 89) in *Praeparatio Evangelica* IV.3, and, second, a criticism of the doctrine of Fate, with a quotation from the same source in *Praeparatio Evangelica* VI.8. The Homeric quotation is found in Book Six, and, as has already been noted, concerns free will and human determinism. There are disastrous consequences for morals and religion if people follow εἰμαρμένη and do not use their free will. Diogenianus' use confirms Eusebius' rejection of fatalism, a confirmation of a Christian belief using an ancient Greek writer, which, in this case, does not contradict Eusebius, but reaffirms his opinion¹²³. Carriker states,

¹²² One might mention that there was an intersection of Christian and Greek education. Guy G. Stroumsa states (2012, pp. 29-41) that the texts that were not part of the Christian canon were not rejected but there was an integration of the two cultures, which derived from the observation that at the end of both there was God. The author says that the Church Fathers did not want to lose the texts of the Hellenic tradition and, in order to keep them, they coined the expression "the theft of the Greeks" (Stroumsa, 2012, p.32). This means that the theories expressed by Greeks philosophers could carry a meaning similar to those of the Scriptures, allowing for an education that would not escape tradition, while at the same time embracing Christianity. Permitting the teaching of Greek works and making them understandable via the notions expressed in the Bible affected the comprehension of the Homeric Poems, which also became part of this interpretative vein. What one can see in Eusebius' *Praeparatio Evangelica* is this mingling of different genres and the wish not to lose any notion from the past, linking every chance to learn, even from texts that were not part of the sacred tradition. It is as if there were two canons, as Guy G. Stroumsa wrote (p.36), one of which was the key to understanding the other one, that which derived from classical authors.

¹²³ Glenn F. Chesnut (1973) in *Fate, Fortune, Free Will and Nature in Eusebius of Caesarea* well describes how Eusebius could not abide the pagans' notion of fate, the thought that human actions were not decided by human intervention and control, but by a force that men could not control. Eusebius' argument against the existence of an external force such as fate that governs human actions is a moral one. It is not possible

“There is no cause to doubt that Eusebius used Diogenianus’ work first-hand and that the library of Caesarea possessed a copy of it” (Carriker, 2003, p. 89). To write that Eusebius is the only source available on Diogenianus is erroneous because we also have Theodoretus, who was bishop of Cyrrhus in the 5th century. He wrote the *Cure for the Diseases of the Greeks*, in which he conveys a knowledge of Epicurus, who is considered a blasphemer, with a detailed description of his use of language and his theories about atoms, infinite worlds, God and pleasure (John Ferguson, 1990, pp. 2322-2323). Ferguson (1990, p. 2323) is uncertain about whether Theodoretus’ knowledge of Diogenianus derived from Eusebius because there are “minor differences of reading”. Ferguson (1990, p. 2323) thinks that “some of them might be from handbooks; this at least indicates that handbooks with Epicurean material were still in circulation. Certainly he drew on Aetius and the doxographic tradition. But it is hard not to think that he has a firsthand knowledge of Epicurus’s own writing”

With reference to the handling of Homeric lines, Carriker (Carriker, 2003, pp.131-135) mentions that Eusebius read Homer during his early studies, but it is not clear whether he referred to Homer in his later works. There are not many quotations from Homer in Eusebius’ works, some of which are to be found in quotations from other authors, while others are reminiscences. The examples cited by Carriker (2003) can be seen as allusions and quotations from Homer, but with parallels and references from other authors. Carriker (2003) also relates 11 places¹²⁴ where the “reminiscence” is so short that it is called a reference and other places where Eusebius cites entire lines, such as in the *Commentarii in Psalmos* and the *Vita Constantini* IV, 7, I where he cites the Homeric lines on the Ethiopians as the most distant of men (*Odyssey*, α, 23). Carriker (2003, p. 135) concludes that Eusebius “could recall well-known passages from Homer”, that “the longer Homeric passages that Eusebius reproduces generally come from intermediaries” and that “no doubt Eusebius read Homer in his school-days, but he does not make much direct use of them [Homeric lines] in his writings”.

to think that there is no human responsibility for actions taken by men and that history takes place beyond human control.

¹²⁴1) *Contra Hieroclem*, 23;

2) *De ecclesiastica Theologia*, I.12 and II.20;

3) *Praeparatio Evangelica* IV. 3.3

4) *Laus Constantini*, prologue 2;

5) *Laus Constantini*, 6.4;

6) *Contra Marcellum*, I.2;

7) *Praeparatio Evangelica* VI.6.71;

8) *Vita Constantini* III.43.5;

9) *Laus Constantini*, 8.4 (and *Vita Constantini* III.54.6);

10) *Praeparatio Evangelica* VI.3.3;

11) *Laus Constantini* 9.8” (Carriker, 2003, pp. 132-133).

Eusebius' text provides a well-informed use of classical sources in order to describe his thoughts, giving us the opportunity to read authors who, on the contrary, would have been forgotten.

1.3 Diogenianus and Chrysippus.

1.3.1 Diogenianus.

After describing Eusebius' life and works and the knowledge of Homer in a society in which Christianity was becoming increasingly dominant over ancient customs and religions, attention can be focused on the source of the Homeric lines, namely Diogenianus, who, to be precise, does not quote Homer directly, but only indirectly, in a quotation of Chrysippus. Margherita Isnardi Parente (1990) produced the best study on Diogenianus in her article, *Diogeniano gli Epicurei e la τύχη*. She divides her paper into seven parts, focusing on the art of divination, the polemic against Chrysippus, fatality and fate, the theory of freedom of will, the connection with Diogenianus and the Peripatetic tradition and τύχη in late Epicureanism. As has already been mentioned, all that it is known of Diogenianus comes mainly from two passages in Eusebius' *Praeparatio Evangelica*, IV 2,14 and VI 7,44-8-38. In his 1885 work on Chrysippus, where he collected all the fragments of Diogenianus, Gercke began to consider this specific Diogenianus as an Epicurean, in opposition to the Stoa and the theories of Chrysippus. Such an interpretation would involve contradicting the title which is found in certain codices of Eusebius that introduce both these passages, ΑΠΟ ΤΩΝ ΔΙΟΓΕΝΙΑΝΟΥ ΤΟΥ ΠΕΡΙΠΛΗΘΗΤΙΚΟΥ. From a chronological point of view, Isnardi Parente (1990) suggests that Diogenianus might be a much earlier author than Eusebius, and that he does not dispute Stoic authors close to him, but Chrysippus, who was used many times as a point of reference.

Chrysippus used Homeric verses in order to explain his theory of fate, and, in this respect, he is no different from other authors of the old Stoa. Diogenianus writes that there are not only lines in Homer that attest the importance of fate, but also contrary ones where Homer talks about a man who is responsible for his own destiny. It is difficult to use Homer as a witness, but Diogenianus states that in being a poet, Homer is not obliged to express coherent opinions; he creates a work of μύμησις, hence a poet should not be used as an example of judgements. Margherita Isnardi Parente states that it was not new to talk of the poet as someone who delivers contradictory statements (1990, p. 2429). A first instance can be found in Plato's *Ion* and later in many Epicurean

writers, such as Philodemus, who tries to point out that poetry cannot be a proof in a philosophical debate. Diogenianus describes another aspect of Homer, which is that Homer talks about fate only in accordance with death, the only event in human life against which men cannot rebel and have no choice.

The discussion on death and fate is Epicurean, and both phenomena are recognised by Diogenianus as occurrences to which men should be resigned. Diogenianus believes in man's free will, but he does not eliminate fate and τύχη, even if he attributes a lesser role to them than the Stoic Chrysippus does. He uses the expression παρ' ἡμᾶς, stating that there are events that occur as a result of man's will and, therefore, men can be judged for their actions, thus receiving praise or blame. As Margherita Isnardi Parente (1990, pp. 2434-2437) points out, this is a reference to the Epicurean doctrine because Epicurus describes the actions of men as behaviour caused by themselves, by their ability and willingness to carry out every kind of endeavour without any external influence, thanks to the way their minds work or to the relationship among them. This is important because the Epicurean doctrine needed to provide a strong definition of a causality that comes directly from the actions of men, in order to contrast παρέγκλισις, or, in Latin, the *clinamen*, which refers to movement which takes place without being caused by the atoms in the universe. It is important to explain that what Diogenianus sets out is a criticism of Stoicism from an ethical, not from a physical, point of view. In order to achieve this, in his reasoning he combines the concept of τύχη with an autonomous movement of the soul which contains the source of its own action in itself. Diogenianus' criticism must be seen within the movement against Stoicism that took place in the second century A.D. The author who was used most as a paradigm by the representatives of this movement was Chrysippus¹²⁵.

¹²⁵ Another example of how Chrysippus was used for reference in the polemic against the Stoics is Galen (Weisser, 2012, pp. 175-197) in his exegetical treatise *De Placitis Hippocratis et Platonis*, written in Rome between 165 and 176 (the first six books were written between 162 and 166 A.D. and the last three between 169 and 176 A.D., the times of the first and second residence of Galen in Rome) A.D. He rejects Chrysippus' interpretation of Homer and dismisses "arguments from the poets", allowing an "indulgence in exegetical polemic" (Weisser, p. 176). Galen criticizes Chrysippus' failure to recognise the fact that the lines which he uses in support of his own opinions have the opposite meaning to those he seeks. One might mention that Galen had a knowledge of the exegetic tradition of Homer and used it in his controversy with Chrysippus, trying to provide what for him is the real, truthful explanation of a passage. Galen was ready to "compete for authoritative reading" (p. 195) using exegetical polemics, which were also used by Christian writers when dealing with the Jewish scriptures. This, as Weisser explains, derives from the fact that, even if the Homeric poems did not hold a hallowed status like the Bible, they were a "culturally shared text", which transformed them into an important medium for the discussion of different philosophical points of view. Galen was used as an example of the prominence of the figure of Chrysippus in the Stoic movement and of the prominence given to his interpretation of the Homeric verses, thus demonstrating the fact that criticism of Diogenianus was not isolated.

1.3.2 Chrysippus: fate as a divine element. Personal fate/all-embracing fate, rational determinism of fate, fate, fatalism and cause.

Chrysippus' beliefs have been well described in many articles, in particular his views concerning fate, fatalism and causation, not to mention his use of Homeric lines to explain his philosophical thought.

In his book *Stoic Virtues, Chrysippus and the Religious Character of Stoic Ethics*, Christoph Jedan identifies two different pictures of fate (2009, Chapter 3: Two pictures of fate, pp. 31-58), personal fate and all-embracing fate. In her article *Early Stoic Determinism* (2005, pp. 489-516), Suzanne Bobzien writes that fate organizes the world, that it is always present and that it links future events, which have been decided in advance, before they happen. Personal fate is used to describe how incidents in everyone's life can be pre-ordained, even if the path towards an event may change and, similarly, how the different stages of the world may also be predetermined. The concepts of personal fate and an all-embracing fate are explained by Chrysippus by means of lines from Homer and Euripides. Homer, as we can see from the lines quoted above, depicts personal fate, when a man can live according to different impulses, which will always result in the production of an ever-predetermined action. Many events may occur because we have human capabilities, which are not undermined by external forces that can overcome the resistance of counterfactual possibilities, meaning that we will maintain our capabilities even if for internal or external causes something that we would like to happen does not actually occur.

In *Bivalencia, Fatalismo e Inacción en Crisipo* (2004, pp. 3-27), Ricardo Salles describes the Chrysippean concept of cause by using passages from the *Praeparatio Evangelica*. Chrysippus does not think that every event is determined by a cause; he talks about co-destined events (*confatalia*) (Salles, 2004, p. 15), which means that the future event is tied to the present one only if the two occurrences are predetermined: namely, the future and the event that connects the present and the future. Chrysippus stands in opposition to the fatalists, who believe that everything is determined by reason and who have a non-casual view of occurrences, signifying that the value of an endeavour and its cause bear no relationship, but that everything is controlled, in some way, by a cause.

An explanation of Chrysippus' thought about cause can be found in the *Praeparatio Evangelica*, in the example of the boxing champion Hegesarchus (Eusebius. Édouard des Places ed. 1980. p.17). Hegesarchus is saved at the end of the fight because he uses his arms to defend himself. It is impossible to determine whether he would be saved without using his hands, which is an unacceptable consequence of fatalism. The

fact that he fights and, at the same time, that he is saved means that the present and future are connected, but only because they are undoubtedly linked, a relationship that indicates that these two events are co-destined.

It is in paragraph 8 of Book 6 of the *Praeparatio Evangelica* that lines 32-34 of the first book of the *Odyssey* can be found. Chrysippus' thought is conveyed through the criticism of Diogenianus, who analyses the Chrisippean use of many Homeric lines in his attempt to describe the way in which every action occurs in a way that is connected to necessity and fate. Chrysippus uses these lines to express both the opinion that acts are linked to fate and the opinion that events are also caused by men. Certain deeds will occur according to fate, but, in agreement with Diogenianus, Homer is to be considered an opponent of Chrysippus since he says that many accidents happen in line with our behaviour. However, Diogenianus thinks that a poet should not be used as an example for a theory because he is not bound to tell the truth. Moreover, a poet can express contradictory remarks as we can read in Eusebius, *Praeparatio Evangelica*, 6.8.7: καὶ τῷ ποιητῇ μὲν, ἅτε οὐ τὴν ἀλήθειαν ἡμῖν τῆς τῶν ὄντων φύσεως ὑπισχνουμένῳ, ἀλλὰ μιμουμένῳ πάθῃ τε καὶ ἤθῃ καὶ δόξας παντοίας ἀνθρώπων, ἀρμόττον ἂν εἶη καὶ τὰ ἐναντία λέγειν πολλάκις· φιλοσόφῳ δὲ οὔτε τὰ ἐναντία λέγειν οὔτε ποιητῇ δι' αὐτὸ τοῦτο χρῆσθαι μάρτυρι.

1.3.3 Other authors who quote line 7 and lines 32-34.

In the “Comprehensive Odyssey” it is possible to list and check all the other authors that cite lines 7 and 32-34, and here we can discover that they include not only grammarians and philosophers, but also lexicographers and commentators, not to mention a Latin author, namely Aulus Gellius, who indirectly cites Chrysippus.

As was previously pointed out, the canonization of the Homeric text helped understand and create the grammar of the Greek language. We can see this if we take a look at the list of secondary sources, which is why it is possible to find not only philosophers but also grammarians among the secondary sources. This is a list of the secondary sources for line numbers 7 and 32-34:

Line 7:

Aristonicus *De signis Odysseae*, 1 B.C.-A.D. 1

Maximus Tyrius *Dissertationes*, A.D. 2

Hesychius *Lexicon*, A.D. 5/6

Porphyrius *Quaestionum Homericarum ad Odysseam pertinentium reliquiae*, A.D. 3

Diogenianus, Chrysippus, Eusebius *Praeparatio Evangelica*.

Line 32:

Diogenianus, Chrysippus, Eusebius *Praeparatio Evangelica*.

Heraclitus *Allegoriae*, A.D. 1?

Cyrillus *De adoratione et cultu in spiritu et veritate*, A.D. 4-5

(Pseudo) Plato *Alcibiades ii*, (5-4 B.C.)

Aulus Gellius *Noctes Atticae*, 113/130-169 A.D.

Scholia in Aristophanem *scholia in Pacem*

Stobaeus *Anthologium*, A.D. 5

Hierocles *Fragmenta ethica*, A.D. 2

Maximus Tyrius *Dissertationes*, A.D. 2

Line 33:

Maximus Tyrius *Dissertationes*, A.D. 2

Scholia in Homerum *scholia in Iliadem*.

Aristonicus *De signis Odysseae*, 1 B.C.-A.D. 1

Cyrillus *De adoratione et cultu in spiritu et veritate*, A.D. 4-5

Stobaeus *Anthologium*, A.D. 5

Scholia in Aristophanem *scholia in Pacem*.

Aulus Gellius *Noctes Atticae*, 113/130-169 A.D.

(Pseudo) Plato *Alcibiades ii*, (5-4 B.C.)

Chrysippus, Diogenianus, Eusebius *Praeparatio Evangelica*.

Line 34:

Porphyrius *Quaestionum Homericarum ad Iliadem pertinentium reliquiae*, A.D.

3

Stobaeus *Anthologium*, A.D. 5

Methodius *Symposium sive Convivium decem virginum*, A.D. 3-4

Heraclitus *De incredilibus*, post 4 B.C.?

Apollonius *Lexicon Homericum*, A.D. 1-2

Aelius Herodianus *De Iliadis prosodia*. A.D. 2

Eustathius Thessalonicensis *Commentarii ad Homeri Odysseam*, A.D. 12

Eustathius Thessalonicensis *Commentarii ad Homeri Iliadem*, A.D. 12

Scholia Aristidem *Scholia in Aelium Aristidem*.

Hesychius *Lexicon*, A.D. 5/6

Aelius Herodianus *De Odysseae prosodia*, A.D. 2

Aristonicus *De signis Odysseae*, 1 B.C.-A.D. 1

Chrysippus, Diogenianus, Eusebius *Praeparatio Evangelica*.

Hierocles *Fragmenta ethica*, A.D. 2

Scholia in Homerum *Scholia in Iliadem*.

Aulus Gellius *Noctes Atticae*, A.D.113/130-169

Cyrillus *De adoratione et cultu in spiritu et veritate*, A.D. 4-5

From this list, we understand that lines with a similar meaning are cited together by the same author or separately in different works by the same author. There are works by commentators, philosophers, lexicographers and Christian writers, who are mainly authors of the first centuries A.D. If all the grammarians and lexicographers are eliminated, it is possible to see that most of the sources use these lines as an example within their discussion on fate and human destiny, either from a philosophical point of view or from a religious one, the latter particularly in the texts of Methodius and Cyrillus. There are a number of sources that, instead of revealing an interest in a discussion of destiny, focus their attention on the expression ὑπὲρ μόνον, which can be read either as two words, meaning “fate” or “destiny”, or as one word, as an adverb. Attention must be paid to whether the word should be written as a preposition followed by a noun or as a compound of the preposition and the noun. This word can be found a second time in line 35, acting as the principal focus of the secondary sources available for that specific line.

1.4 Conclusion.

In conclusion, what deduction can be drawn from this analysis of Homer and of some of his sources? In one perspective, it is obvious that these authors cite Homer within a philosophical debate concerning Stoics and Epicureans with their views of destiny, fate and free will. However, what seems to be a normal dispute between philosophers is found here in a major discourse on Christians reading and their use of ancient sources, including Homer. Homer, who was seen as a canonical text, along with the Bible, first for the history of an entire group of cities and then for the education of their inhabitants, was used both as the basis for the growth of grammatical analysis and also as an authoritative voice supporting philosophical concepts.

This analysis can be carried out more directly by using this project because one can see on screen a flow of sources directly, from one century to another, with no need to look at different editions or draw conclusions from reading commentaries in printed editions. Our example shows how it is possible to find in the *Odyssey* lines which describe fate and destiny, but the question that arises is how they can be traced to other

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authors, what this says about the use of Homeric lines that are conveyed by different authors in different centuries and how Homer was seen by them.

Appendix 2 Line 1, πολύτροπον and πολύκροτον.

2.1 Introduction.

In Chapter 5.3 we described the case study of the variant ‘πολύκροτον’ in the first *Odyssey* line, focusing our attention on the *Hippias Minor* and Antisthenes and how they could be encoded following the CTS/URN architecture. We stressed that we are dealing with two aspects, Homer’s *Odyssey* and secondary sources: Homer and Homer as read by others. We stated (Chapter 5.1) that it would be difficult to keep these two aspects separate, mainly during the collection of the variants, which need to be understood in their contexts, i.e. the texts in which they are to be found. This easily leads to a shift in the focus towards an analysis of the reception of Homer. As we believe that this second path could be detached from the main editorial one, which is the foundation of this dissertation, we decided to explain here the exhaustive analysis we performed in analysing this variant, since it is not directly a part of the study effected for the proof of concept, at least not in so many details, but stems from it.

The words above are used as an example to show what it will be possible to find in the “Comprehensive Odyssey” concerning the crucial word that describes Odysseus for the first time in the *Odyssey*, even before his actual name is mentioned. What we are attempting to show here is the kind of analysis this edition will allow a scholar to effect. The question will be raised as to whether the secondary sources selected for this edition permit only a philological examination or whether they also allow for much broader research into the meaning of the two words, in order to explain the differences between them. As has been previously explained, the secondary sources presented in this edition were collected through an analysis of the printed critical editions available, together with a parsing of each line in the TLG. Each line was sought in its entirety, or divided into parts, in all those cases where the examination of the printed critical editions clarified that there were variants in that line. By carrying out this kind of search for each line, it was possible to discover not only the sources, which contained the complete line, but also the sources which contained the line with the variant. In this specific case, there are sources where it is difficult to decide what to encode or at least how long the passage encoded should be. This is because even if the entire line is literally quoted only at one point, there are nearby lines in the text where the word ‘πολύτροπον’ is used, but not as a citation of that line, merely as a word in a description or as part of a discussion on a specific passage. In our instance, two passages will be compared, one

from the dialogue in Plato's *Hippias Minor* and the other from a fragment of Antisthenes. In both extracts the authors are involved in a discussion on Odysseus and, even if they are not quoting Homer directly, it can be inferred that they are referring to the definition of Odysseus given in the first line of the poem. In order to understand better what is meant here, the following pages will briefly present the secondary sources available in the "Comprehensive Odyssey", together with a concise assessment of the issue of 'πολύτροπον' and what our edition offers.

From the point of view of an analysis of the concepts of work, text and book, which were explained in the third chapter, this line is important because it helps understand and question the methods according to which certain authors should be cited. It is primarily a problem of consistency. Secondly, this line can also help to elucidate the problem of which secondary sources to include and whether there are sources that will appear only because they can be found in the scholia. We have just said that the secondary sources used in this project were collected from the printed critical editions available and the TLG, but in the case of 'πολύτροπον' and 'πολύκροτον' one ought to ask whether this is sufficient. While reading a series of articles on πολύτροπος, our attention was drawn to Plato's dialogue *Hippias Minor*, in which a philosophical argument concerning this term develops, connecting a comparison between Odysseus and Achilles, as expressed by Socrates and Hippias. In this work, the first line of the *Odyssey* is not quoted directly, but it is clear that Odysseus is connected with πολύτροπος in the same way as he is in the *Odyssey*. Should this text, which is so important for the discussion of the connotation of πολύτροπος, be encoded, at least where the word is found, or should it not be encoded at all? Furthermore, the same criticism of the opinions expressed by Hippias can be found in the *Quaestionum Homericarum ad Odysseam pertinentium reliquiae* by Porphyrius, which reports the thought of Antisthenes, and can be read either in the scholia or in the secondary sources. This raises some interesting questions, such as whether it is possible to deal differently with this text and, if so, how this can be done, and, again, whether the text ought to be considered a work of Porphyrius, a work of Antisthenes or part of a scholium of the *Odyssey*. In this way, what the user/reader is reading will be different every time, but this cannot always be the case. It depends on how the editor of these different texts decides to proceed in his critical edition. Sometimes an editor will publish a new digital edition, while at other times he will adopt another edition, and the only way to distinguish them might be in the critical apparatus. Our attention will now focus on the importance of these secondary sources in order to understand the two words

‘πολύτροπον’ and ‘πολύκροτον’ and also which text or edition should be chosen for encoding in the “Comprehensive Odyssey”.

2.2 Odysseus πολύτροπος.

The word πολύτροπος is a word used in the proem of the *Odyssey*. It is the first description of Odysseus provided by the poet, even before the protagonist is named, and it is a word that is repeated only once more in the entire poem, namely in line 330 of Book X. In his analysis of the proem of the *Odyssey*, Pietro Pucci (1998) describes it as serving as a parallel to the proem of the *Iliad*, in its depiction of the figure of Odysseus, a man burdened with many troubles, while in the *Iliad* the proem refers to Achilles. A major difference can be found between these two texts, because in the *Iliad* the main character is not a man, but his anger, μῆνιν, while in the *Odyssey* the protagonist is a man, the ἄνθρωπος πολύτροπος.¹²⁶ The parallelism between Achilles and Odysseus is one important feature of the proem, which will be discussed later, but what is of greater interest here is the meaning of the word πολύτροπος.

The following pages will include a description of the meaning of πολύτροπος via an account of the secondary sources available in the “Comprehensive Odyssey”. A first outline of the meaning and origin of this word can be drawn from Chantraine’s etymological dictionary. The word is composed of the adjective πολύς and the noun τρόπος, “aux milles tours, plutots que aux nombreux voyages, cf. Pl. Hipp. Min. 364 e, mais en Odyssey 1,1 il y a peut-être une ambiguïté voulue; dit d’Hermes (H. Hermes 13, etc), <versatile> (Thucydides. 3,83), <aux forms diverses> (Thucydides, 2,44, etc) ...”. What arises from reading this entry is that πολύτροπος is a word used not only for Odysseus but also for Hermes and can be related to all the other epithets for the hero that are a compound of the word πολύς. W. B. Stanford (1950) describes all these composites, stating that there are eight words related only to Odysseus of the “ethical” πολυ- words in Homer, “-αινος, -κερδεΐη, -κερδής (νόος), -κηδής (νόστος) -μήχανος, -πικρα, (adverbially), -τλας (but cf. -τλήμων in B and -τλητος applied ἅπαξ to

¹²⁶ The proem of the *Odyssey*, that of the *Iliad* and their similarities have been analysed by other authors such as van Groningen (1946), Basset (1923), Kahane (1992), Walsh (1995), Nagler (1990), Pasquali (1951) and Nagy (1990). Frequently, the most recent analyses start with an acknowledgement of Basset (1923, pp. 340-341) that indicates similarities: 1) order of words and syntax, 2) reference to the concept of large-vast with the use of the root of πολύς, 3) description of sorrows, 4) the narration returns at the beginning after the end of the proem, 5) omission of information in both proems (where the μῆνιν occurs and who the ἄνθρωπος is). Furthermore, they dedicate attention to the subdivisions described by van Groningen (1946, pp. 1-2): “...invocation of the Muses, indication of the subject and indication of the beginning of the tale”. In both these structures, the word πολύτροπος links the object of the poem to the following parts of the proems by providing a thematical characterisation (van Groningen 1946, p.7, and Basset, 1923, p. 340).

unspecified γέροντες), -τροπος.” (p. 108). Many of these are shared with other heroes, Nestor, Achilles and Hector, and the more personal ones are more specific to the *Odyssey*, πολυκερδής, -κηδής, -πλαγκτος, -τλήμων, and -τροπος. It must be stressed that many of these adjectives concern versatility and variety. Therefore, Odysseus is described as a man who has many turns, travels and toils, who, throughout his wanderings, is always trying to save his own life and return to Ithaca. The word πολύτροπος literally means that Odysseus is a man “of many journeys”, but, metaphorically, it could also mean a man “of many turns of mind”.

The last point discussed by Pucci in his article has to be mentioned here. He writes that in the course of the whole poem the poet spares no effort to save Odysseus from death. This becomes very clear in the proem where there is no mention of any specificity concerning the name of the ‘ἄνδρα’, thus eliminating his fame, his κλέος. In her book about Odysseus, Corinne Jouanno (2013) dedicates part of a chapter to “Ulysse dans l’espace de l’oubli” (pp. 32-38). Here she explains that at the beginning of the *Odyssey* Odysseus is invisible and forgotten, the most invisible of men, mainly during the first four books, those about Telemachus’ journey. During the return journey, Odysseus is always on the verge of losing his κλέος, which is what a hero cares most about, and refers to a κλέος after death, which means not being forgotten by everyone when one dies. The episode of the Cyclops illustrates that as long as Odysseus conceals his identity, he manages to escape safely from Polyphemus, but as soon as he recovers his heroic spirit and reveals his name, attracted by κλέος, Poseidon attacks him, making him risk his life again. Bassett (1923, pp. 341-342) describes the proem as the place where the focus shifts entirely to Odysseus, the “Ἄνδρα” who is alone because all his companions are dead. In his opinion, the structure of the proem contributes to making the reader/listener aware that the story which follows is about a lonely ἀνὴρ πολύτροπος, who is the last of the heroes of the Trojan war still out at sea and who has lost all his companions. Goldhill (1991, pp. 3-4) also emphasises that Odysseus is very careful to disclose his identity gradually when he returns to Ithaca, as a way of re-establishing his rule over his kingdom. “Ἀνὴρ” is the word that helps to conceal the κλέος of Odysseus until he is ready to display it again. This happens on two occasions: the first with the Phaeacians, and the second when Odysseus is again among his own people of Ithaca. Πολύτροπος is the adjective that expresses the ability of this ‘ἄνθρωπος’ to conceal himself. The word ‘ἄνθρωπος’ is described by Kahane (1992, p. 115) as “carrying a subliminal reference to Odysseus”. In his opinion, there are certain instances of the word ‘ἄνθρωπος’ in the *Odyssey* as a “pattern-marker” (Kahane, 1992, p. 119), an accusative first word of a

line, where the word recalls the proem. The knowledge of whom the word ‘ἄνῆρ’ refers to is inferred from the knowledge that the poem is the *Odyssey*, the story of Odysseus. Kahane (1992, p. 117) describes this kind of reference with the word ‘deixis’, by this stating that it is possible to infer from the context to whom the word ‘ἄνῆρ’ refers¹²⁷. Nagy (1990, pp. 33-34) points out that the key word in the pattern of the first line is πολύτροπος, from both a phraseological and a metrical point of view. He compares the structure of the first line with that of Book Ten, line 330. In both cases the word πολύτροπος connects two sentences, but it is also the seat of a metrical break. Nagy’s description is connected to a formulaic description of Homeric lines, both from a diachronic and from a synchronic point of view. Between the two meanings expressed above, of many journeys, of many turns, πολύτροπος is a word that may also help describe Odysseus as a master of concealment and disguise, and this is the term used to enact this camouflage. Furthermore, πολύτροπος is the word that connects Odysseus to the god whose characteristic is that he is capable of lying and being deceitful, namely Hermes.

The poet identifies Odysseus by using the word πολύτροπος only on one other occasion in both poems, and it is to be found in line 330 in *Odyssey* X. In this passage, Circe describes Odysseus as πολύτροπος. She introduces Hermes as the one who informed her of his arrival. Hermes is also the one who had come to rescue Odysseus from Circe by giving him an antidote against her potion. It seems that the multiformity of the hero is of the same nature as that of Hermes, as is described in the *Hymnus ad Mercurium* in lines 13 and 439:

καὶ τότε γείνατο παῖδα πολύτροπον, αἰμυλομήτην,
ληιστῆρ’, ἐλατῆρα βοῶν, ἡγήτορ’ ὀνείρων,
νυκτὸς ὀπωπητῆρα, πωληδόκον, ὃς τάχ’ ἔμελλεν
ἀμφανέειν κλυτὰ ἔργα μετ’ ἀθανάτοισι θεοῖσιν

νῦν δ’ ἄγε μοι τόδε εἰπέ, πολύτροπε Μαιάδος υἱέ’
ἧ σοί γ’ ἐκ γενετῆς τάδ’ ἄμ’ ἔσπετο θαυματὰ ἔργα
ἧέ τις ἀθανάτων ἧὲ θνητῶν ἀνθρώπων
δῶρον ἀγαθὸν ἔδωκε καὶ ἔφρασε θέσπιν ᾠοιδήν; (ed. Vergados, 2013)

¹²⁷Kahane’s article (1992) provides a detailed description of the use of the word ‘ἄνῆρ’ in the *Odyssey*, proposing four categories: accusative at the beginning of a line with reference to Odysseus, accusative at the beginning of a line with reference to another character, accusative not in first position and not referring to Odysseus, use of the word in connection to Odysseus, but in various positions and cases.

It must be remembered that such a critical operation should be performed with informed caution. It is difficult to look for similarities between the *Odyssey* and the *Hymn to Hermes*, just as it is for every other epic text. The main reason is chronological because, despite being called Homeric, the Hymns were written later than the Poems. Chronology places the *Hymnus ad Mercurium* in the late 6th or the 5th centuries BC, as Sarah Iles Johnston (2002, p. 109) and Vergados in his edition (2013) both state. Vergados is even more specific when he stresses that archaeological material¹²⁸ has pinpointed this at the end of the 6th century B. C.. Even if there are difficulties in comparing the two texts, the *Hymnus ad Mercurium* is important, as it is one essential text where it is possible to find a comparison between Odysseus and Hermes¹²⁹, and every possible text that holds the word πολύτροπος in a way that might explain its meaning regarding Odysseus might be of interest here, where the stress is in understanding the difference between πολύτροπος and πολύκροτος. Here this passage tells how the meaning of the word πολύτροπος might connect Odysseus and Hermes and how its meaning in the *Odyssey* might be also found in the later text, the *Hymnus*. In his commentary on the *Hymnus*, Vergados (2013, p. 232) points out that the double meaning of the word πολύτροπος, namely “clever” and “much travelled”, could also be evoked in the *Hymnus*. This is because the lines present a description of Hermes undertaking various journeys from the Underworld up to Mount Olympus and a connection is formed through the use of adjectives that describe the μῆτις, namely the skill and ingenuity of both Hermes and Odysseus¹³⁰ (Vergados, 2013, pp. 232-233) A comparison between the two compounds πολύτροπος and πολύμητις tells us more about how the hero is perceived. Τρόπος means “turn”, “direction”, “way”, but also “manner” and “character”, while μῆτις means “wisdom”, “skill”, “craft”, so πολύτροπος is a less specific, more general term because it can cover a broader spectrum of meanings, and not only those with a positive meaning. The example of the Homeric hymn just

¹²⁸See Vergados (2013), Introduction, Chapter 7, Date and place of composition, pp. 130 – 153.

¹²⁹See Valenti 2014, p. 46, note 109, where she stresses: “Concerning the relationship between Odysseus, Hermes and Apollo, see Citati, *La Mente Colorata, Ulisse e L’Odissea*, in P. Citati, *La civiltà letteraria europea. Da Omero a Nabokov*, Milano, 2005, pp. 20-38”.

¹³⁰An account of the travels of Hermes and of his μῆτις can be found in an article by Majorel (2003). Hermes is making a trip from darkness to light, from darkness to recognition. His μῆτις relates him to Odysseus, the man with whom he is more closely connected and the man whom he helps most. Majorel stresses that Hermes is the god who unites day and night, the sacred and the profane, balancing the two tensions present in the Greek religion, the Apollinean and the Dionysiac. He is the god who feels closest to man but who also wanders in dreams in the night. (Majorel, 2003, pp. 53-81)

described, helped understand how the use of the word πολύτροπος to describe Hermes does not end with Homer¹³¹.

Jenny Strauss Clay (1983) reports that πολύτροπος, at least for the modern reader, is a term which remains ambiguous, an expression which could be considered “both less specific and less emotionally charged” (1983, pp. 30-34) than other epithets for Odysseus, such as πολυτλήμων, πολύτλας and πολύπλαγκτος. Odysseus is both a man who has travelled much and a man who has experienced innumerable sufferings. The reference to this adjective, to this man who is “versatile” (Di Benedetto, 2010, p. 57, p.153), is kept hidden by the poet until line 21 and disclosed only by means of a description of Poseidon’s deeds attempting to prevent Odysseus’ return.

Furthermore, it is important to remember, as Pucci (1987, pp. 149-150) writes, that Odysseus, even when he comes back to Ithaca, will always be someone who is never returning but always going away to pursue another ending, following the prophecy of Tiresias. The constant use (or perhaps, more aptly, the non-use) of his name is connected to his constant return and wandering. Pucci believes that he never stops in the same place because he is trying to defeat death, but he is not immortal; he is only a human being with the will never to stop and die. On the contrary, in the *Iliad*, the story of Achilles is the story of a man who will achieve a heroic death, who does not hide and wander but faces his fatal destiny.

2.3 Odysseus and the logic of the psyche, a new perspective.

The description in the previous paragraph follows the notion of Odysseus as a man who is trying to be saved from death and of his concealment of κλέος as one way that could help him to reach this goal. It should be stressed here that, even if this is the most common interpretation of the prologue and of the whole poem, there is another opinion, expressed by Veronica Ariel Valenti in her book of 2014¹³², which is that it is not possible to assert that the primary goal of Odysseus was to avoid death.

She starts her reasoning from her own, different interpretation of versus five of the first book of the *Odyssey*, where she believes that ἀρνύμενος ἥν τε ψυχὴν καὶ νόστον ἐταίρων means “nel tentativo di accrescere l’anima sua e assicurare ai compagni

¹³¹ Vergados stresses that the connection between Hermes and Odysseus is also expressed by the circumstance that both are liars and entertain a close relationship with the profession of poet. Furthermore, Odysseus’ maternal grandfather, Autolycus, was a very skilled thief, having skills similar to those of Hermes. It is also possible that some episodes in the *Hymnus* are related to passages in the *Odyssey*, such as the description of Maia’s cave and the Cattle of the Sun. (cf. Vergados, 2013, pp. 65-67)

¹³²For a review of the book of Valente see the review of Andreassi in BMCR 33.1.2016.

il ritorno¹³³” (Valenti, 2014, p. 19). In her book, she depicts the personality of Odysseus as one following the logic of the psyche rather than the logic of κλέος. It means that there is a contrast between a life pursued following the psyche and one that adheres to the genealogic sphere of κλέος, ὄνομα and γένος. The κλέος is connected with your name and your genealogy, it means that it connects ancestors and descendants in a continuum and is described as asymmetric. On the contrary, the logic of the psyche is seen as symmetric. The κλέος is mostly seen in the *Iliad* as a hierarchical unity where there are differences between the society of the Greeks and the outer world of the barbarians. What is important in this logic is the figure of the father who is the owner of the κλέος and who will transmit it to the following generation. On the contrary, the logic of the psyche is found in every situation in the *Odyssey* and could be described in Odysseus’ wandering into outer paths and spaces both geographically and with his language. It seems that Odysseus can understand a different language that might be called the language of the Gods. Odysseus does not want to say his name, not because he wants to save himself, but because he wants to draw the line between the established logic of the κλέος and the new one he embraces during the entire course of the poem. He does not fight the κλέος, he adheres to it every time it is deemed necessary, in order to describe his choice as a free one.

The notion of living following one’s psyche is connected to the notion of sight by the word εἶδον. This indicates that Odysseus wants to see and learn by looking at the thoughts of many men and at their sorrows. Odysseus is independent of any other person who, by watching him, becomes a witness of his κλέος; he is able to sing about himself, not needing a singer performing his art. Odysseus knows and sees like a singer, but not through a contact with the divine, but by means of his pertaining to the logic of the psyche to which seeing pertains. Odysseus needs to move, to leave all the static places like Ogygia and go to places where there is a connection between living and seeing, such as when he sees Nausicaa, who is described as a vital object, depicted with an array of words connected to life. Nevertheless, Odysseus returns to Ithaca, to his former life, where the notion of κλέος is still predominant and he adheres to it. His return to a notion he does not follow is a signal that he does not follow the logic of the psyche due to an inability to live and work within the logic of κλέος. There is also another reason why, following Valenti, Odysseus needs to obey the κλέος while in Ithaca: he needs not to break the genealogical tradition and, in this way, cause pain to anyone who has been waiting for him, i.e. his son, his father and his wife. In this way he

¹³³“trying to increase his soul and ensure his comrades’ return (my translation).”

also stresses that following his psyche did not cause any harm to anyone who was dependent on him.

In conclusion to her analysis of Odysseus as a man of the psyche, Valenti stresses that it is an ever-growing dynamic which does not let the story of Odysseus end at the close of the *Odyssey* with his reunion with Penelope, but makes us aware that there will be a further trip to an unknown place where there is the winnowing-fan is, the ἀθηρηλοιγός. The *Odyssey*, therefore, does not have a conclusion because it follows the never-ending wanderings of its main character who follows his polytropia even from the way he names himself to Polyphemus, οὔτις, no-one/nobody. Valente stresses that there is a dualism between how this word is understood by someone who has a divine origin, Polyphemus, and others who are only human, the Cyclops. The first understands Οὔτις as a first name, following the logic of the psyche and a language that might be called the language of the Gods, while the others understand it only as a pronoun following the logic of κλέος.

The author uses her whole book to describe Odysseus so that one can understand that he moves according to a new logic. First she studies the etymology of the word οὔτις, stressing that it could be connected to a word linked with water, originating in Thrace. It means that the logic of the psyche can attribute more meanings to a word, that is to say, no-one and river-water, following the polytropic nature of Odysseus. She describes what happens to Odysseus as a kind of fight between a part destruens and a part construens (Valente, 2014, p. 108), by this meaning that Odysseus is destroying his identity connected with the logic of κλέος, affirming a new logic and a different language, the logic of the psyche and the language of the Gods, where he is Οὔτις/Utus in the Thrace root which is connected with water. Odysseus is not talking about obtaining another name and making himself, under this name, adhere to the logic of κλέος. Valente means that Odysseus is entering another realm, which could be described as divine, fluid and connected with water (Valente, 2014, p. 114). Odysseus is capable of living in the realm of κλέος and of obeying its requests, but he decides to follow the divine component which lies within the logic of the psyche, which he can understand.

In conclusion to her analysis of the figure of Odysseus and his polytropia, Valente defends him against the accusations that we find in subsequent authors, such as Sophocles, where there is a link with the word ψεῦδος, lie. All Odysseus' talk and behaviour, from his choice of words to his use of the third person when talking about himself, should be seen as part of his living according to the logic of the psyche.

Listening to Odysseus can be understood only in this way; if one does not, his behaviour and speech might be found disturbing for anyone who continues to follow the logic of κλέος. Deceit is seen as an *accidens* in the definition of Odysseus, a description of his polytropia when encountering the reality that surrounds him. Odysseus renounces his specific name and assumes more than one identity because it is the only way he can return to Ithaca, since he is unlike other heroes and plays on his polytropic self. In Ithaca, he has to regain consciousness of his name in order to continue the line of the γένος, but this is only a step forward in his never-ending travels that will end only in the place of the winnowing-fan. This word is pronounced by the prophet Tiresias and, for this reason, it does not describe a specific location but recalls a link between two worlds, the human and the divine, and it is a neologism, a word that expresses yet does not express, in a language that follows the logic of the psyche. The *Odyssey* is a continuum, a narration that never ends, deploying the notion of the psyche. The *Odyssey* is not an ending, a return that ends in death, but only a never-ending return, which celebrates the increasing importance of the psyche. Odysseus was the man inside the wooden horse, inside the cave of the Cyclops, inside the Phoeacian ship and in the cave in Ithaca, where he lies when he returns.

Valente (2014, p. 145-148) concludes that this return is necessary to restore life to all the inhabitants of Ithaca, to bury his past self that was connected to the κλέος, showing that he can live within this logic. Ithaca is the place where his other static self will come to life again in the first person, in order to be put aside forever. The *Odyssey* is a trip of a new Odysseus that detaches himself from the old one attached to κλέος in the *Iliad* and, as the poem progresses, is more and more capable of cutting the link with his old self. Odysseus can come to Ithaca, the place where this dead self can lie down, where he can re-establish the order broken by a degenerate κλέος deployed by the Suitors. In this way, he can offer his son Telemachus a choice between applying a correct version of the logic of κλέος or following him in his new polytropic logic of the psyche. The man πολύτροπος has to return in order to mourn the former Odysseus, before being allowed to proceed to his future wanderings.

2.4 Πολύτροπον in the “Comprehensive Odyssey”.

This analysis of the term πολύτροπος can be effected by using the list of secondary sources in the “Comprehensive Odyssey”. When one looks at the sources for the first line of the *Odyssey*, it can be seen that there are some that cite only the beginning of the first line and not the second half, where the word πολύτροπος is to be

found. In our edition, there are only those that quote the first line directly, and there are no works that lack a specific quotation of the verse, but merely quote the word *πολύτροπος* in connection to Odysseus. Many of these sources do not pose any problem in terms of how they are to be understood, and they can be divided between passages that deal with the first line because they describe the meaning of *πολύτροπος* and passages that mention the line in order to explain a grammatical pattern. The following paragraphs will include a short survey of the places where it is possible to find the term *πολύτροπος* and of its meaning. This survey will follow the aforementioned division, starting with passages that describe the meaning of *πολύτροπος* and continuing with excerpts that deal with a grammatical explanation for which the verse is used as an example.

In Polybius' *Historiae*, also quoted by Constantinus VII Porphyrogenitus *Excerpta de sententiis*, the focus is on the combination of *πολύτροπος* with the description of a man who saw many cities, many people, and who suffered, someone who had first-hand experience. In one of the *Dissertationes* by Maximus Tyrius, *πολύτροπος* refers to a man who saw all the elements of the heavens and the earth, of the sun, the animals, the stars, the sea, the rivers and the air. He also perceived all the human feelings which are connected to the state and to private matters, war, peace, economy, weeping, laughing and lamenting. Gregorius Pardus, in the *De apto et solerti genere dicendi Methodus* (*Περὶ μεθόδου δεινότητος*), in a paragraph about pity and marvel, cites the Homeric proems along with the first line of the *Odyssey*, which is connected to *οἶκτος*, pity, and the first line of the *Iliad*, which is connected to marvel. In the *Etymologicum Magnum*, the term *πολύτροπος* refers to someone who can use words as a good rudder, someone who addresses his intelligence and his intentions to many events and who is an expert in many turns. Himerius in *Man and the World*, a fragment of an oration, connects the adjective *πολύτροπος* to the meaning of versatility and talents, with which the person can shine in the world, avoiding darkness and oblivion.

In the *Dialogus de verborum Constructione* Maximus Planudes focuses on the word *πολύτροπος* as an adjective and on the construction of a sentence with two verbs, one related to a Muse and the other to man. Pseudo Plutarch, in *Vita Homeri*, and Alexander Rhetor, in *De Figuris*, evaluate the shift of cases from the accusative to the nominative, and in this example, too, there are the beginnings of both the *Iliad* and the *Odyssey*, as if they were inseparable. In the *Scholia Londiniensa* of Dionysii Thracis' *Ars Grammatica* and in the *Rhetorica Anonyma De Figuris*, which are almost identical, the authors quote Homer when describing the meaning of *τρόπος* as something that

causes a change in meaning with metaphors, allegories, catachresis, synecdoche, metonymies, hyperboles, enigmas, hyperbatons, irony, antonyms, antiphrasis, metalepsys and onomatopoeia. In *De Compositione Verborum* Dionysius Halicarnassensis writes that if there is a law of nature that rules the composition of sentences, names should be placed before verbs, as in some Homeric lines, for example in the two proems. In the *Noctes Atticae*¹³⁴ when talking about the verb “inseco” and how it is spelt without the letter ‘u’, Aulus Gellius quotes the first line of the Latin translation of the *Odyssey* by Livius Andronicus, followed by the Greek words¹³⁵.

2.5 Πολύκροτος in the “Comprehensive Odyssey”.

The above paragraph provides a short description of the secondary sources which cite the adjective ‘πολύτροπον’. By looking at the “Comprehensive Odyssey”, it is also possible to list all those that, instead of using the adjective πολύτροπος, use πολύκροτος, ον, which means (Liddle-Scott-Jones): “ringing loud or clearly, ... sly, cunning, wily, v.l. in Od.1.1...”. Πολύκροτος is another compound of the adjective πολύς. The name κρότος signifies “rattling noise” and, in Chantraine’s dictionary, it is defined as “coup qui résonne avec les mains, les pieds, des rames, coup sure des objets de cuivre, etc.” Chantraine gives no description of the compound πολύκροτος; there are other compounds, and they all incorporate a meaning connected with sound, as the derivative κρόταλα has, “castagnettes, claquettes, crécelles”. “A κρότος répond un present κροτέω qui semble plus ancien et plus fréquent que κρότος et qui serait donc un intensif plutôt qu’un denominatif: <heurter, faire résonner>...<frapper un objet qui résonne plus ou moins>”. One can also find an adjective κροτητός “qui est frappé, qui résonne”. Chantraine’s etymological point of view is that “κροτέω, verbe exprimant un choc, etc. un bruit, fait penser à κομπέω, κοναδέω, βρομέω, etc. Le substantif κρότος doit être postverbal. ...”

¹³⁴ Aulus Gellius, 1967-1978-1998, *Noctes Atticae*, ed. René Marache-Yvette Julien, Aulu-Gelle Les Nuits Attiques Tome I-II-IV, Les Belles Lettres, Paris.

¹³⁵ This passage by Gellius reports the translation of Livius with the form ‘uersutum’ for πολύτροπος and not ‘uorsutum’ as it stands in Flores’ edition (2011). It is clearly stated by E. Flores in his edition of the fragments of the *Odusia* (2011), by A. Perutelli (2005) and, among others, also by Korsch (1868) and Düntzer (1869), that the word ‘uersutum’ cited by Gellius is not admissible in the text of Livius Andronicus. Livius Andronicus uses a language enriched with archaic and obsolete forms, as one can see in the word ‘insece’, and the form ‘versutum’ appeared only later, around 150 a. C. (Perutelli, 2005, p. 162) The archaic form of this adjective is ‘vorsutum’, as found in Plautus. The first line of the *Odusia* in Aulus Gellius (ed. René Marache-Yvette Julien) is ‘uirum mihi, Camena, insece uersutum’. In the Flores edition it is ‘Virum mihi, Camena, insece uorsutum’. ‘uorsutum’ is a conjecture by Perutelli, which is rejected by Kruschwitz (2008). For a review of the Flores edition and his point of view on Roman literacy and readership in the III sec. B. C., see J. Hawke (2012). For other editions of the *Odusia* and a commentary see S. Mariotti (1986) and W. Morel, J. Blänsdorf, K. Büchner (1976, 4th ed. rev. 2010).

The “Comprehensive Odyssey” includes quotations where this adjective is used in the accusative in lieu of ‘πολύτροπον’. They are the *Commentarii at Homeri Odysseam* by Eustathius, the *Scholia Vetera in Nubes (Aristophanes)*, the *Suidae Lexicon* and Hesiodus’ *Fragmenta*. The best source for an analysis of the word πολύκροτος is an article by Alessandro Pardini (1991), which focuses not on Homer, but on Callimachus, *Aetia*. Fragment 67 line 3. (T67-75.) (Acontius et Cydippe) (ed. Annette Harder, 2012). The author tries to prove the extent to which the Homeric variant is ancient, in order to understand the meaning of the word within this Callimachean fragment.

2.5.1. Eustathius, *Commentarii ad Homeri Odysseam*.

Eustathius reports the episode when Circe calls Odysseus πολύτροπος, and he describes the word as meaning “δόλιον καὶ φρόνιμον”. Eustathius argues in the following paragraphs that to praise this kind of man is similar to describing what the poet says about the nightingale, namely that when he escapes he has a many-toned voice. Thus, someone writing a later parody wrote ‘πολύκροτον’, meaning active in mischief but not overtly. Eustathius says that the expression derives from the κρόταλος of the comedian and from the applause after the laughter. He then refers to an expression, which is connected to the following two sources that explain line 260 of the *Nubes* by Aristophanes: λέγειν γενήσεται τρίμμα κρόταλον παιπάλῃ¹³⁶.

2.5.2. Aristophanes, *Scholia Vetera in Nubes*, *Suidae Lexicon*.

Both these sources try to provide an explanation for line 260 of the *Nubes*, which is uttered by Socrates, while telling Strepsiades what he will become by joining his school, that is to say, a tricky knave, a thorough rattler, a subtle speaker (τρίμμα, κρόταλον and παιπάλῃ). In the scholia to line 260 it is written that both these adjectives have not only the form ‘τρίμμα κρόταλον’, but can also be a part of the compounds ‘πολυτρίμμα’ and ‘πολύκροτος’. Cunning men can also be named περιτρίμματα,

¹³⁶ Pardini (1991, p. 62) explains that the relationship among the Homeric sources is not what one might think after a superficial reading. The question is whether the amount of information provided by Eustathius and the *Scholia Vetera in Nubes* are independent. An analysis of the manuscripts effected by Pardini asserts that the text of Eustathius includes information that does not come from a hypothetical different group of sources, but can be traced back to the same one, the *Scholia in Aristophanem*. The manuscript of the *Scholia Vetera* is later than Eustathius’ but it refers to a tradition from which the *Suda* already drew. The *Suda* is one of Eustathius’ well-recognised sources. Pardini relates the passages in *Scholia* 260a+b and 260c+d with the corresponding entries in *Suda* τρίμμα 989 and κρόταλον 2476 (Pardini, p. 62, n. 12). Eustathius, therefore, is less than certain of his writing on the variant shown to the reader (Pardini, 1991, pp. 62-63, n. 13).

πολυκρότους and κρόταλα. Both sources point to the fact that someone thought that the first line of the *Odyssey* included the word ‘πολύκροτον’.

2.5.3. Hesiodus, Fragmenta.

This is a fragment from the lost work of Hesiod called the *Catalogue of Women*. The passage comes from the part of the catalogue where Helen’s suitors are described. At this point, it is the turn of Odysseus, who is called ἱερὴ ἴς, υἱὸς Λαέρταο **πολύκροτα** μήδεα εἰδώς, “sacred strength, son of Laertes, who knew cunning plans”. Pardini (1991, p. 63) sees in this text a celebration of the defeated suitors of Helen in order to increase the importance of the winner. The meaning of ‘πολύκροτος’, “scaltro, accorto” (Pardini, 1991, p. 63) can be transferred to the Callimachean passage, where it can mean that Acontius is not ‘πολύκροτος’ enough to understand the trick needed to marry Cydippe, so Eros needs to tell him what he has to do in order to succeed.

It must be stressed that, following this analysis, a connection between Odysseus and πολύκροτος developed, even if few traces of it remain today. Of all the secondary sources found, this is the only one that does not cite the first line of the *Odyssey*, but it is nonetheless important because it provides evidence of this compound adjective referring to Odysseus¹³⁷.

2.6 πολύκροτος in other sources and its meaning.

A short survey of the meaning of πολύκροτος, from looking at the other occurrences found in the TLG, indicates that the main meaning is that of a sharp, loud sound. The others are a noisy harp, the much talkative Gasterodora, the noisy child Hermes, the resonant astragalos, Bacchus πολύκροτος who jumps and claps his hands and a loom that produces noise.

Athenaeus, Deipnosophistae. Book 5 paragraph 46.

καὶ καταυλούμενοι πρὸς χελωνίδος πολυκρότου ψόφους

Athenaeus, Deipnosophistae. Book 10 paragraph 66.

μηδ’ ὥστε κύμα πόντιον λάλαζε, τῇ πολυκρότῃ σὺν Γαστροδῶρῃ καταχύδην πίνουσα τὴν ἐπίστιον.

Athenaeus, Deipnosophistae. Book 12 paragraph 35.

¹³⁷ Pardini (1991, p. 65) thinks that this Hesiodic fragment is the most important one for the comprehension of Callimachus, whatever one thinks of the possibility of having the variant πολύκροτος in the *Odyssey*. The meaning of this word is not positive, and it is connected to a negative meaning of “deceit”, not to uttering a specific kind of sound.

γαστριζόμενοι ἐν αὐτοῖς οἴνοις καὶ βρώμασιν, ὥστε καὶ προσαποφέρειν πολλὰ καὶ καταυλουμένους πρὸς χελωνίδος πολυκρότου ψόφον, ὥστε τὰς πόλεις ὅλας τοιούτοις κελάδοις συνηγεῖσθαι.

Hymni Homerici, Ad Panem. Line 37.

Ἑρμείη φίλον υἱὸν ἄφαρ τερατωπὸν ιδέσθαι, αἰγιόδην δικέρωτα πολύκροτον ἠδυγέλωτα·

Lucianus, Podagra. Line 115.

οὐ τριχὸς ἄφετον λυγίζεται στροφαῖσιν αὐχὴν,
οὐδὲ πολυκρότοις ἀστραγάλοις πέπληγε νῶτα,
οὐδ' ὠμὰ λακιστῶν κρέα σιτούμεθα ταύρων·

Anacreon, Fragmenta (Page: Poetae melici Graeci). Fragment 82 (cited in Athenaeus, Deipnosophistae. Book 10 paragraph 66).

μηδ' ὥστε κύμα πόντιον
λάλαζε, τῇι πολυκρότηι
σὺν Γαστροδῶρῳ καταχύδην
πίνουσα τὴν ἐπίστιον.

Nonnus, Dionysiaca. Book 11 line 108.

Βάκχος ὑπὲρ δαπέδοιο θορὼν ἀνεμώδεϊ παλμῷ
χερσὶ συνεπλατάγησε πολύκροτος,

Nonnus, Dionysiaca. Book 24 line 300.

οἶδα, πόθεν, Κυθήρεια, πολύκροτον ἱστὸν ὑφαίνεις,
σὸς δόλος οὗ με λέληθε·

Nonnus, Dionysiaca. Book 47 line 393.

καὶ ὀλβίστη σέο νύμφη
τλήσομαι, ὥς θεράπεινα, πολύκροτον ἱστὸν ὑφαίνειν
καὶ φθονεροῖς ὥμοισιν ἀήθεα κάλπιν ἀείρειν,
καὶ γλυκερῷ Θησῇ φέρειν ἐπιδόρπιον ὕδωρ·

Callimachus, Aetia. Fragment 67. (T67-75.) (Acontius et Cydippe)

Αὐτὸς Ἔρως ἐδίδαξεν Ἀκόντιον, ὁππότε καλῇι
ἦιθετο Κυδίππῃ παῖς ἐπὶ παρθενικῇι,
τέχνην—οὐ γὰρ ὄγ' ἔσκε πολύκροτος—ὄφρα λέγο..[
τοῦτο διὰ ζωῆς οὔνομα κουρίδιον.¹³⁸

¹³⁸In her commentary (2012), Annette Harder thinks that Callimachus contrasts Acontius and Odysseus, “playing with πολύκροτος in both senses. Acontius was not ‘cunning’...and he was not a ‘fluent talker’” (p. 551). Callimachus is using an ambiguous term, but there is no possibility of knowing whether there is an “allusion to the textual tradition of Homer” (2012, p. 551).

In order to pursue a strictly philological analysis of the text of the *Odyssey*, it is perhaps not necessary to undertake such a survey, but it might help understand what Odysseus was perceived to resemble by a part of the tradition, however small it might be.

2.7 The *Hippias Minor* and Antisthenes.

As far as the two texts are concerned, we should first and foremost say that one was written by a Sophist and that one of the characters of the *Hippias Minor* is a Sophist. They are examples of speeches where Homer is cited within a discourse on mythological figures and rhetorical speeches. In a paper on Homer and the first Sophistic, Knudsen (2015) describes the use of myth in four speeches of Gorgias, Antisthenes and Alcidas, which are *The Defence of Palamedes*, *Ajax and Odysseus* and *Odysseus: against the Treachery of Palamedes*. There is a tradition of employing mythological objects and stories, in order to make the comprehension and study of rhetoric lighter. Between these myths, the figure of Odysseus is used as a “sophist *par excellence*” (Knudsen, 2015, p. 35). In the work of Antisthenes, the speeches of Ajax and Odysseus are “antilogic” (Knudsen, 2015, p. 39) and, referring to the famous myth of the shield, they describe Odysseus as the “consummate rhetorician, attuned to his audience and ruthlessly clever in his argumentation” (Knudsen, 2015, p. 40). Odysseus’ speech is an appeal from his ethos and an attack on a man, using the background story everybody reading or listening to the speech knew from the Homeric poems, together with precise rhetorical techniques. At the end of the speech, Antisthenes states the integration between poetic tradition and the rhetorical tradition of the Sophists by calling the poet σοφός. Knudsen believes that there was, for a specific period of time, a close relationship between mythos and logos, which further developed into an advancement from mythos to logos, and that the Homeric poems are a “precedent for most of the rhetorical strategies demonstrated”. It is then understandable that Odysseus should have been used as a “mouthpiece for sophistic exhibition” (Knudsen, 2015, p. 45). This is the foundation of the texts described in this paragraph; they lie within the relationship between Homer and the culture of orators and sophists.

It was previously mentioned that in many analyses of the proem to the *Odyssey* the figure of Odysseus is compared to that of Achilles in the proem to the *Iliad*. It is not the place here to discuss these two heroes, but there are two other works on this subject that should be cited: Plato’s *Hippias Minor* dialogue and a fragment of Porphyrius cited in the Scholia, which recalls the opinion expressed by Antisthenes.

The importance of Plato and Antisthenes in connection with a change in the way Odysseus was seen by ancient writers sparked a never-ending debate. The solution to the argument that has arisen from the comparison of the notions expressed by these two authors proves difficult because what is preserved from Porphyrius is unclear and does not permit an immediate comprehension. This is because one cannot clearly comprehend which part of the fragment in Porphyrius refers to Antisthenes' beliefs and which to Porphyrius', and, furthermore, which part is a scholium. It is important to describe these two works, albeit only briefly, because their way of describing Odysseus has to be considered when attempting to offer an explanation as to why a variant exists in the Homeric text with 'πολύκροτον' instead of 'πολύτροπον'. It is also worthwhile mentioning Porphyrius here because it is an example of how to use scholia as a secondary source. The question connected to these texts is, as it was mentioned above, whether they should be encoded in this "Comprehensive Odyssey", and if so, how they should be encoded and what exactly it means to publish Porphyrius in the scholia, whether under Porphyrius or under Antisthenes. This is a question that must be asked, mainly because the "Comprehensive Odyssey" is an edition that is not fixed, but open to changes, and there is no need to decide beforehand about all the secondary sources. Sources like Antisthenes or the *Hippias Minor* may be part of the edition even in later stages, perhaps if their encoding is considered relevant, thanks to a close connection to a specific line or variant.

Until now, it was decided to encode only the texts that quote a line of the Odyssey or where it was possible to find one using the TLG, such as Eustathius. The question of what to encode goes back to the previous analysis of why we are adding the secondary sources and why we are describing here studies on Homer used in those sources. They are secondary sources because they talk almost directly about a verse, having not only a word that is found in it, but discussing it in connection with the subject of the verse. In the cases described here, there is the presence of the word πολύτροπος in connection with Odysseus and, since it is possible to find it only in two verses of the Odyssey, it seems that these texts should be considered as secondary sources worth encoding in the "Comprehensive Odyssey". If we consider the "Comprehensive Odyssey" as a repository that is maintained by a digital community, the addition of further sources might be a communal decision that could go beyond the recommendations available in the Guidelines that must be drawn up, should the project pass the stage of proof of concept. We shall describe below how the employment of CTS architecture could help in this case, where the 'same' text may be found in the

scholia, under both Porphyrius and Antisthenes. It is important to have specific identifiers and to employ them in the encoding of what can be described as a fragmentary author, as we have seen in the first paragraph of this chapter. In this way it should be possible to encode all the three records of the same text. However, should there be only one record on this occasion or should there be the single records since every edition is different from the other? Or should the differences be encoded in the annotation section of a platform such as *Perseids*? It will be seen that, in this case, there are differences among the texts, depending on the edition, and they should be maintained or recorded because they pertain to a specific edition, the scholia, Porphyrius or Antisthenes, in which the same text is looked, or should be looked at, from a different perspective.

The *Hippias Minor* is a dialogue of Plato's about truth and falsehood. Plato chose to talk about those subjects by means of a comparison between Odysseus and Achilles. The first use of πολύτροπος is at 364c, where Achilles is called ἄριστον μὲν ἄνδρα, Nestor σοφώτατον and Odysseus πολυτροπώτατον. Hippias specifies that if Ἀχιλλεύς εἶη ἀληθής τε καὶ ἀπλοῦς, ὁ δὲ Ὀδυσσεὺς πολύτροπος τε καὶ ψευδής. What it is possible to find here is a double connection between πολύτροπος and ψευδής. Socrates at 365 d-e¹³⁹ says that the οἱ ψευδεῖς are Δυνατοὶ κατὰ τὸν σὸν (of Hippias) λόγον καὶ πολύτροποι. J.J. Mulhern (1968) states that what is described here is no longer the τρόπος, the habit of a person, but rather the δύναμις, the capacity to perform an action. A little further down in the same dialogue, πολύτροπος is again connected to Odysseus (369 b)¹⁴⁰, but, slightly later (369d-370a)¹⁴¹, after a further discussion about truth and lies, πολύτροπος appears in a philosophical discussion of Socrates, so the term is connected to both Odysseus and Achilles.

This is not the place for an analysis of the *Hippias Minor*, but, briefly, this dialogue indicates that Socrates was assuming a defence of Odysseus and, in this way, Plato was describing Socrates as being himself polytropic (Lampert, 2002, p. 242). In the dialogue, Socrates sides with Odysseus, trying to defend him from the accusations

¹³⁹ “ΣΩ. Τοὺς ψευδεῖς λέγεις οἷον ἀδυνάτους τι ποιεῖν, ὥσπερ τοὺς κάμνοντας, ἢ δυνατοὺς τι ποιεῖν; —ΠΙ. Δυνατοὺς ἔγωγε καὶ μάλα σφόδρα ἄλλα τε πολλὰ καὶ ἐξαπατᾶν ἀνθρώπους. —ΣΩ. Δυνατοὶ μὲν δὴ, ὡς ἔοικεν, εἰσὶ κατὰ τὸν σὸν λόγον καὶ πολύτροποι· ἦ γάρ; —ΠΙ. Ναί. —ΣΩ. Πολύτροποι δ’ εἰσὶ καὶ ἀπατεῶνες ὑπὸ ἡλιθιότητος καὶ ἀφροσύνης, ἢ ὑπὸ πανουργίας καὶ φρονήσεώς τινος;” (365 d-e).

¹⁴⁰ “ΣΩ. Νυνὶ γὰρ ἴσως οὐ χρῆ τῷ μνημονικῷ τεχνήματι— δῆλον γὰρ ὅτι οὐκ οἶει δεῖν—ἀλλὰ ἐγὼ σε ὑπομνήσω. οἶσθα ὅτι τὸν μὲν Ἀχιλλεὺς ἔφησθα ἀληθῆ εἶναι, τὸν δὲ Ὀδυσσεὺς ψευδῆ καὶ πολύτροπον;” (369 b).

¹⁴¹ “ἐπεὶ καὶ νῦν ἐννεόηκα σοῦ λέγοντος, ὅτι ἐν τοῖς ἔπεσιν οἷς σὺ ἄρτι ἔλεγες, ἐνδεικνύμενος τὸν Ἀχιλλεὺς εἰς τὸν Ὀδυσσεὺς λέγειν ὡς ἀλαζόνα ὄντα, ἄτοπόν μοι δοκεῖ εἶναι, εἰ σὺ ἀληθῆ λέγεις, ὅτι ὁ μὲν Ὀδυσσεὺς οὐδαμοῦ φαίνεται ψευδόμενος, ὁ πολύτροπος, ὁ δὲ Ἀχιλλεὺς πολύτροπός τις φαίνεται κατὰ τὸν σὸν λόγον.” (369d-370a)

of being a liar and false, as well as wily and shifty. A detailed portrayal of Odysseus and Socrates as *πολύτροποι* can be found in an article written by David LévyStone of 2005. LévyStone illustrates the Platonic dialogue as a place where the main interest is the concept of *πολύτροπος* linked to Odysseus and his defence. LévyStone points out that the major difficulty in understanding this part of the dialogue is the concept of *δύναμις*, which, in his view, refers to how Socrates understands the term *πολύτροπος* to be a *δύναμις* and not a *τρόπος*, a *δύναμις* which is dependent on knowing and distinct from *τρόπος*. In his opinion, the real issue is not in the distinction between a “*dunamis-puissance et tropos-caractère, mais dans l’amphibologie du terme tropos lui-même: âme ou discours, caractère ou usage du langage. ... La polytropie d’Achille est multiple, c’est le tropos-caractère, et le pseudês qu’elle implique est erreur. Dans le second (celle d’Ulysse), c’est simplement le tropos-langage qui est divers, et le pseudês qu’elle engender est mensonge*”¹⁴² (2005, p. 204).

Another comparison between Odysseus and Socrates can be found in two writings by Xenophon on Socrates, the *Banquet* and the *Memorabilia*. In the *Banquet* there is a discussion on the educational value of the Homeric poems, between a direct use of the words of Homer and a deeper understanding of their more profound meaning, described by an exchange of words between Niceratos and Antisthenes. In the *Memorabilia* it is possible to see how Socrates was interested in the profound didactic values and meaning to be found in Homeric verses. Gotteland (2015) explains how in the *Memorabilia* the Homeric verses were used to explain Socrates’ political and social opinions. There is a long quotation from Homer’s *Iliad* and then there is the commentary by Socrates followed by other guests at the banquet who comment on Socrates’ exegesis. Homer is then used as a medium for a description of Socrates and his ideas. Gotteland explains how the Homeric text was interpreted, how certain passages were omitted and others moved, in the beginning of the passage of the *Odyssey* about Odysseus and Circe in Book X. Odysseus is seen as a model of virtue, “une incarnation mythique de cette tempérance vantée chez Socrate¹⁴³”, defended in *Xenophon* by Antisthenes as a man “trionphant de multiples tentations, résistant aux maux extrêmes qu’il endure au cours de son voyage de retour...modèle de vertu¹⁴⁴”

¹⁴² “*dunamis* power and *tropos* character, but in the meaning of the word *tropos* itself: soul or speech, character or use of language... The *polutropos* of Achilles is multiple, it is the *tropos*-character, and the *pseudês* which it implies means wrong. In the second *tropos* (that of Odysseus) it is simply the *tropos* language which is different and the *pseudês* that comes from it is a lie” (my translation)

¹⁴³ “a mythic incarnation of this temperance praised in Socrates” (my translation).

¹⁴⁴ “triumphing over multiple temptations, resisting extreme hindrances which he suffers during his return journey...example of virtue” (my translation).

(Gotteland, 2015, p. 187). Gotteland follows Buffière in his depiction of Odysseus as a precursor of Socrates in his rhetoric method, described as the archetype of the perfect orator who was able to adapt his speeches to his audience. It is in this way, says Buffière, that Antisthenes describes the word *πολύτροπος* (Le Mythes d’Homère, p. 350). Gotteland stresses that Xenophon also links the two figures of Odysseus and Socrates, mentioning the way the philosopher referred to Odysseus in order to defend his own method of explanation, using notions admitted by the community of listeners to the discussions. Socrates does not find in Homer a judgement on Odysseus, but he interprets the verses of the poet and the explanation that he gives of the power of persuasion of the man “aux milles tours”. Gotteland concludes that Socrates “fait appel à la parole homérique, trésor de sagesse dans lequel le philosophe va puiser sans réserve¹⁴⁵” (Gotteland, 2015, p. 189).

The other work that must be mentioned here is the passage from Porphyrius that cites Antisthenes’ opinion of Odysseus, which can be found in the scholia to the first line of the *Odyssey*. This passage was already mentioned in the earlier chapter on the encoding process (Chapter 4.4.1.4, section d) where we stressed the implications of not following page and line breaks of the printed edition chosen for this proof of concept. Here we shall see what the differences between different editions are and whether, and how, they have been considered by editors of printed editions and commentators. In conclusion, there will be a short description of how the CTS architecture could work in this case of a quotation of a lost author. The text below is Pontani’s edition of the scholia, as it has been encoded in the “Comprehensive Odyssey”. It was felt that there was no need to keep the same paragraph divisions or line numberings as they stand in the printed edition. This is for two reasons: first, because the critical apparatus was encoded using the Parallel Segmentation Method of the TEI Guidelines, which can only be used in-line, i.e. at the specific point where the variant is found (see Chapter 4.4.1.3). Second, the *apparatus testimoniorum* of the printed edition follows a paragraph, not a line, division. In most cases this proves correct, but not in this particular case because in the *apparatus testimoniorum* a sentence cites a line number and it is important to understand Pontani’s view of the question. In this instance, the *apparatus testimoniorum* is similar to a short commentary on the passage, so line numbering is extremely important, and is a particular problem in our digital edition. In order to understand Pontani’s explanation, indications are placed in the text transcribed in this

¹⁴⁵“calls for the Homeric word, a hoard of wisdom, from which the philosopher will draw without reserve” (my translation).

chapter, where a group of lines described by Pontani in his apparatus ends, even if this is not visible in the proof of concept, critical edition of the “Comprehensive Odyssey”.

“οὐκ ἐπαινέειν φησιν Ἀντισθένης Ὅμηρον τὸν Ὀδυσσεῖα μᾶλλον ἢ ψέγειν, λέγοντα αὐτὸν “πολύτροπον”. οὐκ οὖν τὸν Ἀχιλλεῦς καὶ τὸν Αἴαντα πολυτρόπους πεποιημένους, ἀλλ’ ἀπλοῦς καὶ γεννάδας· οὐδὲ τὸν Νέστορα τὸν σοφὸν οὐ μὰ Δία δόλιον καὶ παλίμβολον τὸ ἦθος, ἀλλ’ ἀπλῶς τῷ Ἀγαμέμνονι συνόντα ἀποκρυπτόμενον. καὶ τοσοῦτον ἀπεῖχε τοῦ τὸν, τοιοῦτον τρόπον ἀποδέχεσθαι ὁ Ἀχιλλεύς, ὥς ἐχθρὸν ἡγεῖσθαι ὁμοίως τῷ θανάτῳ ἐκείνου “ὅς χ’ ἔτερον μὲν κεύθει ἐνὶ φρεσίν, ἄλλο δὲ, βάζει” [I 313], (end of lines 5-13) λύων οὖν ὁ Ἀντισθένης φησί· τί οὖν; ἄρα γε πονηρὸς ὁ Ὀδυσσεὺς ὅτι πολύτροπος ἐρρέθη; καὶ μὴν />, διότι σοφός, οὕτως αὐτὸν προσεῖρηκεν . μήποτε οὖν τρόπος τὸ μὲν τι σημαίνει τὸ ἦθος, τὸ δὲ τι σημαίνει καὶ τοῖς ἄλλοις ἅπασι, καὶ εἰς τὸ στρατόπεδον εἶτι ἀγαθὸν εἶχε συμβουλευόμενον καὶ οὐκ τὴν τοῦ λόγου χρῆσιν · εὐτροπος γὰρ ἀνὴρ ὁ τὸ ἦθος ἔχων εἰς τὸ εὖ τετραμμένον. τρόποι δὲ, λόγων ἑαῖτιοι αἱτ’ πλάσεις · καὶ χρῆται τῷ τρόπῳ καὶ ἐπὶ φωνῆς καὶ ἐπὶ μελῶν ἐξαλλαγῆς, ὥς ἐπὶ τῆς ἀηδόνης “ἦτε θαμὰ, τρωπῶσα χεῖ πολυηχέα φωνήν” [τ 521]. εἰ δὲ οἱ σοφοὶ δεινοὶ εἰσι διαλέγεσθαι, ἐπίστανται καὶ τὸ αὐτὸ νόημα κατὰ πολλοὺς τρόπους λέγειν · ἐπιστάμενοι δὲ πολλοὺς τρόπους λόγων περὶ τοῦ αὐτοῦ, πολύτροποι ἂν εἴεν. εἰ δὲ σοφοί, καὶ ἀγαθοὶ εἰσι. διὰ τοῦτο φησι τὸν Ὀδυσσεῖα Ὅμηρος σοφὸν ὄντα πολύτροπον εἶναι, ὅτι δὴ τοῖς ἀνθρώποις ἥπιστατο πολλοῖς τρόποις συνεῖναι. (end of line 25) οὗτο καὶ Πυθαγόρας λέγεται, πρὸς παῖδας ἀξιωθεὶς ποιήσασθαι λόγους, διαθεῖναι πρὸς αὐτοὺς λόγους παιδικούς, καὶ πρὸς γυναῖκας γυναιξὶν ἀρμόδιους, καὶ πρὸς ἄρχοντας ἀρχοντικούς, καὶ πρὸς ἐφήβους ἐφηβικούς. τὸν γὰρ ἐκάστοις πρόσφορον τρόπον τῆς σοφίας ἐξευρίσκειν, ἀμαθίας δὲ τὸ πρὸς τοὺς ἀνομοίως ἔχοντας τῷ τοῦ λόγου χρῆσθαι μονοτρόπῳ. ἔχειν δὲ τοῦτο καὶ τὴν ἱατρικὴν ἐν τῇ τῆς τέχνης κατορθώσει, ἡσκηκυῖαν τῆς θεραπείας τὸ πολύτροπον διὰ τὴν τῶν θεραπευομένων ποικίλην σύστασιν. τρόπος μὲν οὖν τὸ παλίμβολον τὸ τοῦ ἦθους, τὸ πολυμετάβολον. λόγου δὲ πολυτροπία καὶ χρήσις ποικίλη λόγου εἰς ποικίλας ἀκοὰς μονοτροπία γίνεται. ἐν γὰρ, τὸ ἐκάστῳ οἰκεῖον· διὸ καὶ τὸ ἀρμόδιον ἐκάστῳ τὴν ποικιλίαν τοῦ λόγου εἰς ἓν συναγείρει τὸ ἐκάστῳ πρόσφορον. τὸ δ’ αὖ μονοειδές, ἀνάρμοστον ὄν πρὸς ἀκοὰς διαφόρους, πολύτροπον ποιεῖ τὸν ὑπὸ πολλῶν, ἀπόβλητον ὥς αὐτοῖς ἀπόβλητον λόγον.” (end of line 39) (Antisthenes fr. 51, Porphyrius, schol. ad Od. I, 1)

“usque ad l.25 ex Antisthenis Περὶ Ὀδυσσεείας; Il. 5-13 Hippiae verba in Ulixem πολύτροπον referunt, cf. Plat. Hipp. min. 363b-365c; il 14-25 Ulixem Socraticum demonstrant (de eius sapientia cf. e. g. Max. Tyr. diss. 22,5); il. 26-39 Porphyrio tribuendae, qui potius de Ulixis vi rhetorica agit; de Pythagora cf. Porph. vit. Pyth. 18 (= Dicaearch. fr. 33 Wehrli); ex hoc scholio Eust. in Od. 1381, 28 et 40-46 (ubi plurimi facienda adnotatio τρόπον γὰρ οὐκ οἶδε τὸ ἦθος ὁ ποιητής, nescio an ex antiquis deprompta); de toto scholio eiusque interpretationibus optime egit Luzzatto, *Dialettica* (cf. Sguardi, adn. 29)” (Pontani, *apparatus testimoniorum*, pp. 7-8).

Following Luzzatto’s division (1996), Pontani argues that the first 25 lines are “ex Antisthenis Περὶ Ὀδυσσεείας”, and of them lines 5-13 “Hippiae verba in Ulixem πολύτροπον referent”, lines 14-25 “Ulixem Socraticum demonstrant (de eius sapientia

cf. e. g. Max. Tyr. diss. 22,5)”; the following lines 26-39 “Porphyrio tribuendae, qui potius de Ulixis vi rhetorica agit”.

The description below explains the difficulties of thinking about the encoding of a lost author who is available to us through different editions that pertain to different kind of texts. First, we shall depict the various editions and their distinctions from a philological point of view, then there will be an analysis of how it could be possible to display this text digitally, without losing any of these editions, but connecting them as pertaining to the same origin. Here we follow what Berti et al. stressed in 2009, when they stated that an ontology should be created for the representation of fragments. This should allow for a correspondence to be made between fragments from different editions, “aligning multiple citation schemes of different editions of the same work” (Berti et al., 2009, p. 261). We shall then look at the possibility of employing the notions behind the collaborative platform *Perseids* in order to keep every single edition in the project but linked together because, as already mentioned, all the critical editions that pertain to a lost or fragmentary author should be different, whether of the source or of the lost author. In this case study, we have one text that originates from the scholia and at least five or six critical editions either of Antisthenes or of Porphyrius which are sometimes different. When we say that they are different, we are talking about the text, not page breaks and alignments, which might not always be the same in different editions.

The text quoted above shows the text as Pontani published it in his scholia edition, but it is not the same text that was published by Decleva-Caizzi (1966) in her Antisthenes edition. There she followed the text published by Hermannus Schrader (1890) in his edition of Porphyrius¹⁴⁶. This means that if, as in this digital edition, the author expresses the wish to encode every secondary source, the same text will be used, whether for Antisthenes or for Porphyrius, with no differences except in the apparatus and commentaries. Hence, it is not possible to focus on a specific author from a textual point of view. It seems as if the editor of Antisthenes accepts the work of another editor, who was editing yet another author, without even contesting it. It is obvious that the

¹⁴⁶Concerning the fragments of Antisthenes, see the newly published edition by Susan Prince (2015) with an English translation and a commentary. She states that her edition is “primarily a commentary on the edition of the surviving textual passages [...] published by Gabriele Giannantoni in 1983...” (2015, p. 1). Nevertheless, she praises certain aspects of the edition of Decleva-Caizzi stressing that “her text is free from error. Moreover, Decleva-Caizzi offers commentary on each passage individually, in contrast to the bibliographical essays on broader topics offered in SSR [Giannantoni]” (2015, p. 3). For an analysis of the passage considered in this dissertation, see page 591 – 622. Here we should point out that Pierce employs the text as found in the edition of the Scholia published by Pontani, adding a translation, a context of preservation and a detailed commentary. There is also a critical apparatus, but the author explains that this edition “cannot be considered an independent scholarly edition in all senses” (2015, p. 5).

work of Antisthenes cannot be recovered, but it seems that in the Decleva-Caizzi edition (1966) Schrader's text (1890) is taken into account without questioning its criteria. An editor of a printed critical edition is someone who intends to publish the text of a specific work, trying to reconstruct it from the tradition available. The focus should be on the author to whom the editor is referring in his or her edition, even if the text which the editor is examining is composed of fragments of lost works collected from the works of other authors, who cite the one work with which the editor is concerned. At this point, the text of Porphyrius, as it can be read in the Schrader (1890) and Decleva-Caizzi (1966) edition, will be inserted. It is important to mention that this text has not been encoded in the secondary sources of the "Comprehensive Odyssey" because it makes no mention of a direct quotation of the first line of the *Odyssey*.

Οὐκ ἐπαινεῖν φησιν Ἀντισθένης Ὅμηρον τὸν Ὀδυσσέα μᾶλλον ἢ ψέγειν λέγοντα αὐτὸν πολύτροπον. οὐκ οὖν τὸν Ἀγαμέμνονα καὶ τὸν Αἴαντα πολυτρόπους πεποιηκέναι, ἀλλ' ἀπλοῦς καὶ γεννάδας, οὐδὲ τὸν Νέστορα τὸν σοφὸν οὐ μὰ Δία δόλιον καὶ παλίμβολον τὸ ἦθος, ἀλλ' ἀπλῶς τῷ Ἀγαμέμνονι συνόντα καὶ τοῖς ἄλλοις ἅπασιν καὶ εἰς τὸ στρατόπεδον, εἴ τι ἀγαθὸν εἶχε, συμβουλευόντα καὶ οὐκ ἀποκρυπτόμενον. καὶ τοσοῦτον ἀπεῖχε τοῦ τὸν τοιοῦτον τρόπον ἀποδέχεσθαι ὁ Ἀχιλλεύς, ὥς ἐχθρὸν ἡγεῖσθαι ὁμοίως τῷ θανάτῳ ἐκεῖνον, ὅς χ' ἕτερον μὲν κεύθη ἐνὶ φρεσὶν ἄλλο δὲ εἶπη (I 313). λύων οὖν ὁ Ἀντισθένης φησί· τί οὖν; ἄρα γε πονηρὸς ὁ Ὀδυσσεύς, ὅτι πολύτροπος ἐρρέθη, καὶ μὴ, διότι σοφός, οὕτως αὐτὸν προείρηκε; μήποτε οὖν τρόπος τὸ μὲν τι σημαίνει τὸ ἦθος, τὸ δὲ τι σημαίνει τὴν τοῦ λόγου χρῆσιν· εὐτροπος γὰρ ἀνὴρ ὁ τὸ ἦθος ἔχων εἰς τὸ εὖ τετραμμένον, τρόποι δὲ λόγων αἱ ποικαὶ πλάσεις· καὶ χρῆται τῷ τρόπῳ καὶ ἐπὶ φωνῆς καὶ ἐπὶ μελῶν ἐξαλλαγῆς, ὥς ἐπὶ τῆς ἀηδόνης· ἢ τε θαμὰ τρωπῶσα χέει πολυηχέα φωνήν (τ 521). εἰ δὲ οἱ σοφοὶ δεινοὶ εἰσι διαλέγεσθαι, καὶ ἐπίστανται τὸ αὐτὸ νόημα κατὰ πολλοὺς τρόπους λέγειν· ἐπιστάμενοι δὲ πολλοὺς τρόπους λόγων περὶ τοῦ αὐτοῦ πολύτροποι ἂν εἶεν. εἰ δὲ οἱ σοφοὶ καὶ ἀνθρώποις ὁμιλεῖν ἀγαθοὶ εἰσι, διὰ τοῦτο φησι τὸν Ὀδυσσέα Ὅμηρος σοφὸν ὄντα πολύτροπον εἶναι, ὅτι δὴ τοῖς ἀνθρώποις ἠπίστατο πολλοῖς τρόποις συνεῖναι. οὕτω καὶ Πυθαγόρας λέγεται πρὸς παῖδας ἀξιῶθεις ποιήσασθαι λόγους διαθεῖναι πρὸς αὐτοὺς λόγους παιδικούς καὶ πρὸς γυναικας γυναιξὶν ἀρμοδίους καὶ πρὸς ἄρχοντας ἀρχοντικούς καὶ πρὸς ἐφήβους ἐφηβικούς· τὸν γὰρ ἐκάστοις πρόσφορον τρόπον τῆς σοφίας ἐξευρίσκειν, ἀμαθίας δὲ εἶναι τὸ πρὸς τοὺς ἀνομοίως ἔχοντας τῷ τοῦ λόγου χρῆσθαι μονοτρόπῳ. ἔχειν δὲ τοῦτο καὶ τὴν ἱατρικὴν ἐν τῇ τῆς τέχνης κατορθώσει, ἡσκηκυίας τῆς θεραπείας τὸ πολύτροπον διὰ τὴν τῶν θεραπευομένων ποικίλην σύστασιν. ... τρόπος μὲν οὖν τὸ παλίμβολον τὸ τοῦ ἦθους, τὸ πολυμετάβολον καὶ ἄστατον. λόγου δὲ πολυτροπία καὶ χρῆσις ποικίλη λόγου.

It is possible to understand better both the connections between the notions of Plato and Antisthenes and the issue of editions of fragments of lost works, which were previously mentioned, by following the interpretation suggested by LévyStone (2005). To his mind, Antisthenes is defending Odysseus, and the way he does so is by demonstrating that the word πολύτροπος is connected to three aspects of τρόπος,

namely character, style of language and the variation in the voice of the nightingale. He prefers the variations in the style of language, associated with wisdom, thus stressing that the word πολύτροπος has a positive meaning. Odysseus has the ability to talk and to express the same thought in various ways, and he is the model of a good orator and a wise man. LévyStone (2005, pp. 205-206) combines Plato and Antisthenes in giving a combined definition of πολύτροπος:

- “1.Ulysse est polytropos. Cela ne signifie pas <faux> de <caractère> (ἥθος, chez Antisthène; τρόπος, chez Hippias-Platon) comme le croit Hippias ou l’interlocuteur du text d’Antisthène.
- 2.En effet, la polytropie a rapport au langage: elle est χρησις ποικίλη λόγου (Antisthène) ou (dunamis de) ψευδῆ λέγειν (Platon).
- 3.Cette capacité portant sur le langage est positive car elle est le signe du savoir du héros (Platon and Antisthène).
- 4.Si Ulysse est sage, il est aussi bon (explicite chez Antisthène, consequence implicite chez Platon).
- 5.La polytropie se définit finalement, pour Antisthène, comme capacité d’adaptation, permettant de ramener la diversité à l’unité, comme monotropie positive. Dans l’Hippias Mineur, il n’y a rien de semblable: la polytropie semble se limiter à une capacité de dire faux....peut-être y a-t-il, concernant la polytropie, d’autres possibilités qui ne trouvent pas leur place dans ce dialogue...”(p. 205-206)¹⁴⁷

While reading this interesting article, what strikes one here is not this complex definition but the way in which LévyStone (2005) almost unquestionably cites this passage of Porphyrius as if there were no question about it and as if it were indisputably a “texte de Porphyre qui résume l’argumentation d’Antisthène”¹⁴⁸ (2005, p. 195). In this article, this passage is a fragment from Antisthenes rather than one from Porphyrius, or a scholium. The problem is well discussed by Luzzatto (1996, pp. 283-288), who expresses the opinion that it is difficult to understand what comes from Antisthenes and what from Porphyrius and that what is separate material should be considered unified, using a text that was edited by someone who was not thinking about Antisthenes. Winkelmann (1842) and Mullach (1867) express the difficulty of separating what is from one author from what from another, while Decleva-Caizzi (1966) believes that the whole text is from Antisthenes, following Rostagni (1922), and similarly, the text also enters the edition of the pre-Socratics published by Giannantoni (1990). The question is that these editions oblige the reader to consider that the text that we read today is one alone that comes directly from antiquity, whereas it is not because the fragments of

¹⁴⁷ “Odysseus is polytropos, which does not mean of wrong character. Being polytropos in connection with language is positive because it is a sign of the knowledge of the hero. Odysseus is wise and good. Being polytropos means adapting, uniting differences in one combination, following Antisthenes. In Hippias it is only a way of telling lies” (reduced and translated, 2005, pp. 205-206)

¹⁴⁸ text of Porphyrius which summarizes the discussion of Antisthenes (my translation)

Antisthenes which are now available are not direct fragments, but derived from “gli Aporemata omerici di Aristotele, quindi dagli Zetemata di Porfirio...”¹⁴⁹ (Luzzatto, 1996, p. 286). All these texts, then, became part of the Scholia, and may have been further modified. It is this material that is now used by the editors of Antisthenes, but Luzzatto (1996, pp. 286-287) explains that the editors of the scholia were not thinking of editing the philosopher and that for this reason their final viewpoint is different¹⁵⁰. Major interventions were carried out by Schrader (1890), who already describes the text as a quotation from Antisthenes in his edition of the *Quaestionum Homericarum*, and these influenced the editions of Decleva-Caizzi (1966) and Patzer (1970), while Ludwich (1889-1890) avoided such corrections and produced a text free of interventions. In this case, if the text were put in the “Comprehensive Odyssey”, the same text would be included in the edition for both authors, as would be the case for every author who is known only through an indirect citation. The reason for this choice is that while creating this prototype, it became clear that there would be ‘visual’ repetitions. Only a reading of the critical apparatus can explain whether what is in the “Comprehensive Odyssey” is a new edition, whether the editor is expressing some doubts about the text used for his/her edition or whether no debate on this issue exists at all. What is stated here is that the Scholia contain a work by Porphyrius, and Schrader (1890) is editing the text of this work. Decleva-Caizzi (1966) is editing a fragment of Antisthenes, therefore in her edition attention should focus on the part where Antisthenes is cited, as if the editor were looking at what could be recovered from the text from Antisthenes and not from Porphyrius.

The same problem seen in the article by LévyStone (2005) can be found in the all-encompassing book by Corinne Jouanno (2013) on Odysseus. Here a chapter is dedicated to Odysseus as a model for orators, and the author describes that few of them report the opinion of Antisthenes when he describes the meaning of the word πολύτροπος “seeing in it an allusion to the rhetorical talents of the character (Odysseus)” (translation, p. 165). The author cites the text of Antisthenes using the translation by M.O. Goulet-Cazé (1992), while telling the reader that the text was transmitted by the *Odyssey* scholia. She uses Dindorf’s edition of 1855 as reference text, without acknowledging that it is possible to read the passage from Antisthenes in the new on-going edition of the scholia produced by Filippo Maria Pontani, which contains many differences from that of Dindorf.

¹⁴⁹ “the Homeric Aporemata of Aristotele, then from the Zetemata of Porphyrius...” (My translation)

¹⁵⁰ See Buttman’s edition of the *Odyssey Scholia* (1821) and Dindorf’s edition (1855), cited by Luzzatto (1996, p. 286), and the fact that they attribute the origin of the text to either a grammarian or Porphyrius.

Since this text of Porphyrius is considered important for an understanding of the variant ‘πολύκροτον’ in Homer, editors should reveal to readers all the implications which such a text has, explaining why they are referring to a specific critical edition and why they did not produce an apparatus of their own.

In order to describe how it could be possible to employ the CTS architecture and the Perseids platform in order to deal with all these sources, we shall first provide a list of all the printed critical editions dealt with when talking about Porphyrius and Antisthenes in chronological order. They are:

- 1821 Buttman, *Odyssey Scholia*
- 1842 Winkelmann, *Antisthenis Fragmenta*
- 1855 Dindorf, *Odyssey Scholia*
- 1867 Mullach, *Fragmenta Philosophorum graecorum*
- 1890 Schrader, *Porphyri Quaestionum Homericarum ad Odisseam pertinentium reliquiae*
- 1889-90 Ludwich, *Scholia in Homeri Odysseam A 1-309*
- 1892 Blass, *Orationes et fragmenta, adiectis Gorgiae, Antisthenis, Alcidamantis, declamationibus*
- 1966 Decleva-Caizzi, *Antisthenis Fragmenta*
- 1970 Patzer, *Antisthenes der Sokratiker*
- 1990 Giannantoni, *Socrates and Socraticorum reliquiae*
- 2007 Pontani, *Scholia*.

To this list we should add the articles by Rostagni (1922) and Luzzatto (1990). We must try to understand the relationships between these different editions and see whether an editor employs the text of another one, as Decleva-Caizzi and Giannantoni do with that of Schrader, in order to establish connections. Each one of these editions must be given an identifier, and each one should be accessed on screen, or their textual differences clarified in the encoding. As seen in the article of 2013 by Almas and Berti, the *Perseids* platform in its present interface allows for the visualisation of the source text in different editions with the possibility of highlighting the re-use, the lost author in this example. In order to find an identifier with which to begin our encoding, we looked at the Perseus catalogue for Porphyrius and found this urn for his *Quaestionum Homericarum ad Odisseam pertinentium reliquiae*, urn:cts:greekLit:tlg2034.tlg016, and this urn for the Schrader edition, urn:cts:greekLit:tlg2034.tlg016.opp-grc1. It is also possible to find an identifier for the *Fragmenta* of Antisthenes, urn:cts:greekLit:tlg0591.tlg001, and one for the edition of Blass of 1892,

urn:cts:greekLit:tlg0591.tlg001.opp-grc1. The urns store the identifier for the authority who made the encoding and another one that gives the author's name together with the specific work, separated by a full stop. In our example, we will have as many urns as are the editions listed above, but they will be divided into two groups, one for Porphyrius and one for Antisthenes. Only the ending of the urn will be different because it will have an unambiguous identifier for each edition. In this way, it should be possible to encode all the various editions and their differences; however, there is one last thing that must be expressed and encoded: the lost author, Antisthenes, in the editions of Porphyrius and in the scholia. It is possible to follow the work of Berti and the creation of a Perseus Collection of Lost Content Items (urn:cite:perseus:lci) for encoding the quotation in Porphyrius and the scholia. In this way, we could have all the editions together with a commentary. In the "Comprehensive Odyssey" we do not have all these editions, only one for Porphyrius, one for Antisthenes and one for the scholia, but the identifiers would work in the same way. There is the need to provide both the edition of the source text and of the lost author because they might differ in how the text is edited. In the encoding of both Porphyrius and the scholia there should be the identifier for the text considered as a quotation, and it should be stated that Porphyrius quotes Antisthenes and the beginning and last word of the quotation. In the previous paragraphs, we described how the text of Antisthenes originates from the "Zetemata di Porfirio" and that this material is now part of the Scholia. In this case there should be an urn saying that the scholia quote Porphyrius, and another adding the quotation of Antisthenes to the urn. The identifier for the scholia, taken from the Homer Multitext encoding is urn:cts:greekLit:tlg5026; if we add the Pontani edition from the TLG, it becomes urn:cts:greekLit:tlg5026.tlg018. This should be one of the three basic urns on which to start a project employing the CTS architecture. This is the example from Berti (2014-15, par. 2.1) of how to state that an author quotes another author (in this case that Atheneus quotes Istros in the *Deipnosophistae*): urn:cite:perseus:lci.2.1 quotes urn:cts:greekLit:tlg0008.tlg001:3.74e#Ἰστρος-συκοφάνται. To be precise, Berti states that the edition of Istros used in the Perseids proof of concept quotes the passage of Atheneus where he quotes Istros, so urn:cite:perseus:lci.2.1 (the Perseus Collection object that represents the edition of Istros) quotes urn:cts:greekLit:tlg0008.tlg001:3.74e#Ἰστρος-συκοφάνται, the text of Atheneus where the passage can be found. If we use the Odyssey of Pontani as a starting point for the quotation of the scholia, the Schrader edition for Porphyrius and the Decleva-Caizzi for Antisthenes we will have, urn:cts:greekLit:tlg0591.tlg001 (Antisthenes) quotes

urn:cts:greekLit:tlg2034.tlg016

(Porphyrius)

quotes

urn:cts:greekLit:tlg5026.tlg018:1.1e#οὐκ ἐπαινεῖν-ἀπόβλητον λόγον (Scholia). If we look at the list of editions mentioned above, it is understandable that there is also the issue of subjectivity to be taken into consideration. We need to use identifiers clearly, stating whether we are referring to a specific edition or to a work in general. It seems that there are two different paths to follow, one is the encoding of all these editions and the other one is the encoding of one edition with all the relevant information from the other editions available in the form of a commentary. If we think about the “Comprehensive Odyssey”, the second solution seems more appropriate, but if we are thinking of publishing a digital edition of Porphyrius, then the first approach should be followed. The most important achievement to be gained with the implementation of the CTS architecture is to make the relationships between authors and editions explicit so that textual searches in the repository of the “Comprehensive Odyssey” will return more detailed and comprehensible results. The implementation of the *Perseids* platform will be of assistance in the representation of the quotations and of the texts re-uses together, meaning that we could see the lost works within their “embedding context” (Berti and Almas, 2013, par. 2.1). In our example, we could see Antisthenes and all of his sources and witnesses, which means Porphyrius together with all of his sources and witnesses.

It is possible to understand better the importance of the above mentioned passage of Porphyrius if we go back to Luzzatto’s argument mentioned above. She is one of the scholars who uses this discussion on πολύτροπος as a way of explaining the variant ‘πολύκροτον’ in the *Odyssey* (1996). Antisthenes and Socrates are attempting to rehabilitate Odysseus, creating a hero who was the opposite to that of Sophocles in *Philoctetes* and to that described by Hippias. It is in this argument, as Luzzatto points out (1996, p. 297), that the variant ‘πολύκροτον’, found in the *Scholia vetera in Nubes* and in a fragment of Hesiod, should be placed. This variant might also originate from a trivialization of the meaning of πολύτροπος into changeable, ποικίλος, whose meaning is “confirmed by the variant ‘πολύκροτον’ and from the relationship with the Hesiodic fragment” (translation, 1996, p. 313). Along the same lines stands Fabio Massimo Giuliano in his paper on Odysseus in Plato (1993, pp. 45-46). He argues that πολύτροπος had been interpreted negatively compared to the ἀπλότης that characterizes positive heroes. Giuliano reports that the meaning of πολύτροπος created many problems, leading to the creation of the variant ‘πολύκροτον’.

This was previously argued by Wilamowitz-Moellendorf (1919) in his book on Plato. The author describes the discussion of Socrates and Eudicus with Hippias about

Achilles and Odysseus. Here Wilamowitz-Moellendorf (1919, p.136¹⁵¹) states that Odysseus is the ‘most cunning’ (verschlagenste), which is how πολύτροπος should be translated (1919, p. 136). He explains that the term πολύτροπος itself raises some questions and he cites the existence of a variant, even if he does not mention the word but only refers to one found in Plato’s text, suggesting that the reader should compare it to the Hesiodic fragment from the *Catalogue of Women*. In his opinion, it is also possible to understand the existence of the variant by looking at the difficulties that Antisthenes had in explaining this *locus Homericus*, as can be seen in the scholia.¹⁵²

2.8 Conclusion.

Finally, I should like to underline that two conclusions may be drawn from the analysis of πολύτροπος and πολύκροτος.

First, deciding what to include in the secondary sources is not always straightforward. As we have stated, it is only possible to make a decision about this by reading commentaries and looking at critical apparatuses. If a source can be found in a critical apparatus, it means that it was considered important by an editor in order to understand the variants. It will be integrated in this edition because one of the strongest points in this project will be the possibility to retrieve all the variants in the indirect tradition and in the scholia. While it is true that the *apparatus testimoniorum* of the scholia cites the *Hippias Minor*, one can find there only that the “Hippias verba in Ulixem πολύτροπον referent” (Pontani, Scholia, vol.1, p.8). If the text of the *Hippias Minor* were to be encoded in this edition, the question might be raised as to how many other texts should be included which cannot be found in any critical apparatus of the edition but which may be found in the *apparatus testimoniorum* of the scholia? Our opinion is that one has to draw the line at some point, but also that providing the apparatus of the scholia is similar to giving someone the chance to look ahead and know

¹⁵¹ “Odysseus der Verschlagenste, wie wir hier den „polytropos“ übersetzen mögen; etwas Ähnliches, allein durchaus zu Ehren des Helden hatte der Dichter wirklich mit der Neubildung gemeint. Das Wort bereitete schon damals Schwierigkeiten... Es hat sogar schon vor Platon zu einer Änderung der Lesart geführt, vgl. Berliner Klassikertexte V 1, S. 29” (A.N. This is a reference to the Hesiodic Fragment in the edition of W. Schubart und U.von Wilamowitz-Moellendorff, published in 1907 in the Berliner Klassikertexte series). “Wenn Antisthenes in den Scholien zu dem Verse sich mit der Erklärung abmüht, so zeigt seine Beziehung auf dieselben Homerstellen und auch die Heranziehung des weisen Nestor, daß er den Platon (364c) vor Augen hat”. Wilamowitz-Moellendorf (1919)

¹⁵² A more specific understanding of the meaning of πολύτροπος, particularly when thinking about a German translation, can be found in these two articles: Kakridis Theophanes, 1921 and Linde P., 1924. Theophanes Kakridis describes two meanings of the word πολύτροπος, πολύπλαγκτος, and “vielgewandert” from Nitzsch, or πανοῦργος, ποικίλος, “vielgewandt” from Lehrs. P. Linde expresses the position that the meaning of the word πολύτροπος can be understood from a comparison with other passages of the Homeric poems.

how to take the analysis of a single line, or even a single word, further. Our reasoning here means not forgetting that subjectivity and personal judgement are definitely going to play a part in making decisions about which sources to encode. It seems unavoidable that if we have to decide which edition to encode of a secondary source found using the TLG, we shall look at its critical apparatus. By so doing, we will be struck by other links and connections and then the final decision will not be made following a precise criterion such as: “We shall encode only those sources that quote an exact verse or a verse with a variant”, but will result in a single decision that will differ from case to case. As has been pointed out, the possibility of developing a platform such as *Perseids*, which will result in the chance of adding commentaries to the edition and in the creation of a collaborative environment, will help deal with this problem. It is impossible to avoid subjectivity but, at least, any decision will be the result of the joint effort of a group and, since this is a digital project, it will always be possible to add a source at a later stage, should it be considered necessary. When we stated that we should draw the line, we are not saying that we will not make a decision or that we will encode fewer sources than possible. We only say that Guidelines should be established, mainly if we would like this project to become a collaborative endeavour, and, for this reason, they must be clear. The question of the *apparatus testimoniorum* of the scholia is different since it pertains to the editing of the scholia, together with the quotation of passages from other sources. Some of them might already be found in the secondary sources, some not. In the “Comprehensive Odyssey”, this apparatus is encoded within a <note element>, but if it were to be encoded in a more detailed way, CTS architecture should be applied for every source cited, so that it can, at least, be identified for further textual searches. As an example, we can look back at the *apparatus testimoniorum* of the passage that quotes Porphyrius, cited above. In this extract, we find these works mentioned: Antisthenis Περὶ Ὀδυσσεΐας, Plato Hipp. min. 363b-365c, Maximus Tyrius diss. 22,5, Porphyrius vita Pythagora 18 (= Dicaearch. fr. 33 Wehrli) and Eusthatius in Odisseam 1381, 28 and 40-46. Each of this sources should be encoded together with its urn:cts, so that the text in the apparatus will be recognised as a source, an edition, a work, and can be tracked down in specific searches. Furthermore, the decision will be made as to whether to encode the text of the source or to point to external editions, if available. In this way, we agree that it is impossible to avoid subjectivity, but, at least, there will be a communal decision on how to encode the occurrence of sources and works.

Secondly, there is the question of which edition to choose when an author is quoted by another author. In this case, if the text of Porphyrius is cited, the fragment of Antisthenes (the scholia having already been encoded) should also be mentioned. There might on other occasions be the problem of which text to transcribe under each author, but this is not the case here because the edition which is reproduced remains that produced by Schrader. The texts may differ not only in terms of minor details, but also in major details, depending on whether Schrader's philological interventions are accepted or not.

Our edition awards more importance to the text and to each author because the transcription of every secondary source obliges the editor to focus on each of them during the encoding process. It also requires the editor to realise that there are editions that include the entire collection of the fragments/citations of an author, but which do not incorporate a new critical edition of them. In the aforementioned example, the editor of a digital edition will ask himself why Decleva-Caizzi (1966) and Giannantoni (1990) reproduce the text published by Schrader (1890) in an edition of Antisthenes, while Schrader was editing Porphyrius. They followed his edition without posing themselves any questions, not caring, for example, to attest the readings of Ludwich (1889-90). We strongly feel that encoding is like looking back at each text, questioning the editions which are available in order to be better informed when making any choice, because in the use of an edition, or of a distinct text, one can shed a different light on the text and on its meaning. It will be impossible for the editor to answer all the questions in every case that might appear in the "Comprehensive Odyssey" once the entire text of the *Odyssey* has been encoded, but such an examination will definitely afford a better understanding of the importance of the text, calling for collaboration by experts on a specific author.

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