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Chapter 13

Scholarly editions in print and on the screen: A theoretical comparison

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Abstract / Résumé

Since the advent of digital scholarly editions, there have been many arguments to the effect that digital versions are able to offer more to humanities scholars than printed ones. Though this opinion is shared by most scholars producing digital editions, a number have also published printed versions alongside or even after launching digital ones.

To address the apparent contradiction between theoretical discourse and actual practice, this chapter will analyze two scholarly editions that have been implemented in both digital and printed environments by the same editor(s). Scholarly editions that we intend to focus on include the British Library, National Library of Russia, St. Catherine's Monastery, and Leipzig University Library's edition of the *Codex Sinaiticus*, and Daniel Paul O'Donnell's edition of *Cædmon's hymn*. By comparing statements of purpose, interface features, and content, we will identify the structures and characteristics that are either shared or unique in each edition.

Having conducted a detailed analysis of each edition, we will then evaluate each scholarly edition by applying to it a relevant theory of new media. Theories that we will use include Lev Manovich's *The language of new media*, and Jay David Bolter and Richard Grusin's *Remediation: Understanding new media*. A view of the scholarly edition as a particular instance within the broader context of current media theory will thereby be developed. The vantage point thus obtained will allow for a more moderate evaluation of the relative advantages and disadvantages of printed and digital scholarly editions than has been available thus far.

Depuis l'avènement des éditions universitaires numériques, de nombreux arguments ont été avancés selon lesquels les versions numériques sont en mesure d'offrir aux chercheurs en sciences humaines un éventail plus large que les versions imprimées. Bien que la plupart des chercheurs produisant des éditions numériques partagent cette opinion, certains ont aussi publié des versions imprimées en même temps, ou même après, qu'ils ont lancé des éditions numériques.

Afin de traiter de la contradiction apparente entre le discours théorique et la pratique réelle, ce chapitre analysera deux éditions universitaires qui ont été mises en œuvre à la fois en version numérique et en version imprimée par le(s) même(s) éditeur(s). Les éditions universitaires sur lesquelles nous avons l'intention de porter notre attention sont l'édition du *Codex Sinaiticus*, de la British Library, de la Bibliothèque nationale russe, du monastère Sainte-Catherine et de la bibliothèque de l'université de Leipzig, et l'édition de l'*Hymne de Cædmon* de Daniel Paul O'Donnell. En comparant les déclarations d'intention, les fonctions d'interface et le contenu, nous identifierons les structures et les caractéristiques qui sont soit partagées, soit uniques dans chaque édition.

Après avoir effectué une analyse détaillée de chaque édition, nous évaluerons ensuite chaque édition universitaire en y appliquant une théorie pertinente de nouveaux médias. Les théories que nous utiliserons sont, entre autres, *Le langage des nouveaux médias* de Lev Manovich et *Remediation: Understanding new media* de Jay David Bolter et Richard Grusin. Cela permettra ainsi d'élaborer un aperçu de l'édition universitaire comme échantillon particulier au sein du contexte plus large de la théorie des médias actuelle. Le point de vue ainsi obtenu permettra de faire une évaluation plus modérée des avantages et désavantages relatifs des éditions imprimées et numériques que ce qui a été disponible jusqu'à maintenant.

Keywords / Mots clés

Contents / Contenu

- [Theoretical context](#)
- [Computers mediate culture](#)
- [Jay David Bolter and Richard Grusin's Remediation: Understanding new media](#)
- [A comparison of printed and digital scholarly editions](#)
- [Cædmon's hymn](#)
 - [Purpose](#)
 - [Interface features](#)
 - [Organization](#)
 - [Navigation aids](#)
 - [Paging devices](#)
 - [Record layout](#)
 - [Textual features](#)
 - [Content](#)
 - [Analysis](#)
- [Codex Sinaiticus](#)
 - [Purpose](#)
 - [Interface features](#)
 - [Organization](#)
 - [Navigation aids](#)
 - [Paging devices](#)
 - [Record layout](#)
 - [Textual features](#)
 - [Content](#)
 - [Analysis](#)
- [Conclusion](#)
- [Works cited / Liste de références](#)

In a preceding chapter, Adriaan Van der Weel makes the point that a key difference between print text and digital text is that the former is based on a technology that fixes the text in place for the reader, while the latter is inherently fluid. This chapter might be seen in certain respects as an extended discussion not only of other significant differences between the two media, but also of the many skeuomorphic features originating in print and still found in current digital scholarly editions. For our purposes, a broad conception of the scholarly edition as an edition useful for scholarly work is sufficient. This definition allows the inclusion of a range of types, including critical and facsimile editions. We use a single analytical framework as a mode of comparison. Some of the points of comparison owe a strong debt to either the printed page (for example, "paging devices") or to the screen (for example, "navigation aids"); however, it is our contention that by consciously applying such a framework and examining how the same categories manifest in print and on the screen, a useful comparison can be made and some of the problems inherent in a more unreflective application of metaphor to digital documents may be avoided.

The change from printed scholarly editions to digital ones has been discussed in detail by a number of writers. In "The rationale of hypertext," Jerome McGann (1996) argues that computerization is fundamentally altering the nature of the scholarly edition: "The change from paper-based text to electronic text is one of those elementary shifts—like the change from manuscript to print—that is so revolutionary we can only glimpse at this point what it entails" (1996, 28). Furthermore, he characterizes this shift as being tremendously positive:

The computerized edition can store vastly greater quantities of documentary materials, and it can be built to organize, access, and analyze those materials not only more quickly and easily, but at depths no paper-based edition could hope to achieve. (McGann 1996, 28)

Some other notable authorities on scholarly editions seem inclined to concur with McGann's assessment. For example, Peter Shillingsburg (2006, 97) states that "electronic scholarly editions either already can, or promise soon to be able to, offer to both editors and edition users considerably more than was possible in print editions." John Lavagnino (1995, para. 10) claims that an electronic edition "can say more than the printed book does," and Eugene William Lyman (2010, iii) claims that "The electronic medium... holds the hope of the scholarly edition's fullest realization." Indeed, Hans Walter Gabler even claims that "the digital medium will be the native medium of the scholarly edition of the future" (2010, 43) and that printed scholarly editions will cease to be produced. Peter Robinson takes a further step, arguing not only that digital scholarly editions will make printed ones obsolete in the future, but that they should already have done so, asking rhetorically, "Who would publish a scholarly edition in print, now that the digital medium exists?" (2010, 146).

Theoretical context

Such apparently unanimous approval of digital scholarly editions seems quite striking, especially in light of the decidedly more reserved approach of the scholarly community with regard to new media in general. Although some exceptions do exist, such as Ted Nelson's (1987, DM74) statement that "computer screens can make people happier, smarter, and

better able to cope with the copious problems of tomorrow," theoretical discussions of new media tend to scrupulously avoid statements to the effect that new media are simply "better" than older media. One reason for this discrepancy between the wider scholarly community and the editorial community outlined above may be that digital scholarly editions are indeed superior to printed ones with respect to most of the particular functions for which scholarly editions are employed; however, even if this is the case, as so many authorities attest, it may be valuable to perform a more disinterested type of theoretical analysis of the kind used to examine more popular forms of new media. In this way, we might be able to shed light on some of the wider implications of a shift in scholarly editing from paper to the screen, and we might discover reasons for the continued survival of printed editions.

With these possibilities in mind, the first part of this chapter will provide a brief examination of digital scholarly editions with reference to theories of new media laid out in two widely cited theoretical discussions: Lev Manovich's *The language of new media* (2001), and Jay David Bolter and Richard Grusin's *Remediation: Understanding new media* (1999). These theories will then be used in evaluating two concrete examples of scholarly editions.

Computers mediate culture

In *The language of new media*, Manovich does not speak specifically about scholarly editions per se, but he does discuss "cultural interfaces," which he defines as "human-computer-culture interface[s]—the ways in which computers present and allow us to interact with cultural data" (2001, 70). Cultural interfaces include anything from websites to video games, and could also include scholarly editions. In fact, Manovich argues that human-computer cultural interfaces have grown so popular that computers can now be said to mediate not only certain cultural forms, but all culture (64). Manovich offers us a way of examining print and digital editions in terms of a "language" of cultural interfaces, which is composed of elements of three familiar cultural forms: the printed word, the general-purpose human-computer interface (HCI), and cinema (71).

With regard to the printed word, Manovich contends that it relies on the interface of the page, and that in the online environment the page becomes "fluid and unstable" (2001, 75) language that is familiar from the discussion of van der Weel above, and also echoes Jay Bolter's contention that "electronic writing is fluid and dynamic to a greater degree than previous technologies" (1991, 8). With respect to digital scholarly editions, this means that a Web-based edition may never really be "complete," but can be subject to updates and revisions almost indefinitely. And in fact, a look at some actual examples of digital editions reveals this to be the case. Editions in collections like the "Perseus digital library," the "Walt Whitman archive," and the "Internet Shakespeare editions" have been in existence for many years and have seen many updates over that time. In the Walt Whitman archive, for example, the collection of correspondence from the Reconstruction period—which in print would have been published as a single correspondence volume—is being built online in stages: the first 250 letters published in spring 2012, with more expected later that year (Folsom and Price 2012). Of course, revised and corrected editions are also produced in print, but in contrast to printed editions, which are produced as discrete publications, specific versions of these electronic editions as they appeared at particular stages of their history can be difficult to locate.

In its transition to the screen, one of the most important changes to the printed word involves the introduction of hypertext. The advent of hypertext may be regarded as particularly important in the context of scholarly editions, which typically contain numerous references to text and/or images in other places within the work. According to Manovich (2001), the ease with which a reader can be led by hyperlinks to places outside a text has meant the decline of rhetoric and the triumph of metonymy. In essence, hypertexts no longer need to explain or persuade when they can simply reveal. Hyperlinks also work against hierarchy, reducing "new media culture [to] an infinite flat surface where individual texts are placed in no particular order" (2001, 77). This flattening is reinforced by random-access memory, which allows any part of the work to be accessed at once, thus allowing the user to bypass whatever narrative and rhetoric there may be. Instead, "cultural interfaces... bombard the user with all the data at once" (2001, 78).

Such flattening is clearly present in digital scholarly editions, such that search results, tabular data, and visualizations may be analyzed independently of the material itself, in this case, the established text of the edition. Indeed, Manovich (2001, 220) points out that "multimedia works that have 'cultural content' appear to particularly favour the database form" (2001, 220). In the navigational structure of a database-like digital edition, tables of contents are replaced by search bars or lists of hyperlinks based on various criteria, both of which allow users to jump anywhere within or outside a work quickly and easily. Hypertext may be inserted directly into the text itself as well to lead the user to associated media, or to other places within an edition. Examples of such features may be seen in editions examined later in this chapter. It may be noted that such features are not entirely new and can be seen as simply extending the capacities of existing print-based features such as indexes and footnotes; however, the digital instantiations of these features act to simplify and accelerate the process of using them, thereby serving to increase their efficacy and use. The result is an edition that lends itself more and more to non-sequential browsing than to extended reading. This is precisely how scholarly editions are often read.

As to the Human Computer Interface (HCI), the second of Manovich's familiar cultural forms, his observations also seem quite applicable to digital scholarly editions: much use is made in these editions of traditional HCI features, such as "scrollable windows, windows containing text and other data types, hierarchical menus, dialogue boxes, and command-line input" (2001, 89). Despite the advantages of these common features of HCIs, there are three problems with their use in digital scholarly editions. First, Lyman argues that the use of standard WIMP (windows, icons, menu, pointer) features in digital scholarly editions creates unnecessary work for the user. Forcing users to resize and align windows, scroll, and perform other such operations is inefficient, and "the unfortunate result is [that tasks] that might have been done once... now must be undertaken each and every time a text is viewed" (2010, 29). In Lyman's view, such problems can be solved by innovative design of digital scholarly editions. And indeed, advances in Web design have made it uncommon for users to have to manually align and resize windows to compare versions of a text, for example. However, other tasks, such as scrolling, are often still necessary. Second, as with cultural interfaces in general, digital scholarly editions "attempt to mediate between... two fundamentally different and ultimately incompatible approaches,"

allowing users to perform the detailed operations familiar to users of HCIs, while at the same time trying to retain some resemblance to cultural objects that are traditionally unchangeable and wholly determined by the author (Manovich 2001, 90). Essentially, HCI elements do not resemble a book, so if the goal is to accurately represent a book by means of a computer screen, some inherent difficulties will arise. A final problem is that HCIs try to maintain consistency between applications, even though originality may ideally be a more appropriate strategy. Although ease of use requires standardized features, such features are potentially at odds with the specialized functionality required of an edition given the particular kinds of content it contains (Manovich 2001).

Cinema is the last of Manovich's cultural forms that influence the language of cultural interfaces, and is arguably not very important with regard to scholarly editions; in fact, given the relative scarcity of video in scholarly editions, it is difficult to apply to them Manovich's claim that "rather than being merely one cultural language among others, cinema is now becoming the cultural interface, a toolbox for all cultural communication, overtaking the printed word" (Manovich 2001, 86). This may be an instance in which the rarefied field of scholarly editions will always go against the grain of popular culture, as text-based scholarly editions do not appear to be in any danger of being overtaken by video-based ones, which appear thus far not to exist.

Jay David Bolter and Richard Grusin's Remediation: Understanding new media

Bolter and Grusin (1999, 273) offer a more aesthetically-based analysis of new media centred on the concept of "remediation." Remediation, as defined by Bolter and Grusin, is "the formal logic by which new media refashion prior media forms" (1999, 273). Bolter and Grusin believe the principle of remediation to be universally applicable, at least with respect to the current historical moment: "all mediation is remediation... Our culture conceives of each medium or constellation of media as it responds to, redeploys, competes with, and reforms other media" (1999, 55). Since it is universally applicable, it obviously makes sense to evaluate digital scholarly editions in terms of remediation. Remediation is described in terms of "transparent immediacy" and "hypermediacy," which have been discussed at some length by Estill and Levy earlier in this collection. The terms essentially refer to levels of noticeability of the interface. Transparent immediacy is "a style of visual representation whose goal is to make the viewer forget the presence of the medium... and believe that he is in the presence of the objects of representation," whereas hypermediacy is a "style... whose goal is to remind the viewer of the medium" (1999, 272-273). The insights that Bolter and Grusin develop from this distinction are very useful to the study of scholarly editions, since a key component to a successful edition is the provision of an interface that balances the need to openly and faithfully represent a work (for example, by providing colour images of manuscript pages) with the need to provide information and control to the user (for example, by providing a detailed textual apparatus).

As to the motivation for remediation, Bolter and Grusin argue that "each new medium is justified because it either fills a lack or else repairs a fault in its predecessor, because it fulfills the unkept promise of an older medium" (1999, 60). This rhetoric of digital improvement on the printed page is strongly evident in the writing of McGann, Lyman, Shillingsburg, and others, as we saw above. Faults or limitations that digital scholarly editions are seen as repairing include unreliability (for example, in that translations or transcriptions may not be verifiable if original facsimile images are not provided), a lack of space (due to the physical constraints of a book), the inability to include multimedia (in cases where multimedia is pertinent, as in music), and inefficient means of navigation and analysis.

Such observations about digital improvement are good examples of Bolter and Grusin's more general contention that the invention of any device involves the "claim that it [is] better in some way at achieving the real or the authentic" (1999, 65). However, authenticity is itself a fluid quality. According to Bolter and Grusin, the claim that a device provides a superior route to the real or authentic also involves "a redefinition of the real or authentic that favours the new device" (1999, 65). Such a redefinition has in fact been one of the central goals of theoretical literature in the digital humanities, especially literature that deals with scholarly editions. The argument is that computers make possible a different kind of study than has been available in print, and that this new form of scholarship allows scholars to test their assumptions or to gain access to information and insights that have previously been out of reach (Hockey 2000, 66). The implied benefit of such testing and access is a more complete and authentic view of the material, one that is not as subject to human error or individual biases.

If the real or authentic is to be redefined by digital scholarly editions, then a question that must be asked is how this is to be accomplished. Which of the logics of remediation is best suited to the task, transparent immediacy or hypermediacy? Features that can best be described under the rubric of transparent immediacy allow the user to clearly and accurately view objects under consideration without distraction, whereas ones that tend to increase hypermediacy allow comparisons between versions of texts to be made, tools for textual analysis to be offered, means of navigation to be provided, and other benefits. In the case of textual materials, the maximal amount of transparency could be achieved simply by providing a PDF of an original document. However, such an edition would not offer the tools, transcriptions, and editorial content that users of scholarly editions want and need. Therefore, all digital scholarly editions offer an interface that Bolter and Grusin would call "hypermediated." This is unsurprising given Bolter and Grusin's contention that "the strategy that dominates on the Web is hypermediacy, attaining the real by filling each window with widgets and filling the screen with windows" (Bolter and Grusin 1999, 210).

A comparison of printed and digital scholarly editions

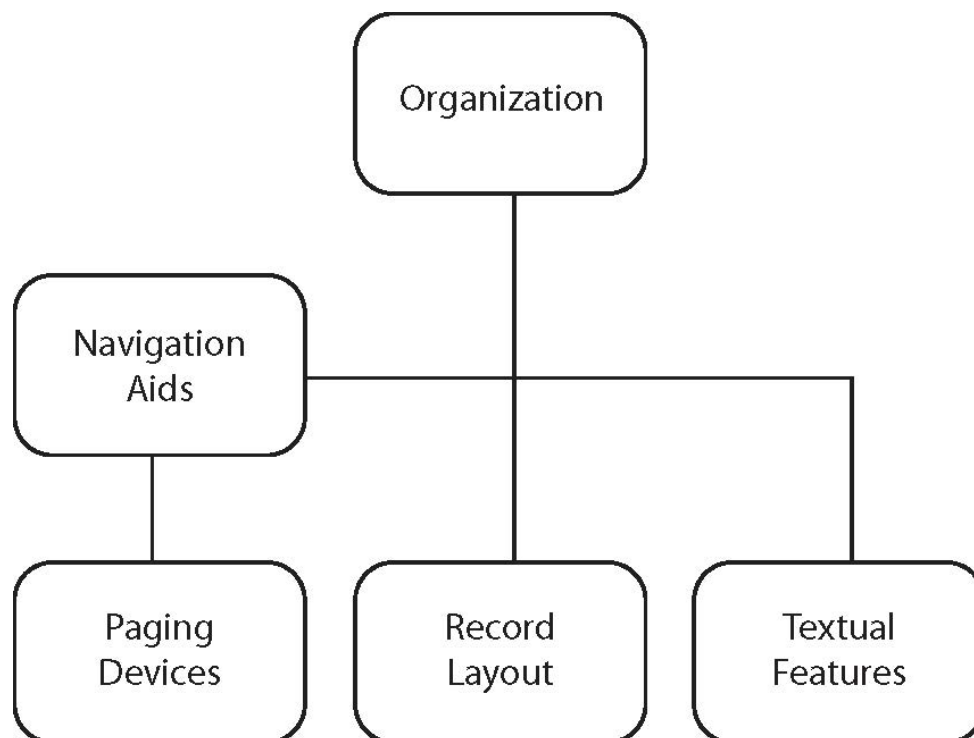
Thus far, we have explored some of the tensions between theoretical writing on scholarly editions and new media theory more broadly considered. In the remainder of this chapter, another tension involving theoretical writing on scholarly editions will be investigated. This time, however, the tension is not between theories, but rather between theory and

practice. The fact is that although there exists a general consensus that the screen is a superior medium for scholarly editions, a number of editors have published printed editions alongside or after digital ones. To address this apparent contradiction, we will now analyze two scholarly editions that have been implemented in both digital and printed environments by the same people. In comparing editorial decisions, we will identify the structures and mechanisms that are either shared or unique in each and will evaluate the affordances available in each case. Finally, we will apply the theories of new media discussed above in an attempt to explain the continued survival of printed scholarly editions.

Robinson's rhetorical question "Who would publish a scholarly edition in print, now that the digital medium exists?" constitutes a good starting point for the current section; however, in order to understand the continued existence of printed scholarly editions, in addition to asking *who* would produce a printed scholarly edition, we must also ask *why* they would produce it, and *how* they would implement it differently than they would a digital edition. In answering these questions, we hope to achieve a better understanding of some of the ways in which printed editions differ from their digital counterparts (Robinson 2010). A comparison of these differences may help us to discover some reasons for the continued survival of printed editions.

We include here only scholarly editions that have been published in *both* print and digital format, by the same people. This constraint has been introduced because it ensures that decisions regarding the production and implementation of both printed and digital editions are a result of the medium involved rather than idiosyncratic preferences of different editors or the material they are editing. In order to fruitfully compare printed editions with digital ones, we will employ three modes of comparison. First, we will compare statements regarding the purposes of both the printed and the digital editions from the editors themselves. This mode of comparison will provide direct evidence regarding the reasons that each edition was produced. Second, in order to compare *how* the printed and digital editions have been implemented, and to identify advantages and disadvantages in each, we will use a framework for comparison developed by Geoffrey Rockwell and other authors of this chapter, described in a paper titled "The face of interface: Studying interface to the scholarly corpus and edition." In Rockwell's (Rockwell et al. 2012) paper, a number of interface features are identified that may be used as the basis for a comparison of scholarly edition interfaces. This framework was developed as a means of fruitfully developing insights regarding interface differences, but no claim is made that this is the only framework possible. All of these identified features serve to aid users in "consulting" a work, which typically involves searching, skimming, as well as close reading (2012, 6). The features are as follows: (1) organization, (2) navigation aids, (3) record layout, (4) paging devices, and (5) textual features. Organization refers to the structure of the edition as a whole. Record layout refers to the design of a particular unit of information (for example, the page) and how it is displayed. Textual features include modifications to the text itself, such as colour, underlining, and size. Navigation aids include elements that help users search or browse a work, such as tables of contents and indices. Paging devices function to orient users within a work and to help to make navigation aids function. These features seem to bear certain hierarchical relationships to each other, as shown by the diagram below (see figure 1). Specifically, paging devices may be regarded as a subcategory of navigation aids, and all features can be seen as subordinate to organization.

Figure 1: Relational framework of interface features



The particular interface features that have been implemented in a given edition affect the content that can be delivered. For example, it would be difficult to create a complicated critical edition with many different interconnected sections without the inclusion of navigation aids. Conversely, the kind of content that must be displayed will guide decisions as to appropriate interface features to implement. Therefore, content will serve as our final point of comparison between printed and digital editions.

Cædmon's hymn

Composed in the 7th century AD, *Cædmon's hymn* is the oldest surviving Old English poem whose author is known. Daniel Paul O'Donnell's 2005 edition of the poem was released both as a printed book and as a CD-ROM, sold together as a "multimedia study, edition, and archive" (O'Donnell 2005). It should be acknowledged that in the decade since its publication, the affordances of electronic delivery for such material have advanced a great deal, and so in some respects this edition may appear rather dated. However, despite its relatively old age, *Cædmon's hymn* remains a sophisticated attempt at digital representation of a complicated critical edition. Furthermore, as a deliberate exercise in the creation of a multimedia edition, it constitutes a particularly enlightening example with which to study reasons for the survival of printed scholarly editions.

Purpose

Originally conceived as a CD-ROM only, O'Donnell decided to publish *Cædmon's hymn* as a printed book as well based on the results of an informal experiment he conducted. In this experiment, O'Donnell circulated both printed and screen-based drafts of his edition and found that readers retained more information from his edition's lengthy introduction when reading the printed version of the material (O'Donnell 2008). In an explanation resonant with van der Weel's argument that screen-based reading is characterized by "a tendency towards reading shorter texts, snippets of longer ones, and, as a result, to a more superficial engagement with text," O'Donnell argues that print is better than the screen at presenting "long and complex narratives and arguments... or material intended for ready reference." Additionally, he states that the printed edition is a more appropriate medium for scholars who are interested in simply reading the hymn but do not need all the variants of a given manuscript or the paleographic details associated with them (O'Donnell 2008). The screen-based version, on the other hand, is more useful "for those who do need to know more about the manuscripts or textual variants, or who need to be able to find specific wordings in order to disagree" (O'Donnell 2008). *Cædmon's hymn* was thus designed deliberately to take advantage of the strengths inherent to each medium.

Interface features

Organization

With regard to the delivery mechanism of the printed edition, O'Donnell argues (rather cheekily) that it is "easy to boot, portable, has no problems with batteries, and can be read even in strong sunlight" (O'Donnell 2008). The CD-ROM, on the other hand, requires a machine on which to run, takes longer to load, and is not as convenient for those wishing to read in adverse conditions. However, unlike Web-based editions, it might be observed that *Cædmon's hymn's* physical instantiation as a CD-ROM means that it is more stable and not as subject to continuous updates as is typically the case in Web-based editions.

As to internal organization of materials, the situation is much the same in the electronic version as it is in the printed one. In this way, the electronic version of *Cædmon's hymn* is very much like a value-added book. For example, in both versions there is a table of contents, followed by a preface, followed by a series of chapters, and then a glossary followed by a works cited list and an index at the end. There is, however, one noticeable difference in the organization of the digital edition. Whereas items in the printed edition are laid out sequentially, the digital edition is able to implement a hierarchical form of organization, as can be seen via a feature of the navigation system: different items within a single category are navigable using "previous" and "next" links, whereas items in different categories can be accessed more quickly by means of "up" and "down" links. The digital version is thus able to provide an extra "dimension" to the organization that the printed version cannot offer (see [figure 2](#)).

Navigation aids

Navigation aids in the printed version include a table of contents, a general index, and a manuscript index. There is also a list of illustrations. Within the text there are frequent cross-references to passages in the various versions of the hymn throughout the text and the glossary. The digital version of *Cædmon's hymn* contains the same table of contents as the printed version, although due to the lack of space constraints, it is also able to offer an expanded version that provides a more detailed view. The digital version also contains the same general and manuscript indices that appear in the printed version, although it lacks the list of illustrations.

The electronic edition has several navigational features not present in the print edition. A navigation menu appears on every page of the digital version, containing links to alternative views of the text in question, as well as to related information. Additionally, in the Windows version, the text has been indexed to allow full text searching of the entire document. For cross-references, the electronic version makes heavy use of hyperlinks (see [figure 2](#)). The continuous presence of navigation aids in the digital version in the form of menus, search bars, and hyperlinks, provides a significant advantage in terms of navigational speed and precision over the printed version, although a disadvantage is that it also provides a constant enticement to click, or in van der Weel's words, a "bottomless supply of built-in distraction." Anne Mangen similarly argues with regard to hyperlinks that "when we do have options to rekindle our attention easily by outside stimuli, we are... inclined to resort to them, rather than to consciously trying to resist such distractions by attempting to structure consciousness from within (which is more effortful)" (Mangen 2008, 410). In effect, by making navigation easier, the navigation aids in the digital version also make navigation more likely, and in effect serve to fragment the core of the edition, which is the text.

Figure 2: Electronic interface of Cædmon's hymn. Reproduced courtesy of Daniel Paul O'Donnell.

General Navigation

- Up (Table of Contents)
- Previous (Nb *ælda* recension)
- Next (WS *eorðan* recension)
- Down (Index)

This text

- View (select to change):
Substantive variants

Related Information

- Conventions and symbols
- Chapter 7: Editorial introduction, Northumbrian *eorðu* recension
- Witnesses to the Northumbrian *eorðu* recension: Br, Di, P1
- Filiation and transmission (chapter 5)

Northumbrian *eorðu* recension

A critical edition of the probable recension archetype

Based on *Di* with collations from *Br*¹, *P1*.

Nu [p]ue sc[iu]lun² herga hefunricaes [p]ueard,
metudaes mechti, and his modgedanc³,
[p]uerc [p]uldurfadur— suae⁴ he [p]undra gihuaes,
eci drichtin, or astalde!
5 He aerist scoop eorðu⁵ bearnum
hefen⁶ to hrofe, halig sceppend;
[ð]a⁷ middu[n]geard⁸, moncinnes [p]eard,
eci drichtin, aefter tiade
firum on foldu, *frea* allmechtig.

[Link to the associated entry in apparatus in this file.](#)

Apparatus (Substantive variants)

1a [p]ue *Di puc* *P1 Br. 1a* sc[iu]lun *Di Br scuilun* *P1. 1a* herga] *horga*
Br. 1b hefunricaes] *hesimruicaes* *Br P1. 1b* [p]ueard] *pueard* *Di P1 Br. 2a* metudaes]
metundaes *Br P1. 2b* modgedanc] *modgedeanc* *Di. 3a* [p]uerc] *puerc* *Di puere* *P1 Br.*
3a [p]uldurfadur] *puldurfudur* *Di fadur* *P1 Br. 3b* he] *hae* *Di. 3b* [p]undra] *pundra*
Di Br P1. 4b astalde] *astnlde* *Br. 5a* He] *her* *P1. 5a* aerist] *aerst* *P1 uerst* *Di.*
5b bearnum] *pearuun* *P1 peannum* *Br. 6a* hefen] *efen* *Di P1. 7a* [ð]a] *da* *P1 Br da* *Di.*
7a middu[n]geard] *middumgeard* *Di P1 middumgaerd* *Br. 7b* moncinnes] *moneinnes*
Br P1. 7b [p]eard] *peard* *Di P1 Br. 8a* eci] *ee* *P1 Br. 8a* drichtin] *drichtuu* *P1 druntin*
Di. 8b aefter] *cefter* *Di. 8b* tiade] *ciade* *Br. 9a* on] *ol* *P1 Br. 9b* *frea*] *fre* *Br.*

Notes

¹None of the scribes responsible for copying this recension appear to have understood their text. See §§ 7.8 and 7.42 for a discussion of the editorial conventions used in establishing the text of this recension.

²sc[iu]lun] *Wuest 1906* reads *scuilun*. *Smith 1978*, *Dobbie 1937*, *O'Donnell 1996b* read *scuilun*. See §§ 7.36, above; *O'Donnell 1996b*, 159; *Cavill 2000*, 513.

³modgedanc] *Wuest 1906* and *Dobbie 1937* have a medial <ð> in this word. *Smith 1978* and *O'Donnell 1996b* both read <d>. See §§ 7.36-7.40, above; *O'Donnell 1996b*, 159-160; *Cavill 2000*, 513.

⁴suae] *Howlett* suggests that *suae* may be intended as an adverb ("thus") rather than a causal conjunction ("as, because"). For a discussion of the evidence, see above, § C.9. The punctuation here assumes *suae* is a conjunction.

⁵eorðu] *Dobbie 1937* reads *eorðu*. *Wuest 1906*, *Smith 1978*, and *O'Donnell 1996b* read *eorðu*. See §§ 7.36-7.40, above; *O'Donnell 1996b*, 159-160; *Cavill 2000*, 513.

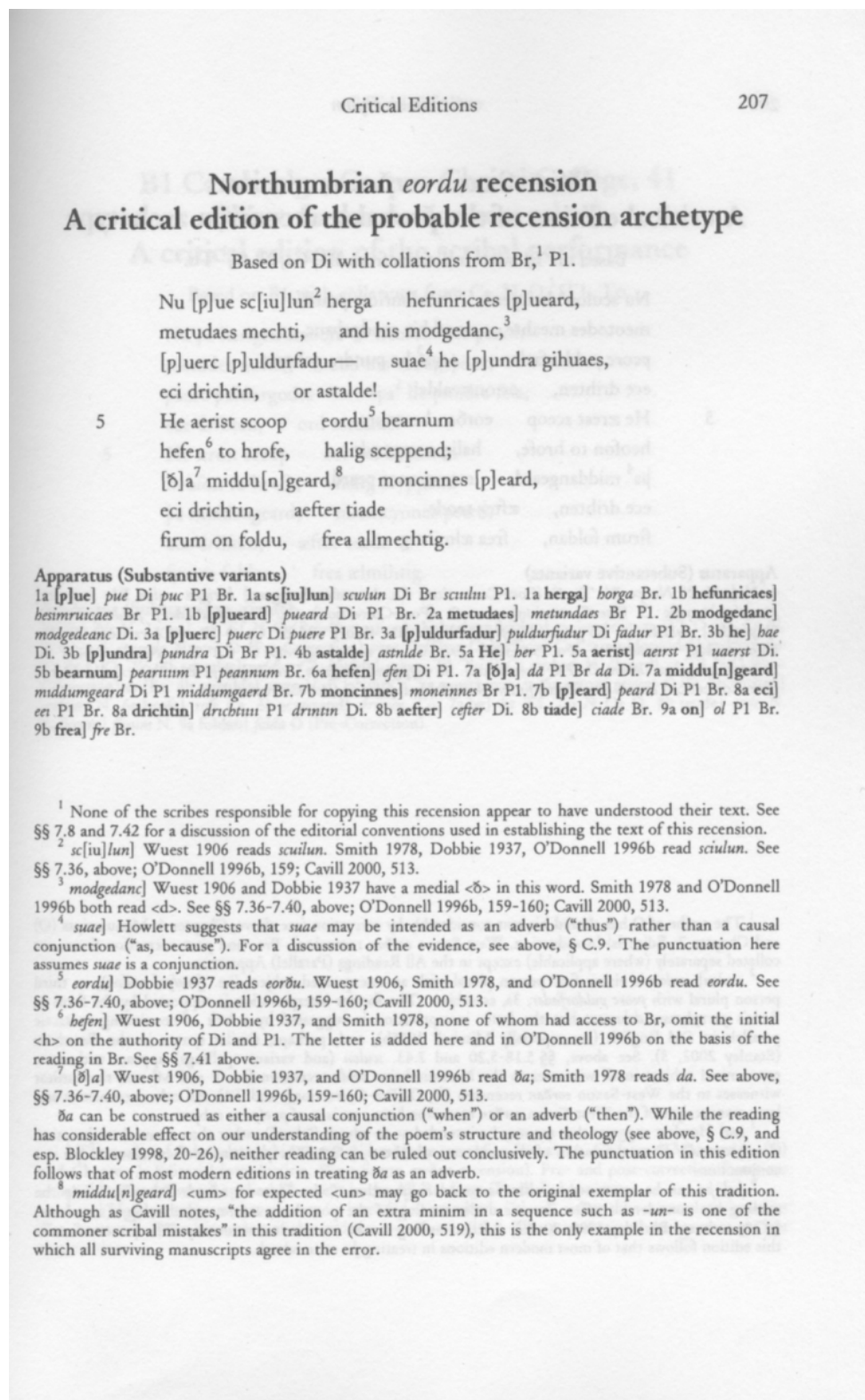
[file:///Volumes/Caedmon/caedmon/html/htm/edition/eorðu/substantive.htm#EO.9B.1.APP1](#) *Smith 1978*, none of whom had access to *Br*,

Paging devices

In terms of paging devices, the section sign (§) is used in conjunction with numbering in both versions to indicate paragraphs. This was done in order "to facilitate comparison of the print and screen versions" (*O'Donnell 2010*, 113). Because of these paragraph numbers, page numbers from the printed edition are not given in the electronic one. In terms of headers, slightly different information is given in each case, with the print edition showing the sections appearing on the current page beside the page number, and the electronic edition showing the title of the chapter at the top of the window. At the top of the page in the electronic edition there is more detailed paging information in the navigation menu; however, this menu does not remain in place when scrolling, and so is effectively hidden from view throughout the majority of the text. The information given at the top of the print page is more limited, but always visible. The permanent presence of paging devices in the printed edition might be seen as providing a clear orientation to the text on the printed page; an indication of the relationship of the text being read to the rest of the text is always present, whereas in the digital version it becomes easy to forget one's current location with respect to the work as a whole.

Record layout

Regarding record layout (in this case, the page unit), the printed page requires that longer sections be broken into separate pages. Despite the fact that conceptually related text (for example, chapters or notes) must be broken up into arbitrarily defined pieces in the printed version, the view surface dimension and orientation of the printed page means that it is often possible to view an entire record at once (including text, textual apparatus, and notes; see [figure 3](#)).

Figure 3: Print layout of *Cædmon's hymn*. Reproduced courtesy of Daniel Paul O'Donnell.

The digital version, on the other hand, implements each conceptual section as a Web page, which must be scrolled through in order to be read when using a legible font size. Various writers have commented that scrolling on the screen represents a step backward in terms of functionality from the printed page to that of the scroll, and in fact an experiment by Erik Wästlund, Torsten Norlander and Trevor Archer (2008) have shown that scrolling reduces reaction time and increases mental workload.

Another advantage of the printed version is the fact that notes are shown at the same time as the referring text. The Web version implements footnotes as hyperlinks, transporting the reader to the bottom of the page and away from the referring text, essentially turning footnotes into endnotes. Robert Hauptman argues that placing notes alongside text makes them easier to read, contending that "scholars who interest themselves in documentation invariably prefer the substantive footnote over all other possibilities" (Hauptman 2008, 35). By implication, it would similarly be preferable to

have an all-at-once page rather than a linking system that conceals content or forces navigation away from the main text.

Textual features

As to textual features, one of the most noticeable differences between the electronic and printed editions concerns the use of colour; whereas the printed edition is black and white, the digital edition uses seven different colours to indicate (or code) additional information in the text, including hyperlinks, associations with various versions of the poem, and the presence of corrections. This use of colour is very informative, although a drawback is that it makes the text somewhat more difficult to read.

Another difference concerns the use of symbols. Both the printed and digital editions use them, but the digital edition also uses a mouseover (or "hover box") to remind the reader of their meaning. This means that there is less of a learning curve required to be able to use the digital edition as compared to the printed one. Such ease of use makes the digital edition considerably more accessible, but also means that users do not require as significant an intellectual effort to use it. This lack of effort may translate into a lack of intellectual investment in the work and thus to a shallower engagement with it, a phenomenon bemoaned by Nicholas Carr, among others ([Carr 2008](#)).

Content

As to content, the printed version contains lengthy literary, historical, textual, and linguistic introductions and notes. It also contains critical editions of various versions of the poem, each accompanied by a detailed apparatus showing substantive variants, and an archive containing transcriptions of all known witnesses of the poem. All content in the printed edition of *Cædmon's hymn* is also included in the digital version. In addition, the digital version contains full-colour facsimile images, a fuller archive containing a selection of different kinds of transcriptions (such as diplomatic and semi-diplomatic), options for changing the apparatus to show different sorts of variants (including "significant," "substantive" and "orthographic"), and options to combine the content provided in different ways, such as to produce parallel text editions. With regard to content, then, the digital version is clearly more comprehensive than the printed one, which as we have seen is one of the commonly cited advantages of digital editions as compared to printed ones.

Analysis

O'Donnell's multimedia edition of *Cædmon's hymn* provides an excellent example of an edition that has been purposely implemented in both printed and digital versions in order to take advantage of the relative strengths of each. Specific advantages of the printed version include that it can be read in a wider variety of situations and environments than the digital edition; there are page numbers, which provide an added mode of reference; entire records can be viewed at once on a single page or two-page opening; pages can be turned, rather than scrolled through; notes can be viewed alongside the text; text is all one colour, allowing easier reading; and a lack of clickability provides less enticement to leave the current page.

The differences between the screen-based and printed versions of *Cædmon's hymn* might best be viewed in terms of Lev Manovich's distinction between narratives and databases. As opposed to narratives, which are typically read from beginning to end, databases are characterized by a non-linear presentation that allows all material to be accessed quickly from any point. The digital edition of *Cædmon's hymn* provides various methods to accomplish this kind of quick access, including a liberal use of hypertext, enhanced navigation menus, and search capabilities. The result in this case, as in similar digital texts, is that rather than engaging in traditional reading, users tend to "view, navigate, and search" ([Manovich 2001](#), 219). The tradeoff represented by this arrangement is that digital texts lend themselves more to non-sequential browsing than to extended reading, even when they include all the textual material contained in the printed version, as is the case in *Cædmon's hymn*.

The reason for the persistence of a printed version in the case of *Cædmon's hymn* may lie in its content. With its lengthy spans of prose, O'Donnell's edition possesses strong elements of narrative. O'Donnell's finding that information read from the screen is not retained as well as content read from print would seem to support the idea that a printed version can be helpful if the aim is to read rather than to browse, as is necessary in a narrative or sustained argument ([O'Donnell 2008](#)). O'Donnell's hybrid edition takes advantage of both kinds of consultation in order to maximize its usefulness.

Codex Sinaiticus

Unlike O'Donnell's *Cædmon's hymn*, which is in essence a critical edition in both its printed and digital versions, the next example we discuss is a facsimile edition. The *Codex Sinaiticus* contains the oldest extant text of the complete New Testament of the Christian Bible (along with about half of the Septuagint), dating from the fourth century. The Codex Sinaiticus project was undertaken in 2002 by the four institutions that currently hold the constituent parts of the manuscript: the British Library, the Library of the University of Leipzig, the National Library of Russia in Saint Petersburg, and the Holy Monastery of the God-Trodden Mount Sinai (Saint Catherine's). One outcome of the project is a freely accessible website that includes high resolution facsimile images in two different kinds of light, transcriptions, translations, notes regarding physical characteristics of the manuscript, and historical introductions to the manuscript and to the project. Another outcome is a £495 printed facsimile edition of the complete Codex, which comes with a small reference guide containing a concordance and historical introductions to the manuscript and to the project. A further outcome is a printed book by David Parker called *Codex Sinaiticus: The story of the world's oldest Bible*, which contains a more detailed history of the Codex and of the project ([Parker 2010](#)).

The *Codex Sinaiticus* is an especially interesting example of a book being represented in the electronic environment, in that the document being adapted may be regarded in some ways as prototypical; as Christian Vandendorpe notes, "the

book is the quintessential mythical object of Christianity" (2009, 119). It might therefore be conjectured that for certain users, some of the appeal of the physical version of this particular text derives from the important status of the codex in Christian iconography.

Purpose

The principal goal of the Project is "to reunite the entire manuscript in digital form and make it accessible to a global audience for the first time" (Milne 2009). Subsidiary aims of the project include historical research, conservation, digitization, transcription, and dissemination (Milne 2009).

With regard to the website in particular, the creators seem to confirm Bolter and Grusin's argument that the invention of a device is accompanied by claims that the new device is better at achieving the real or authentic. The site does this by advancing a number of arguments, stating for example that the *Codex* can for the first time be seen as a whole, and that the "creation of a scholarly, machine-readable transcription, linked by word to the manuscript images, is providing textual scholars with possibilities for research and analysis never before available" (Milne 2009).

The virtues of the print edition tend in a different direction. The small reference guide that accompanies the printed facsimile states that despite the fact that they had to be reduced in size by 5% from the originals, the images that comprise the print facsimile are meant to "represent faithfully the actual appearance of the pages" of the manuscript (British Library 2010, 5). A paper describing the project adds that the printed facsimile is meant to "enable full access to a life-like copy of the original manuscript" (McKendrick and Garcés 2006). Comparing these statements of purpose, it seems clear that although increased accessibility was a goal in the production of both the website and the facsimile, the website also emphasizes added functionality, whereas the facsimile highlights similarity to the original.

Interface features

Organization

In terms of physical organization, the printed version is composed of a number of related documents: the facsimile edition proper (see figure 4), the reference guide, and the book by David Parker. The website, on the other hand, is a single entity, composed of interlinked documents.

Figure 4: *Codex Sinaiticus* facsimile. Photo by Jason Gondziola.



This difference means that the printed version decreases accessibility for most people (i.e. of those who have access to the Internet), as multiple costly documents must be located and acquired.

As to functionality, the ability to spread multiple printed documents out on a table and to compare them may be seen as an advantage, as might the ability to examine documents in isolation, without having them distract from each other. In a concession to this sort of concern, the Web version allows different content to be selected and compared side-by-side as well, in separate panes, and it is also possible to hide panes. That said, Web-based users are restricted to clicking on checkboxes to make these changes and do not possess the same degree of freedom and control as users of the printed version do with regard to manipulating and juxtaposing documents.

Navigation aids

The printed facsimile edition of the *Codex Sinaiticus* contains no navigation aids in itself. The reference guide that accompanies it includes a concordance that associates passages with pages. The digital edition performs the same associative function by means of a navigation bar and dropdown menus. Basic and advanced search functionality is also provided in the digital version; the advanced version allows searching within specific textual sections of the site. Locating

material is thus faster and easier in the digital version, particularly if searching for specific words is taken into account (something that is not possible in the printed edition). However, the imposing presence of navigational elements is inescapable in the digital edition: navigation aids are always present and accessible on the same page as the rest of the content. In the facsimile version, it is possible either to keep the reference guide open beside the facsimile, or to close it and avoid distraction.

The inability to remove navigation aids from one's field of view is a common feature of digital editions; this fact points to a fundamental difference in the way that printed editions and digital ones are used. As Christian Vandendorpe writes, "everyone today knows that you don't read hypermedia—you navigate or surf" (Vandendorpe 2009, 116). The omnipresence of navigation aids in digital editions may be due to a difference in their intended use, namely the fact that digital navigation aids are designed to be used very frequently, facilitating perusal rather than reading (which is another important mode of consultation for this kind of material).

Paging devices

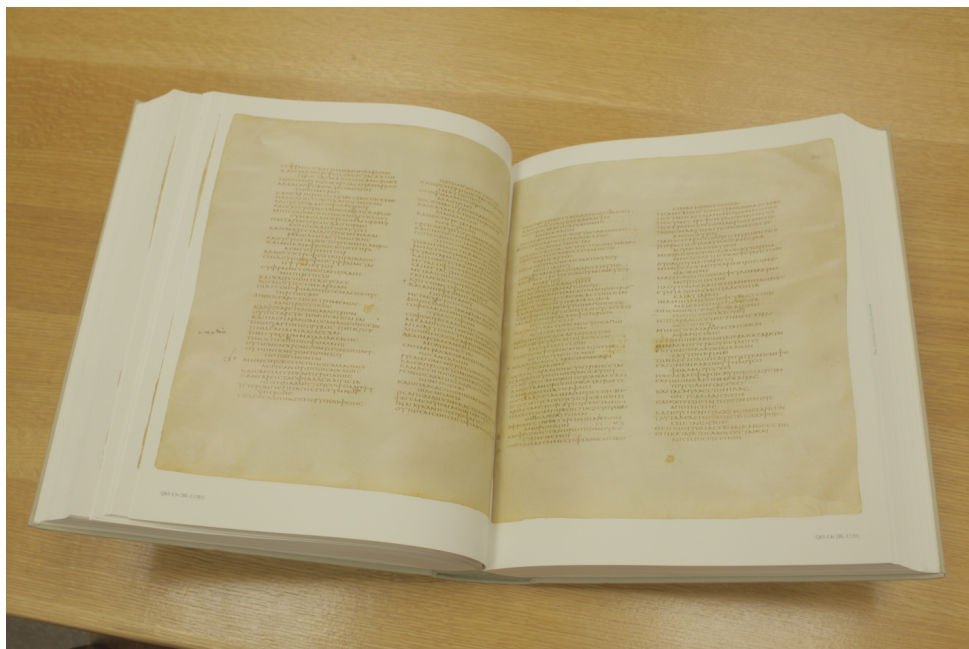
With regard to paging devices, the facsimile version gives the page of the original document, a code for the name of the institution that houses it, and the page reference as it is numbered by that institution (for example, "Q36-f.8v [LUL-f.16v]"). In the digital edition, the navigation bar doubles as a paging device, showing not only the information contained in the facsimile version, but also the book, chapter, and verse, and the scribe who penned it. In effect, the concordance provided in the reference guide to the printed edition has been implemented as a paging device and as a navigation aid, all in one. Other paging devices contained in the Web version include tabs indicating the language of the interface; boxes indicating the kind of light being shown in the image, the unit of text being shown in the transcription, and the language of the translation; and a box in the corner of the image of the manuscript showing one's current position in relation to the page as a whole.

In the printed facsimile edition, the only information included on the pages in addition to the photograph of the manuscript page is the coded and compressed paging information mentioned above; this represents a minimal intrusion into the experience of examining the original document. With regard to the Web version, the sophisticated paging devices greatly enhance functionality, but constantly invite the attention of the user.

Record layout

The layout of the facsimile is almost as simple as possible, showing on each page a photograph of a corresponding original manuscript page (see [figure 5](#)).

Figure 5: Page opening of the Codex Sinaiticus facsimile. Photo by Jason Gondziola. © The British Library board.



A benefit of such simplicity is that the physical manifestation of the book provides an approximation of the look and dimensions of the original codex, that is, a tangible representation of the materiality of the original object. Paul Foster's published review of the facsimile offers some insight into the value of the printed version as compared to the digital one, noting that "[n]otwithstanding [the] slight reduction in size, the print version gives a real sense of the size of the parchment pages.... [as well as] the overall dimensions of the original, and the reason why so few complete bibles were prepared as single books prior to the advent of printing" (Foster 2011, 543-544). In Bolter and Grusin's terms, the printed version is a prototypical example of an attempt at transparent immediacy.

The digital version, conversely, represents a prime example of hypermediacy, far removed from the original and with many boxes and controls with which to perform different operations (see [figure 6](#)).

Figure 6: Web interface of the Codex Sinaiticus. © The British Library board.

Various panes make it possible to zoom in and pan across the original manuscript, to view it in two kinds of light, to see a transcription by verse or by page, to see a translation in one of four languages, and to see a physical description of the manuscript page. Although these panes can be hidden or revealed by the user, a side effect of the greatly increased functionality of the digital edition is that the interface ends up looking more like a complicated machine than an ancient manuscript.

An additional factor with regard to record layout pertains to the transcription. Whereas the printed version is restricted to the continuous columns of unbroken prose of the original, the Web version gives users the option to change the layout of the transcription to one that employs the modern conventions of verses and chapters. This undoubtedly constitutes a great advantage for scholars, enabling leveraging of a universal referencing system that relates to all literature pertaining to these biblical texts, ensuring a kind of interoperability; however, it might also be argued that it imposes a modern point of view on the original document. In fact, this imposition of a modern point of view may be observed in *all* of the interface features mentioned here. It is not simply a matter of distraction; interface features serve to influence the nature of the analysis that is performed using them. Mats Dahlström makes this point in his article "How reproductive is a scholarly edition?" stating that bibliographic tools "carry with them a history of ideology and a hermeneutical heritage, and they also exert an interpretative influence over the objects they are designed to manage" (Dahlström 2004, 19). The appeal of the facsimile version of the *Codex Sinaiticus* resides in large part in the fact that this influence is minimized as much as possible, providing a "clean slate" upon which to meditate and draw fresh conclusions when a departure from the established intellectual tradition is desired.

Textual features

The printed facsimile edition of the *Codex Sinaiticus* is devoid of special textual features, other than the ones that appear in the manuscript itself. The Web edition has hyperlinked transcriptions that are mapped to the manuscript, so that clicking on a word in the transcription highlights the word in the manuscript. It also implements some of the words in the transcription as links that produce a hover box with information about changes made to the original text and the scribes who made them (i.e., a textual apparatus, in the form of textual notes). Again, the advantage of the printed version's approach is to let the user concentrate on the original document without distraction. The textual features of the Web version provide additional information and give the reader the opportunity to easily compare a transcription of the text with the original manuscript.

Content

The printed facsimile contains only photographs of the pages of the manuscript, along with the paging devices previously mentioned. The reference guide contains some history of the manuscript and the project, and the volume by David Parker contains a more detailed history. In addition to the historical material in the reference guide, the Web version contains a transcription of the entire manuscript, translations in four languages of portions of it, much higher resolution images than could be produced in the printed version, images of every page in two different kinds of light, and detailed physical descriptions of the pages. With the exception of the material in David Parker's book, the digital edition obviously contains much more content than the printed one. A sizeable amount of this content might be considered unnecessary by some users; indeed, Peter Shillingsburg writes that a fundamental danger of digital scholarly editions is information overload: "The comprehensiveness of the electronic archive threatens to create a salt, estranging sea of information" (Shillingsburg 2006, 165).

Analysis

Whereas the reason for the continued existence of a printed edition of *Cædmon's hymn* might best be viewed in terms of Manovich's *The language of new media*, the difference between the facsimile and digital versions of the *Codex Sinaiticus* might best be understood in terms of Bolter and Grusin's theory of remediation. It seems clear that the printed facsimile edition attempts to achieve transparent immediacy, allowing users to ignore the distraction of the medium itself and to slip into the illusion that they are touching and reading the authentic original manuscript. The digital version is a classic example of hypermedia, calling attention to itself by providing an array of tools and panes with which to dissect and study the text. These tools are useful for conducting new kinds of research but are distracting for those who desire a representative experience of the original text.

The publication of a costly and rather simplistic printed edition alongside a freely available and feature-rich digital version indicates that both immediacy and hypermediacy are seen as valuable aspects of some scholarly editions. This is particularly true in the context of facsimile editions, for which transparent immediacy might be considered the *raison d'être*. In cases where both a representative edition and the dissemination of commentary or other scholarly research is desired, a twofold method of publication such as the one seen here can allow for specialization and accentuation of the features that each medium does best; rather than detract from the immediacy inherent to the printed version with the inclusion of a transcription, for example, it can simply be provided online.

Conclusion

The printed editions of *Cædmon's hymn* and the *Codex Sinaiticus* that we have examined have been produced for different reasons; in the first case, the aim is to facilitate extended reading, whereas in the second, an attempt at an authentic representation of an original manuscript is made. However, it seems clear that in both cases, the editors have chosen to publish in both printed and digital formats in order to take advantage of perceived advantages inherent to each medium. If the existence of these strengths is acknowledged, then the question becomes whether the advantages of digital scholarly editions are so great that they eclipse whatever more modest benefits can be derived from printed ones. To refer again to Robinson's question, "Who would publish a scholarly edition in print, now that the digital medium exists?" it seems clear that there are still people who would. If humanists do dispense with printed scholarly editions, and step confidently into the digital realm, note should be taken not only of what is gained, but also of what is left behind (2010, 146).

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