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I regret that the restrictions on air travel have prevented me from delivering this paper in person!

Rediscovering Homer: Manuscript Digitization and the Homer Multitext Project

It is a pleasure to have been invited to this conference to talk to you about the Homer Multitext Project, and how the digitization of ancient manuscripts fits into that on-going research project. This project, which began almost 10 years ago now, seeks to present the Homeric *Iliad* and *Odyssey* in a critical framework that accounts for the fact that these poems were composed orally over the course of hundreds, if not thousands of years by countless singers who composed in performance. [SLIDE 2] The project has been from the beginning a collaborative one between colleagues with various strengths and abilities and from a variety of different kinds of institutions all over the United States and Europe. My own particular research focus has always been the Homeric epics and the oral tradition in which they were composed, but our team includes computer scientists, conservators, and photographers, philologists, art historians, codicologists, papyrologists, and historians.

The question that has driven all of our research for the past ten years is this: “How do you make a critical edition of an oral tradition, like that of the Homeric *Iliad* and *Odyssey*, that spanned a thousand year or more? What is the best way to represent the textual history of songs that were created in and for performance? The practice of textual criticism, as applied to most humanistic texts, has the goal of recovering the original composition of the author. [SLIDE 3] To create a critical edition, a modern editor assembles a text by collating the various written witnesses to an ancient text, understanding their relationship with each other, knowing the kinds and likelihoods of mistakes that can occur when texts are copied by hand, and, in the case of poetry, applying the rules and exceptions of the meter as well as grammar. The final published work will then represent what she or he thinks are the author’s own words (or as close to this as possible). An editor may follow one manuscript almost exclusively, or pick and choose between different manuscripts to compile what seems truest to the original. The editor also places in the *apparatus criticus* at the bottom of the page what s/he judges to be significant variants recorded in the witnesses. The reader then must rely on the editor for the completeness of the *apparatus* in reporting variants. For a text that was composed and originally published in writing, this goal of recovering the original text is valuable and productive, even if it may never be fully achieved because of the state of the evidence. But is this the right approach for Homer?

The concept of a digital variorum edition, which is essentially what the Homer Multitext is, is not new. But these kinds of projects very often have a fundamentally different goal than what we have for the Homeric poems. The Cervantes Project digital library, while capturing variation in the textual tradition in an Electronic Variorum Edition, does so for the stated goal of producing “a more correct edition closer to Cervantes’ original manuscript” (Monroy et al. 2002). Similarly, it has been argued that a variorum edition of John Donne’s poetry has allowed the restoration of a particular line “to its original form” (Stringer 1999, 91).

For an edition of *Don Quixote de la Mancha* or the poems of Donne, this goal is appropriate to the fundamental notion of an original manuscript of an individual author and a text composed in writing.

But since the *Iliad* and *Odyssey* were not composed in writing (Lord 1960, 1991, 1995; Parry 1971), this editorial system cannot be applied in the same way. The Homeric epics derive from a long oral tradition in which they were created, performed, and re-performed, all without the technology of writing. This fundamental difference in the composition and history of this poetry means that we must adjust our assumptions in our understanding of the variations that we find in the written record. What does it mean when we see variations, which still perfectly fit the meter and language of the poetry, in the various witnesses to the texts? In the papyri and medieval manuscripts and ancient sources that preserve the *Iliad* and *Odyssey*, we often find shorter versions and longer versions of passages, or one line in place of another. This is only to be expected in oral derived texts. Instead of “mistakes” to be corrected, as an editor would treat them in the case of a text composed just once in writing, we should view these variations as testaments to the system of language that underlies the composition-in-performance of the oral tradition.

Yet it is difficult to indicate the parity of these multiforms in a standard critical edition on the printed page. As I have noted, one version must be chosen for the text on the upper portion of the page, and the other recorded variations must be placed in an apparatus below, often in smaller text, a placement that necessarily gives the impression that these variations are incorrect or at least less important. An approach to editing Homer that embraces the multiformity of both the performative and textual phases of the tradition—that is to say, a multitextual approach—needs to convey the complexity of the transmission of Homeric epic in a way that is simply impossible on the printed page.

The variations that the textual critic of Homer encounters come from many different kinds of sources and many time periods. In his edition of the *Iliad* in 1931 T. W. Allen included 188 manuscripts, dating from the 10th century CE on, and the relationship between manuscripts or manuscript families and their descent from earlier exemplars can be only partially reconstructed (Allen 1931). Moreover, many of these manuscripts contain extensive scholia in the margins. This commentary is derived from ancient scholarship, much of it as old as the second or even third century BCE. From the scholia that survive in our medieval manuscripts, we learn of readings attributed to the texts of various cities (some as far away as Marseilles), texts in the collection of individuals, texts called “common” or “standard,” and texts that are called “more refined” (Nagy 2004, 20).

[Slide 4] Another source for early versions of the *Iliad* and *Odyssey* is in the literature that survives from Classical Athens, especially in the Attic orators and in Plato, where we find quotations of Homer, some quite extensive, and these texts can vary considerably from the medieval texts of Homer on which we rely for our printed editions [SLIDE 4: a quotation from book 23 of the *Iliad* by the orator Aeschines].

[SLIDE 5] Some of our earliest witnesses to the text of Homer are the fragmentary papyri that survived in the sands of Egypt from the third century BCE onwards. These texts too are often quite different than their medieval counterparts. A multitextual approach can be explicit about these many different channels of transmission, placing each in its historical and cultural framework and allowing the reader to understand better their relationships to one another, rather than giving the false impression that they are all of the same kind and same time.

For this reason I and my collaborators on the Homer Multitext Project are creating a virtual library of texts, translations, and images associated with actual, complete witnesses to the transmission of the Homeric poems. The Homer Multitext seeks to present the textual transmission of the *Iliad* and *Odyssey* in a historical framework. The Multitext is designed to be able to collect historical witnesses to the text of Homer (individual Medieval manuscripts, Homeric papyri, works from antiquity that quote Homer, as well as a wide range of readings attributed to ancient scholars), and put them in a framework that allows these historical *Iliads* and *Odysseys* to be compared in various ways. By doing this, we the editors hope to provide users with a more accurate understanding of the transmission over the course of more than 2,500 years of these oral epics that were created in performance.

Making ancient manuscripts of the *Iliad* and *Odyssey* accessible to students and scholars is central to these goals. The Multitext has now published digital images of three manuscripts of the *Iliad* housed in the Marciana Library in Venice, Italy: the tenth-century manuscript known as the Venetus A, the eleventh-century Venetus B, and the twelfth/thirteenth-century manuscript known as U4. Each manuscript contains its own set of scholarly commentary in the margins, commentary that takes us as far back as the 3rd century BCE. Over the coming year we will digitize 3 or possibly even 4 more, in Spain, Geneva, and London. We have also created a library of xml editions of the Homeric papyri, and we hope to find institutions with collections of papyri who will allow us to publish high resolution photographs of the papyri in their collections. For the past several years other members of our team have been developing a collection of web based services that will soon allow users to find, search, and compare these texts and images in a variety of ways.

For the rest of my presentation I am going to focus on just one manuscript, so-called the Venetus A, and talk about how it fits into the Multitext project as a whole. In May of 2007, after many years of planning, an international team of scholars and conservators went to Venice to digitize this manuscript, and it has become the nucleus of the Homer Multitext project as a whole. It is for this one manuscript that we originally acquired our manuscript cradle, also known as the conservation copy-stand, designed by Manfred Meyer, that you can see in this slide. [SLIDE 6]

The Manuscript

[SLIDE 7] The manuscript Marcianus Graecus Z. 454 [= 822], known to Homeric scholars as the Venetus A, is the oldest complete text of the *Iliad* in existence. A scribe whose name we do not know labored to create the 654 pages of this book during the tenth century CE, the age of the Byzantine Scholar-Emperor Constantine VII Porphyrogenitus. The sight of the vellum pages with their red-brown ink brings a reader back a thousand years, but the historical reach of this manuscript extends much further. The poem it contains emerged over the course of a millennium or more from a tradition of songs about heroes and heroic deeds. The writings in the margins of this book are excerpted from the scholarship of the Library of Alexandria, as well as intellectuals who studied this poem in Rome and in Byzantium, scholarship that extends as far back as the second and third centuries BCE. More than two thousand years later, we have a new opportunity to rediscover this scholarship, and better understand the epic that is the foundation of Western literature.

The Venetus A has resided in Venice's Marciana library since the building's completion in approximately 1565 [SLIDE 8 AND 9]. The book was part of a donation by Cardinal Basileus

Bessarion [SLIDE 10 and 11], to the Republic of Venice in 1488. This donation formed the core of the library's initial collection.¹ Bessarion, who was born in a town on the coast of the Black Sea and educated in Constantinople, was a passionate collector of Greek manuscripts. The Venetus A manuscript was almost certainly produced in Constantinople, but how it came to be in Italy is not known. Bessarion spent most of his career in the church in Italy and acquired many of the volumes in his collection from the Italian humanist Giovanni Aurispa, but the surviving correspondence between the two men nowhere refers to the Venetus A with certainty. What does seem clear is that Bessarion saw in Venice the potential for a New Byzantium as the fall of Constantinople came to seem ever more inevitable.

The Venetus A resided among Bessarion's books in the Doge's Palace in Venice until a permanent building was completed to house the Library in 1565. But decades before our Homeric manuscripts came to reside in their permanent home on the Piazzetta San Marco, the technology of the written word had moved on. In 1488, in Florence, Demetrius Chalcondylas produced the *editio princeps* of the *Iliad*, that is, the first printed edition of the poem.

But with the first printing, these texts became editions, and the tradition of *multiformity* and the impulse to preserve the richness of variation through notes and commentaries fell away. The attention of the world wandered from the hand-written vellum books of the Marciana to the printed paper volumes that emerged from the printing presses of Florence, Milan, Heidelberg, Leipzig, Paris, and London.

Thus our manuscript faded from the awareness of European scholars over the next centuries, until it was rediscovered in the Marciana by the French humanist Jean Baptiste Gaspard d'Ansse de Villoison, who recognized the value of the manuscript and published a printed edition of its contents in 1788. What Villoison found on each page of the Venetus A can be seen here [SLIDE 12]. A typical folio in the Venetus A (with a few exceptions) contains 25 lines of the Homeric text, surrounded on three sides by a body of marginal notes, all written in the same minuscule hand. [SLIDE 13]

Individual comments in the main body of scholia are generally but not always preceded by lemmata in semiuncial script. In the gutters of each page and in the margins between the text and scholia are written, most likely by the same scribe, an additional set of scholia, in the same semiuncial script as the lemmata [SLIDE 13]. Outside the main column of scholia in the far outside margins of each page are sometimes additional semiuncial scholia; on a few folios these scholia are extensive, as is the case with folios 12v [SLIDE 14]. These additional scholia are often written in the shape of a cross, column, or another object [SLIDE 15]. Still more semiuncial scholia may be found between lines and very near the text in various places around the page. At the far edge of many pages are the traces of (very likely) two correcting hands (see 24r and Allen 1899:172ff.), and from the beginning of the poem up until verse 188 of book 2 an interlinear paraphrase appears in a later (thirteenth century) hand. [SLIDE 16 - 24]

We can see that the Venetus A itself was the original multitext. What is the source of so much scholarly material? The Venetus A itself tells us where many of the scholia come from. At the end of most of the books of the poem² there appears this subscription: [SEE SLIDE 25]

“Alongside the text lie the *Signs* of Aristonicus, and Didymus' work *On the Edition of Aristarchus*, as well as some things from the *Prosody* of Herodian and Nicanor's *On Punctuation*.”

¹ For this history of the Marciana library and Bessarion's donation see Labowski 1979.

² The exceptions are books 17 and 24.

So, many of the scholia are derived from the work of these four Homeric scholars from antiquity. Didymus and Aristonicus are the oldest, having worked during the 1st century BCE. Nicanor lived during the time of the Roman emperor Hadrian, the 1st and 2nd centuries CE. Herodian lived a century later, during the latter half of the 2nd century CE, under the Roman Emperor Marcus Aurelius. Scholars refer to the work of these men as the “four-man commentary”, or VMK (from the German *Viermännerkommentar*).³

But the scholia of the Venetus A contain much more than this. Many notes contain information about mythology, the meanings of obscure words, and pieces of allegorical interpretation. On the Venetus A this kind of scholia often appears as interlinear notes written in a semi-uncial script, and consists largely of short definitions of words in the poems. One of the most interesting aspects of these scholia is their lemmata. In many cases, these lemmata do not match the Homeric text that appears on the manuscript. Thus, these scholia may offer insights into alternative versions of the text, other examples of traditional material that fell out of the common text of the *Iliad* by the 9th century.

Still other scholia on our manuscript derive from the work of the scholar and philosopher Porphyry, who lived during the 3rd century CE. These scholia offer explanations of thematic matters found in the *Iliad*, cultural practices, questions of cosmology or theology, and so forth.

The Venetus A is remarkable for the care with which it was produced, and the richness of the many features that ornament the text and scholia. On the first page of each book of the *Iliad*, we find an illuminated capital marking the first word of the book [SLIDE 26]. At the top of each page that begins a new book of the *Iliad*, the manuscript includes a one-line summary or highlights of the contents of that book, in red ink. These summaries are, themselves, in the dactylic hexameter meter of Homeric poetry.

Also remarkable are the critical signs that can be found next to many of the verses of the *Iliad* and in the corresponding notes in the scholia [SLIDE 27]. These signs take us back to the second century BCE and the editorial work of the great Homeric scholar, Aristarchus of Samothrace. These signs, which served to link the Homeric text with the commentary that Aristarchus published in a separate volume, have specialized meanings, with the result that their content can often be surmised where the corresponding note has been lost. They are a precious resource, and they teach us a great deal about how Homer was interpreted more than a thousand years before the Venetus A was created.

Last but not least, there is the front matter [SLIDE 28]. Some of the initial folios of the Venetus A became detached and were rebound out of order, with several folios now missing. What we have contains extremely valuable material, including excerpts from the ancient scholar Proclus' *Chrestomathy* (the Life of Homer and summaries of all of the poems of the now lost Epic Cycle except the *Cypria*) and Aristonicus' work on the signs of Aristarchus. Painted around this text and in one case over it are illuminations from the twelfth century CE. These illuminations depict mythological scenes from the Judgment of Paris up to the fighting of the Trojan War.

The Venetus A contains the oldest complete text of the *Iliad* and it is the one on which all modern editions are primarily based, but it is invaluable to us for much more than its primary text of the *Iliad*. As we have seen this manuscript contains not only the texts of the poem but also excerpts from the commentaries of the scholars associated with the library of

³ On the VMK see Nagy 2004:6-7.

Ptolemaic Alexandria, excerpts which are copied into its margins and between lines of the text. These writings contain notes on the text that explain points of grammar, usage, the meaning of words, interpretation, and disputes about the authenticity of verses. The material contained in these marginal notes derive from scholarly works that predate the manuscript's construction by a thousand years or more. And like the ancient papyri, which give us their surprising picture of the fluid state of the Homeric text in the antiquity, the scholia give us an historical window into the evolution of the *Iliad* and *Odyssey*.⁴

The book is then more than the sum of the text on each page, and more than the sum of the text and the beauty of its presentation. The value of the Venetus A lies in the precise, intentional, compilation and juxtaposition of all of these elements, and we can assess this value, and profit from it, only through access to the pages as they appear, with a definition sufficient to make clear the tiniest and faintest of the writings they contain. Even were the physical volume in perfect condition, as when it was first produced in the 10th century, we would want high-resolution images of it; A thousand years into its life, we need the enhanced view of these folios that modern imaging makes possible, because the faintest of the text, faded by the years, is no longer legible, or even apparent, to the naked eye.

The Images

I'd like to conclude my presentation by talking just very briefly about how we captured the images of the manuscript I have been showing you today. In May of 2007 the Venetus A was photographed with a Hasselblad H1 camera with a 39 megapixel Phase One P45 digital back. The imaging took place at the Biblioteca Nazionale Marciana, under the direction of David Jacobs (a conservator from the British Library) and with the supervision of the library's director and conservation team. Jacobs and his team of conservators had spent months monitoring the condition of the book and the environment of the room at the Marciana where the work would take place. In late April, the team assembled the custom-built, mechanized conservation cradle, which Manfred Meyer designed and fabricated.

Images came from the camera and were analyzed by Classicists, both for clarity and to determine which areas of which folios merited detailed photography. Ultimately, the team took several dozen images of details on the pages. Many of these were under natural light, simple close-up images of particularly small features on the manuscript. The Classicists also requested a number of images, either full-page images or details, to be taken under ultraviolet light [SLIDE 29]. UV imaging can reveal ink too faded to be seen normally, but it is also of course quite damaging to the manuscript. Ultraviolet photography was therefore used only sparingly, but to spectacular effect.

For example, on the first page of the text of the *Iliad*, folio 12r, there is a beautiful lyre adorning the top right corner, and inside that lyre is writing that is completely illegible in both Comparetti's facsimile of 1901 and in the 2007 natural light image. (SEE SLIDE 30, 31, 32). Ultraviolet light revealed the bulk of the text, and we were able to determine that it consists of a previously known comment from mythological scholia about the way that the action of the poem begins in the tenth year of the war.

⁴ For more on the fluidity of the Homeric text in antiquity, see further below. On the ancient papyri, see Dué 2001.

Detail of folio 12 *recto* in Comparetti's 1901 facsimile
Detail of folio 12 *recto* (2007 imaging, natural light)
Detail of folio 12 *recto* (2007 imaging, uv light)

As it turned out, this comment happens to survive in three other manuscripts as well, but it is certain that other valuable material to be found only the Venetus A is fading from view just as quickly as that text in the lyre. Indeed, throughout the manuscript both the natural light images and those captured with ultraviolet light reveal text that cannot now be seen with the naked eye. [SEE SLIDE 33 and 34]

The 2007 images show that a lot has been lost in the century since Comparetti's facsimile was made. [SEE SLIDE 35, 36, 37, 38] Unfortunately, Comparetti did not have to the technology we have to today, and his images just were not good enough to be of use to scholars. Compare these two images. [SLIDE 39 and 40]

Last but not least I want to mention that a team from the University of Kentucky's Center for Visualization and Virtual Environments captured 3-D data throughout the imaging process and used it to "virtually flatten" the cockled pages. [SLIDES 41-46]

The manuscript is vast, and this project resulted in over a thousand images, which have not all been studied thoroughly. With the online publication of these images, freely accessible to all interested readers, we expect scholars, professional and amateurs alike, to add new discoveries about this manuscript, its meticulous construction, and indeed the *Iliad* itself. This process of discovery began already when we were in Venice. But it is not our intention to limit the investigation of these pages to a select group of our people. By making the Venetus A available in this new way, we hope to encourage new and collaborative ways of exploring the *Iliad*, and new methods of scholarship.

If you are interested in the technological infrastructure of the Homer Multitext, I encourage you to visit our website [<http://www.homermultitext.org>] or contact either Chris Blackwell (Christopher.blackwell@furman.edu) or Neel Smith (dnsmith.neel@gmail.com). They are eager to collaborate with others to develop the best practices for manuscript digitization and publication of complex collections of data. My co-editor Mary Ebbott (mebbott@holycross.edu) and I (Casey.Due@mail.uh.edu) are likewise happy to take questions about the contents of the project or its rationale and methodology. For the latest updates, see <http://homermultitext.blogspot.com>.

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