

# *Catullus Online*: A Digital Critical Edition of the Poems of Catullus with a Repertory of Conjectures

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**Abstract** This paper offers a detailed introduction to the digital critical edition *Catullus Online*. The fundamental problem addressed by this edition is that the poems of Catullus have reached us in a condition that is exceptionally corrupt even for a classical Latin text, so that many generations of scholars have had to work hard to reconstruct the original text. In response to this problem, I set up the project *Catullus Online* to create a repertory of conjectures and publish it online, accompanied by a digital critical edition. The paper describes how this pioneering digital philological resource was created, how it currently functions, and what reception it has encountered.

**Zusammenfassung** Dieser Beitrag bietet eine detaillierte Einführung in die digitale kritische Edition *Catullus Online*, er beschreibt die Genese des Projektes, die Funktionsweise sowie die Rezeption in der Fachwelt. *Catullus Online* versucht, das Problem des sehr fragmentarischen und schlecht erhaltenden Zustandes der Textüberlieferung zu Catull dadurch zu lösen, indem eine Sammlung von Konjekturen erstellt, online publiziert und mit einer digitalen kritischen Edition verknüpft wurde.

**Keywords** Catullus, digital scholarly editions, open access, visualisation, availability, digital philology, textual criticism

## 1 The Problem<sup>1</sup>

The poems of Catullus have reached us through a stroke of luck. They were almost entirely forgotten for most of the Middle Ages, but around the year 1300 someone discovered a copy and he took it to Verona.<sup>2</sup> The *Codex Veronensis* or *V* (as this manuscript has come to be known) was lost, perhaps already during the fourteenth century. We only know about its arrival in Verona from a Latin epigram by Benvenuto Campesani (c. 1250/55–1323), a notary from the nearby city of Vicenza. This short poem describes in enigmatic terms how, and thanks to whom, the manuscript reached Verona from afar. Much has been written about this epigram, but in the absence of further evidence we may never be able to reach a definite conclusion about where the *Veronensis* came from, nor who was responsible for its arrival.<sup>3</sup>

One thing is clear, however: the *Veronensis* contained the poems of Catullus in a thoroughly corrupt form. Some lines were probably missing; others had become misplaced; many of the signs indicating breaks between individual poems had been lost; and countless passages had been affected by textual corruption that had twisted the style, the sense and the syntax of the poems, or rendered them completely impossible to understand.<sup>4</sup> There exist no quantitative comparisons of the textual corruption affecting different authors, but it is clear that few classical Latin texts have reached us in as poor a condition as the poems of Catullus. They may well hold the record for textual corruption among classical Latin texts.

As a result of this, the *Codex Veronensis* must have presented a text that would have been hard to make sense of even for a scholar such as Petrarch, let alone for the typical reader of the time. It is fortunate that the manuscript made its way to the city of Verona, which was not only wealthy and powerful at the time, but also a centre of increasing intellectual activity, and especially of antiquarian research. Most medieval clergymen or notaries would hardly have been taken in by as confusing and unintelligible a text as that of the *Veronensis*, but in Verona Catullus had two advantages: he found curious and erudite readers, and as a local poet he could

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1 This paper has been prepared for publication by the author in the course of the research project no. 116524 (The textual transmission and the manuscripts of the poems of C. Valerius Catullus) funded by the Hungarian National Research, Development and Innovation Office (NKFIH).

2 On the transmission of the poems of Catullus see now Kiss (2015b) and (2016).

3 The epigram is transmitted in the primary manuscripts *G*, at fol. 36r, and *R*, at fol. 1r (on these sigla see p. below). For a detailed discussion with references see Kiss (2015c) 2–9.

4 According to a view that goes back to Scaliger (1577) 4 the corruptions in the surviving manuscripts of Catullus would be due to the difficult script of the *Veronensis*, or possibly to its poor state of conservation. But many of the corruptions must go back further: see Kiss (2015c) 15–23.

count on their especial interest. No wonder that the codex was given a triumphant reception, as is shown by Campesani's epigram.

It is likely that the first readers of Catullus in Verona already started to correct the text of his poems. This can be proven with a degree of likelihood for the Veronese notary Guglielmo da Pastrengo, a friend of Petrarch's who was active around the middle of the fourteenth century.<sup>5</sup> Petrarch may well have tried his hand himself at correcting Catullus.<sup>6</sup> The effort to correct the text of Catullus gathered speed during the fifteenth century and it has been continued with varying intensity ever since. It is thanks to this that modern critics have been able to reconstruct the poems of Catullus with a clarity that would have astounded Benvenuto Campesani. But the relative lucidity of the best modern editions such as those of Mynors, Goold and Thomson should not blind us to the fact that our grasp on the poems of Catullus is precarious, more so than that on most other ancient texts. The reconstruction of many passages remains controversial; and no doubt more undetected corruptions are lurking undetected in our editions.<sup>7</sup>

It was when I started writing a doctoral dissertation on Catullus' poem 68 at the Scuola Normale Superiore di Pisa in 2005 that I was confronted with this problem. Two years later I discovered a set of 113 collations (exhaustive textual notes) and transcriptions of the surviving manuscripts of Catullus among the papers of Berthold L. Ullman at the University of North Carolina at Chapel Hill. With the help of this unique resource, I decided to embark on a major research project to attain a better reconstruction of this outstanding work of classical literature.

I should emphasize here that my principal aim was not to create a new edition. Reconstructing what Catullus wrote is (for all the wrangling between critics) a collaborative effort that has been moved forward by the conjectures of individuals as different in temperament and approach as Politian, Scaliger, Karl Lachmann, Emil Baehrens, Robinson Ellis and John M. Trappes-Lomax. Conjectures do not come to one on command, especially in texts that have been studied by competent scholars for centuries; and the *Codex Veronensis* was so desperately corrupt that one can only aim to be approximate in correcting its mistakes. As a result, editing Catullus is bound to be a work in progress for the foreseeable future.

I set myself two objectives to facilitate this task: to map out the manuscript tradition and to draw up a repertory of conjectures. Drawing up a repertory of conjectures involves gathering all the conjectures (attempts to correct a supposedly corrupt passage in the text) that have ever been made for Catullus. On the other hand, mapping out the manuscript tradition means studying the surviving manuscripts

5 Kiss (2015d) 145–149.

6 Kiss (2015b) xvii with references.

7 For recent discussions of the text of Catullus see Harrison (2000), Trappes-Lomax (2007) and the papers collected in Kiss (2015a).

and establishing their origins and their source value. In the case of Catullus, we have to do with about 126 surviving manuscripts (the exact tally depends on our definition of a manuscript). The key question to ask is whether all of them descend from the four oldest ones, known as the primary manuscripts: the *Oxoniensis* or *O* (*Oxford, Bodleian Library, Canonicianus Class. Lat. 30*), copied in northern Italy in the fourteenth century; the *Sangermanensis* or *G* (*Paris, Bibliothèque Nationale de France, lat. 14137*), copied in Verona in 1375; the *Romanus* or *R* (*Vatican, Biblioteca Apostolica Vaticana, Ottobonianus lat. 1829*), copied in Florence between 1375 and about 1395; and the cuckoo's egg that does not descend from the *Veronensis* and only contains Catullus' poem 62, namely the *Thuaneus* or *T* (*Paris, Bibliothèque Nationale de France, latin. 8071*), an anthology of Latin poetry copied around the year 850 in central France. The relationship between these four principal manuscripts has already been mapped out; it is clear that they are independent of each other and thus all have source value.<sup>8</sup>

## 2 The Project

Shortly after obtaining my doctorate in 2009, I applied successfully to the Ludwig-Maximilians-Universität München for a two-year Research Fellowship to conduct a research project that aimed to create an online repertory of conjectures for Catullus. The project was later extended by two more years. It received generous funding from the excellence initiative *LMUexcellent* and was hosted jointly by the Abteilung für Griechische und Lateinische Philologie and the newly founded Center for Advanced Studies of the university.

The aim of the project was to create an online repertory of conjectures for Catullus. A repertory of conjectures (known under a variety of names, including “thesaurus criticus”) had only been drawn up for a small number of Latin and Greek authors (apparently only four since the middle of the twentieth century<sup>9</sup>) and had always been published on paper, most often by Brill. These printed repertories have the advantages of prestige, durability and clear presentation. Yet their price probably places them outside the reach of most scholars, and of a significant number of research libraries.<sup>10</sup> So many scholars can only consult these books in a

8 On the principal manuscripts see now Kiss (2015b). The relationship of *OGR* has been mapped out conclusively by McKie (1977).

9 For the works of Aeschylus: Dawe (1965), for Propertius: Smyth (1970), for Pindar: Gerber (1976); and for the tragedies of Seneca: Billerbeck-Somazzi (2009).

10 As of 8 September 2017, Billerbeck–Somazzi (2009) was on sale at the website of Brill for € 113 or \$ 137.

library, but in entire countries and even continents there may be no copies of them at all. That seems a sad fate for a scholarly work of reference. On the other hand, publishing a repertory of conjectures online has the obvious advantage of making it accessible immediately to anyone in the world with an Internet connection. A digital repertory also has other advantages: it enables one to add search functions and internal connections within the material, which can be more sizeable than in a printed volume, and the publication can be updated from time to time to take into account freshly appeared conjectures.

At the start of the project I decided that the digital publication would consist of a number of additional elements alongside the repertory. Most importantly, I chose to include a text of the poems of Catullus, so that together with the repertory it would serve as a digital critical edition. Further elements would include images of the primary manuscripts, a critical edition of the *testimonia* (quotations from Catullus in surviving ancient and medieval texts, which have source value of their own) and a full bibliography. The publication would be searchable and its parts would be interconnected. In reliability, visual elegance and user-friendliness it would aim to reach the same standard as a comparable printed publication. It would be backed up by software that would be compatible with all the major browsers in use, and it would be as simple and as durable as possible.

Lacking a background in Digital Humanities, I was not aware of any model to follow, apart from the digitalized books and the simple text-only online publications that were fairly common even back in 2009. In fact, the Text Encoding Initiative (TEI) consortium had already set guidelines for digital critical editions, and the project *Musisque Deoque* had already put online critical editions of Latin literature in a convenient digital format.<sup>11</sup> It would not have been possible to follow either model in my project, but they would have offered an interesting starting-point. The guidelines of the TEI are highly intricate, while the system used by *Musisque Deoque* is somewhat simpler, but both are similar in that where a traditional critical apparatus has a continuous run of text, they provide for individually encoded and tagged critical notes. This rich format has advantages in presentation and in use—the greatest benefit is that the search function of *Musisque Deoque* takes into consideration alternative reconstructions of the text—but it has the crucial disadvantage that the apparatus has to be marked up (converted into software code) manually or semi-automatically, which is very time-consuming even for the average critical edition, let alone for a repertory of conjectures that contains many thousands of readings.<sup>12</sup> As far as I know, there exists to date no fully automatic

11 On TEI see <http://www.tei-c.org>; for *Musisque Deoque* (<http://www.mqdq.it>) see Mastandrea et al. (2007).

12 In fact, most of the editions available in the *Musisque Deoque* database (Mastandrea et al. (2007)) are simplified versions of earlier printed critical editions, with a strongly abridged

system of marking up a printed critical apparatus. The TEI guidelines have the additional advantage of providing tags that are designed to be especially durable and robust.

After this initial phase of planning, most of the project was taken up by the actual research: searching for conjectures and other readings to be included. For the greatest part, this took the shape of a traditional bibliographical survey: I read articles and other works of scholarship, studied critical apparatuses and skimmed all sorts of publications. Apart from thousands of conjectures, this process yielded a steady stream of bibliographic puzzles that needed solving: for example, do there exist textual variants in different copies of the first Aldine edition of 1502, and which reprints of Roszbach's 1854 edition offered any novelties?<sup>13</sup>

If I have been able to track down the greatest part of the conjectures that have ever been made on Catullus, this is thanks to three kinds of resources. The brunt of the research took place in the outstanding libraries in Munich—not only the Bayerische Staatsbibliothek and the libraries of the Ludwig-Maximilians-Universität, but also those of the *Monumenta Germaniae Historica*, the *Thesaurus Linguae Latinae* and the Franciscan Monastery St. Anna im Lehel. Second, I have benefited from the resources of libraries outside Munich, both through the excellent German inter-library loan system and through research visits to libraries elsewhere in Germany and in Belgium, France, Hungary, Italy, Poland, Russia, the UK, the USA and the Vatican.<sup>14</sup> Third, the research had an important digital component. I benefited greatly from the fact that an increasing number of relevant publications were available online, including journal articles and editions and commentaries published before 1920. Moreover, thanks to the support of Professor Cecil W. Wooten and his colleagues at the Department of Classics at Chapel Hill, I was able to employ two of their students to make scans of the collations and transcriptions of manuscripts of Catullus conserved among the papers of Berthold L. Ullman at their department. About half a dozen important manuscripts were not documented at Chapel Hill, and I obtained a reproduction of each of these, or I proceeded to transcribe it myself. I did the same for five incunables, that could be consulted neither online nor in the Munich libraries. As a result, I came to possess a collation, a reproduction or a transcription of all known

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critical apparatus. These cuts may well have been made in order to save time during the mark-up process, in order not to give the editions a cluttered appearance, or for both reasons.

13 I have found no textual differences between the copies of the first Aldine (Avanzi–Manuzio (1502)) that I have been able to consult. But I cannot exclude that there were some; the volume had a print run of three thousand copies. A second edition of Roszbach 1854 appeared in 1860. There also exist unaltered reprints of both editions.

14 For further details see the section “About the website” in Kiss (2013).

manuscripts of Catullus that were copied before 1520, and of all printed editions from the editio princeps of 1472 up to the first Aldine of 1502. It would have been far harder to assemble such a database on paper and I would not have had the luxury of being able to carry it around in the hard disk of my computer. Digital technology also made it possible to draw up the repertory in a series of Excel tables that I could consult and modify at will. It would have been extremely time-consuming to use a card index to register what turned out to be many thousands of conjectures and textual variants.

In parallel with drawing up the repertory, I started to work on the realization of an online platform for its publication. One of the classicists with experience in IT whom I consulted at the start of the project advised me to acquire the necessary programming skills and construct the platform myself, but it was not clear whether this was feasible within the timeframe of the project, especially in view of the need for me to work on the apparatus. So, at an early stage I started looking for an IT specialist to construct the platform. It turned out to be surprisingly hard to find a suitable candidate: I started working with four individuals and groups before a fifth try led me to the small Hungarian IT firm Woodpecker Software, who performed the task admirably. We signed a contract in 2011 for the construction of the platform. For the visual design of the website we selected the award-winning Hungarian design firm Stalker Studio, which was employed by Woodpecker Software as a subcontractor. The platform was constructed during the first months of 2012, and we used the rest of the year for trouble-shooting and quality control and to make a number of adjustments to the platform. It was a particular challenge to recreate the rich typography of a printed critical apparatus. Practically all problems could be solved and the website *Catullus Online* was inaugurated on 24 January 2013.<sup>15</sup>

### 3 The Publication

The domain name “<http://www.catullusonline.org>” leads to the opening page of *Catullus Online*. This page is shaped like a long scroll. Its central section contains, written in black on a cream-coloured background, the Latin text of all poems of Catullus transmitted in the *Codex Veronensis*. This is one of the three ways in which

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15 Special signs such as ampersands and pointed brackets posed problems, as did the alternation between plain text and italics in the critical apparatus, but a solution could be found for all these difficulties. An unexpected problem was posed by transposition, as the platform required verse numbers to stand in a natural sequence. Most recent editors have accepted Muret’s transposition of 58b.3 before 58b.2. In *Catullus Online* I had to renumber these lines as 58b.1b and 58b.1c.

the poems can be visualised on the website. This visualisation offers a carefully edited, clean reading text that is aimed at all those who would like to read a good edition of Catullus on the internet. One can access this page quickly from other parts of the website by clicking on the heading “POEMS” in the menu on the left.

The second heading in the menu, “POEMS WITH APPARATUS”, leads to a different mode of visualisation. This resembles the first mode, but on the right besides each verse there now appears at least one of four icons: dark squares in which a triangle, a square, a quotation mark or a cross has been spared out. By clicking on these icons, one can access the materials accompanying the text that form the main contents of *Catullus Online*.

The most important type of icon is the first one, bearing a triangle, which leads to the critical notes that may accompany a verse. These contain a section of the repertory of conjectures that serves as an especially rich critical apparatus. Besides each verse there appear the textual notes on sections of text starting with that verse, and on that particular verse alone; thus, a proposal to delete Catullus 1.9–10 is listed before the notes on verse 1.9. All these notes appear on the right besides the verse; where they occupy more than one line, the following verse has been moved further down, so that the text and the notes do not become misaligned. Given the number of problems in the text of Catullus and the richness of the repertory of conjectures, there are textual notes on almost every single verse. These vary in length from just a few words to several dozen lines in the case of an especially problematic verse such as 1.9 or 25.5.

The other three kinds of icon bear rectangles, quotation marks and crosses and they lead, respectively, to images of manuscripts that transmit the verse in question, to the testimonia or ancient quotations that contain the verse, and in the case of a few exceptionally controversial passages to an additional overview of the different reconstructions that have been proposed. These three items appear in a separate area resembling a pop-up window in front of the text. The images of the manuscripts can be opened up in a separate window, enlarged further and downloaded according to the wishes of the user.

As has been discussed above (at page 100–102), the three oldest surviving descendants of the *Codex Veronensis* (*OGR*) and a ninth-century anthology containing poem 62 (*T*) all have source value as they are independent from each other. They are known together as *TOGR*. Thanks to the funding provided by the Ludwig-Maximilians-Universität München and the helpful collaboration of the Bodleian Library (Oxford) and the Bibliothèque Nationale de France (Paris), it has been possible to publish through *Catullus Online* high-resolution images of *TOG*. The online publication of *TG* has been approved free of charge without a deadline, while the publication of *O* has been approved after the payment of a fee for an initial period of five years, set to end in January 2018; I am about to start negotiating



about an extension to this period. The fourth principal manuscript of Catullus, *R*, is conserved at the Biblioteca Apostolica Vaticana (Vatican City), the regulations of which do not currently allow for the online publication of high-resolution images on a website that does not belong to the library. My hope is that either these rules will be relaxed, or else a reproduction of *R* will eventually be made available through the library's own digitalisation programme. So at present *Catullus Online* only contains images of *TOG*, which can be accessed via the square "manuscript" icon present in the apparatus besides each line transmitted in these codices, but there is also a full gallery of the images of each manuscript that can be accessed via the heading "MANUSCRIPTS" in the menu on the left. That heading leads to a short description of each of the principal manuscripts, followed (where appropriate) by a link to the images of each manuscript. These descriptions are followed by a list of all surviving manuscripts of Catullus.

The icons bearing quotation marks lead to a critical edition of the *testimonia* (ancient quotations) of the verse in question. All the *testimonia* of Catullus can also be consulted together by clicking on the heading "TESTIMONIA" in the menu on the left. The fourth kind of icon, bearing a cross, leads to an additional reconstruction. At present this is only available for four especially problematic passages (25.5, 29.20, 68b.157–8 and 107.7–8) which have been reconstructed in so wildly different ways that it has seemed worth the trouble to offer a separate overview.

All these elements can be reached piecemeal through the icons accompanying the poems of Catullus in the mode of visualisation "POEMS WITH APPARATUS". Both here and in the text-only mode of visualisation there stands on the upper right a panel inscribed "SHOW FULL APPARATUS". Clicking on this panel yields the third mode of visualisation: there appear the poems of Catullus accompanied on the right by the full critical apparatus, that is, the complete repertory of conjectures. It is important to be able to study the repertory as a whole because as has already been pointed out, different conjectures and textual problems are often interrelated.

It should be clear by now that there is a certain tension between two objectives of *Catullus Online*, namely offering a good reading text of the poems of Catullus and creating a research tool for their study. This manifested itself even in the constitution of the text, which has had to be fairly conservative, so as to serve as a convenient grounding for the repertory. A radically innovative edition with many bold deletions, transpositions and emendations would have made it harder to relate any given conjecture to a particular passage.

Scholars and casual readers alike are bound to benefit from two functions that have been inserted into the left margin of the website, in between the items in the menu. The first function enables one to search in the text of the poems, the critical apparatus and/or the *testimonia* for a given sequence of letters. The second function lets one jump to a given passage within the poems without having to scroll up or down.

The menu on the left also contains a link to the one substantial section of the website that has not been named yet, namely the bibliography. This contains all the publications mentioned in the critical apparatus, by name of the author and year of publication. The consultation of the bibliography is rendered easier by the possibility of jumping from the start of the list to entries beginning with any letter of the alphabet. This is especially important in a list of such a length: as of 25 November 2019, the bibliography counts 932 entries.<sup>16</sup>

The menu also includes four sections with text only, headed “ABOUT THE WEBSITE” (on its aims, character and creation), “ABOUT THE REPERTORY” (on its contents and the transmission of the text of Catullus), “CONTACT” (with the contact details of the editor) and “HELP” (with brief instructions about using the website). All these sections are in English, which is used everywhere in the website except in the repertory, which uses the concise, strongly abbreviated Latin that has been the mainstay of critical apparatuses.

Considerable care has been put into the visual design of the website. Each page within it (except for the images of manuscript pages) uses the same characteristic header, which bears the words “CATULLUS ONLINE” in white and brown against a brick-red background, accompanied on the right by the image of a young man wearing a toga against a sky-blue background. This is part of a fresco fragment from the great Augustan villa in Sirmione (Brescia, Italy) showing a bare-footed young man holding a book roll.<sup>17</sup> I regard it as very likely that this fragment depicts Catullus.<sup>18</sup> It seemed appropriate to use this fragment in the header of the website, the colour scheme of which is based on this fresco and on the manuscripts of Catullus. I am very grateful to the Soprintendenza per i Beni Archeologici della Lombardia for having provided me with this image and for having permitted me to use it on the website free of charge, through the mediation of Dr Elisabetta Roffia.

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16 There is no easy way of calculating the number of conjectures and other readings included in the repertory; on the basis of several samples I estimate that their total number may be around 15,000.

17 For a complete reproduction see Roffia (2005) 87, cf. 41–3 on the date of the villa and its frescoes. I have benefited greatly from discussing this fresco fragment with Dr Elisabetta Roffia and Professor Marilyn B. Skinner. While the views on the fresco set out here are my own, they can hardly be called original.

18 The gold ring on the left hand of the young man and his *tunica angusticlavia* (tunic with a narrow band) place him in the social class of Roman knights or *equites*, his bare feet confer heroic status on him, and the book-roll in his hands places him in the world of learning and literature. His face has been depicted realistically; he is an individual rather than a generic type or an idealised character. He was depicted about half a century after the poet’s death on the walls of a villa erected on the site of Catullus’ family estate at Sirmione, described in poem 31. It is hard to see who else would be described in this specific way in this location.

The Sirmione fresco fragment has been one source of inspiration for the design of the website; the principal manuscripts of Catullus, and in particular the calligraphic *Oxoniensis*, have been another. They yielded not only the colour scheme of black, brown, brick-red and cream, but also the horizontal and vertical lines in the text field and the brick-red verse numbers, which imitate the careful ruling and the miniated initials of medieval manuscripts.

Not so conspicuous but no less important is the digital platform behind the website—its structure, as it were. This platform has been tailor-made for *Catullus Online* by the engineers of Woodpecker Software using the programming language PHP and the open-source database management system MySQL. Before its launch in January 2013, it had been optimised for the browsers Mozilla Firefox and Chrome, but it also functioned fairly well with Internet Explorer and Safari. It appears to be compatible with Android and iOS browsers, even though it was not optimised for the browsers on mobile phones. The site is still hosted by the server of Woodpecker Software. I continue to hold the rights over the domain name.

## 4 Reception and Afterlife

*Catullus Online* was inaugurated in a rather traditional way, on 24 January at the Center for Advanced Studies of the Ludwig-Maximilians-Universität München at an event that aimed to bring together many of the people who had made this project possible. After words of introduction by Dr Sonja Asal of the Center and Prof Claudia Wiener of the Abteilung für Griechische und Lateinische und Griechische Philologie, and *Catullus Online* was presented by János Gerevich, Managing Director of Woodpecker Software, and by me.

During the subsequent days I announced the new publication on a number of mailing lists and in Facebook groups dedicated to the classics and to digital humanities. These announcements seem to have had a snowball effect, as there appeared notices about the resource in further blogs and other online publications. There also appeared a link to *Catullus Online* in the *Wikipedia* entry on Catullus.

I wrote individually to a number of scholars working on Catullus around the world to inform them about the website. A handful of others had already received the link while the website was being tested and fine-tuned. Quite a few colleagues had been aware of the project thanks to a conference on the textual criticism of Catullus that I had organised at the Center for Advanced Studies in 2011.<sup>19</sup> I also

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19 For an account of the conference see Portuese (2011). Six of the eight papers delivered at the event provided the basis for the chapters of Kiss (2015a).

presented the website at a number of universities and at national and international conferences in France, Hungary, Spain, Switzerland and the UK.<sup>20</sup>

On balance, *Catullus Online* has been fairly well received by the scholarly community. Within two years after its publication it received a long review article in the section “Catulliana” of the Italian journal *Paideia*; more recently it has been reviewed on the blog of the Society for Classical Studies in the USA.<sup>21</sup> As of November 2019, it has been quoted at least forty-one times in print, mostly in connection with the textual criticism of Catullus, but also as an early example of a digital critical edition. On a more personal level, several dozen colleagues have complimented or congratulated me for the website. Lecturers at universities in Argentina and the UK have assured me that they use it in their teaching. On the other hand, several classicists have let me understand that they regarded *Catullus Online* as far inferior to a printed book. This has happened repeatedly in the context of job applications and other professional evaluations; the most extreme instance took place when a member of a search committee for a position in the USA told me that she hoped I had not published “a disgusting website”. It seems safe to say that today a digital publication in the classics such as *Catullus Online* calls forth a mixed bag of reactions, many of which are positive (especially if they are coming from the actual users of the publication), but not all. Early digital publications certainly have their shortcomings, and *Catullus Online* is no exception; but at times they receive criticism and even contempt that have to do not with their actual characteristics, but with fear of media change and an attachment to traditional forms of publishing.

*Catullus Online* aimed to reach not only a small circle of specialist scholars, but also a broader public with an interest in the poems of Catullus. The extent to which this has succeeded can be judged by the usage data provided for the domain “www.catullusonline.org” by Google Analytics. According to these, the website has received 48,436 visits between the start of 2013 and 25 November 2019. These can be assigned to 27,785 users from 139 different countries and territories. The countries with the most users are the USA (7,232), the UK (3,835), Germany (1,715), Spain (1,550) and Brazil (559). Another interesting statistic provided by Google Analytics is the average time of consultation: here a high number may indicate serious and sustained interest in the resource. Among the countries with more than 100 users, the champions in this regard are Argentina (371 users, 4:16 minutes), Belgium (459 users,

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20 Including the Classical Association Annual Conference (Reading, UK, 6 April 2013); the Faculty of Humanities (Bölcsészettudományi Kar) of Eötvös Loránd University, Budapest (19 April 2013); the Institute of Classical Studies, University of London (23 May 2014); the Facultad de Filología, Universidad Nacional de Educación a Distancia, Madrid (23 May 2014); the 14th FIEC Congress, Bordeaux (26 August 2014); and the Faculté des Lettres, Université de Genève, Geneva (2 March 2016).

21 Bellido Díaz (2013); Nappa (2017).

3:54 minutes), the UK (3,835 users, 3:09 minutes), Italy (4,145 users, 3:08 minutes), Mexico (225 users, 3:07 minutes) and Hungary (393 users, 3:01 minutes).

The method of Google Analytics has the drawback that it counts devices rather than individuals: a school class studying *Catullus Online* via the same projector are counted as one, while someone who consults the website from five different devices may be counted five times. A different metric is provided by the Facebook “like” button that the engineers of Woodpecker Software incorporated into the website at the time of its construction. As of 25 November 2019, *Catullus Online* has received a “like” from the owners of 1,273 different profiles of Facebook. A few of these profiles are institutional, belonging to professional associations or to Classics departments, but almost all of them appear to belong to individual people. A significant part of these, perhaps a small majority, are based in Europe or the USA, but the website also has a following in countries such as Brazil, Egypt, Pakistan and the United Arab Emirates. One may well ask: what brings a person from a country without a tradition of Latin education to such a website? Is it an interest in the poems of Catullus? Or the high-resolution images of beautiful late medieval manuscripts? Or the convenient layout and the careful design of the website? In the absence of specific information about the motivation of most users, one is left guessing. In any case, it is deeply satisfying to know that one’s work has reached such a broad and varied public.

Another way of looking at *Catullus Online* is by comparing it to other projects and digital resources. As I have mentioned above, a considerable number of classical Latin texts were already available online when the project started in 2009. Many of these were simple online reproductions of printed editions that had been scanned with or without optical character recognition (OCR). Others had put online the text of an existing printed edition, with or without a critical apparatus. Even as sophisticated a publication as *Musisque Deoque* (Mastandrea *et al.* 2007) had relied on earlier printed editions. What was missing was a born digital critical edition. This came to an end in 2012, when Linda Spinazzè added to *Musisque Deoque* her entirely new edition of the elegies of Maximian. This is arguably the best edition of Maximian available today, and as far as I know, it should be credited as the first born digital critical edition of a major classical Greek or Latin text. *Catullus Online* came a close second, in January 2013. It was also the first digital repertory of conjectures to be published for any Greek or Latin text. It was followed in 2014 by the *Repertory of Horace* that had been developed at the University of Oslo under the leadership of Monika Asztalos and Tor Ivar Østmoe. This repertory uses a slightly different format and does not include a critical edition of the poems of Horace.

Finally, some words should be said about the practical aspects of the continued existence of *Catullus Online*. The website continues to rely on the server of

Woodpecker Software; I pay a small annual fee for the domain rights. This arrangement has the advantages of flexibility; if the website could be hosted by an organisation such as a university or a research library, it would be easier to ensure its continued existence but more difficult to update it from time to time. The digital platform has proven remarkably resilient; as far as I can tell, *Catullus Online* can still be consulted adequately from the most commonly used browsers. I am still somewhat concerned that it could be rendered inaccessible by technological change in the medium term.

The development of the contents of the website also calls for comment. There has been a slow but steady stream of suggestions and recommendations by users. Many of these messages concerned recently published conjectures in *Catullus*, as well as earlier ones that I had not yet included in the repertory. I regularly come across these two kinds of items myself. Consequently, it has been necessary to update the repertory very regularly, every couple of months or so. A more radical revision will be necessary in the light of recent research on the surviving manuscripts of *Catullus*, especially where the date and the origins of individual codices and the first appearance of humanistic variants are concerned. While it is always a challenge to find the time for careful adjustments to the database, I regard it as very important to prevent *Catullus Online* from becoming static and to maintain it as a living resource that offers an up-to-date account of its field.

## 5 Conclusions and Recommendations

What lessons does *Catullus Online* provide for future digital critical editions, and for the broader disciplines of the classics and the digital humanities? Most importantly perhaps, it provides a model for bridging the divide between these fields. Its digital and philological aspects were tackled during distinct parts of its development, with digital technology providing the form and traditional philology offering the contents. In other projects it may be possible to integrate the fields more closely, whether by finding a richer and more sophisticated solution to encode the textual elements, or indeed by applying digital methods of research, of not only presenting but also generating knowledge. But in each of these cases two different disciplines will have to be brought together. This represents a challenge in terms of knowledge management, and in human resources. The ideal digital editor would have to be not only an accomplished textual critic but also a first-class programmer familiar with the state of the art in digital philology. Despite the enormous advances made by the digital humanities during the past decade, it is still very rare for one researcher to command both skill sets.

On a deeper level, we also seem to be dealing with a clash between two cultures. Classical Latin and Greek textual criticism is an ancient, mature, conservative, slow-moving and somewhat elitist branch of classical studies, while digital humanities is a young, open, dynamic, egalitarian and enterprising field. There is ample scope for a fertile collaboration that combines the rigour and substance of textual criticism with the dynamism and the technological creativity of digital humanities. There is also scope for misunderstanding and distrust, and even for mutual contempt.

This divide deserves to be tackled both through individual projects and within our broader disciplines. To start with the latter, it is disconcerting that even the best digital publications in classical studies often do not receive the recognition that they deserve. When the work of a classical scholar is formally evaluated today in a context such as an application for habilitation or for a job, a digital publication is likely to carry far less weight than a publication on paper with exactly the same contents.<sup>22</sup> This is especially odd given the urgent need for classicists to reach a broad public in order to ensure the survival of our discipline. Even those institutions that encourage the use of digital media so that humanities research may reach a broader public do not always acknowledge digital publications as research products in their own right. Admittedly, publishing online has certain drawbacks: a traditional method of quality control such as peer review cannot function in a medium in which there are practically no checks on publishing; but even in paper-based publishing its functioning can hardly be called perfect. It would be best to shift to a system of assessment that does not focus on the external form of a publication, but evaluates its contents and the advancement in knowledge and in scholarly method that it represents, whether it has appeared in print or online. This would make it worthwhile for academics, and especially for junior researchers in need of a permanent job, to embark on innovative digital research projects.

Another obstacle to good projects in the digital humanities is more practical: as has been set out above, very few researchers have skills both in classical Latin and Greek textual criticism and in the digital humanities. When I started working on *Catullus Online*, I had been trained in textual criticism, but not in computer programming. I solved this problem by contracting an IT company to create the digital platform for the website. Such tailor-made solutions have the advantages of flexibility and convenience, but similar problems are likely to recur in future projects, and it might well be worthwhile to solve them once and for all. It would be a boon for digital philologists if a dedicated team of programmers could create a state-of-the-art platform for digital critical editions that would be robust and flexible enough to be reused in future projects. Such a platform could be maintained and regularly

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22 Scandinavian universities seem to constitute a welcome exception to this rule.

updated by an organisation that could also conserve a repository of critical editions. As it were, it would combine the role of a publishing house and a library. As I am writing this, a team led by Dr James Brusuelas in Oxford are completing exactly this kind of platform, appropriately called *Proteus*, while the *Digital Latin Library* project led by Professor Samuel J. Huskey at the University of Oklahoma is setting up a network of platforms with the kind of institutional backing that I would envisage.

A third challenge posed by projects in the digital humanities could be classed as psychological. The digital humanities are developing rapidly, not only because such a promising field draws increasing support and contributions, but also because it lies in the essence of the digital media that they offer a bewildering range of new opportunities. They have made it possible to create larger, richer, better structured and more useful publications than before; to speed up radically traditional research methods such as searches and statistical surveys; and to invent new tools, methods and ways of doing research, from digital mapping through textual mining to new techniques of data visualisation. The temptation to exploit these potentialities to the full is understandable. But there is the danger of grasping more than one can hold, of embarking on an enterprise that does not have a realistic hope of success. In such a context it is especially important that the objectives of every project should be worthwhile and ambitious, but also realistic and feasible.

These comments are not intended as warnings, but as recommendations so that digital philology might function better as a whole and individual research projects may be more successful. As to the promise held by this field I have no doubt. Digital technology has the potential to transform research in the humanities, including the ancient field of classical textual criticism. I hope to see a future in which *Catullus Online* will not be an unusual standalone project, but one of many digital critical editions of classical Latin literature.