# INTERFACING BIBLE: MOVING BEYOND THE BOOK

In the previous chapter, we looked at the the many contact points of high surface area, the interruptive processes of collaboration, and the irreducibility to a single original text or single proper use of anarchy in book interfaces of bible. I define book as a reading and writing technology that involves combining pages of material together in a sequence to create a discrete interface for a specific text or collection of texts.[[1]](#footnote-1) In this chapter I address the question of whether emerging technologies, such as manuscript digitization, extensible markup language (XML), and the internet, push bible as interface beyond the book. Though these emerging interfaces are changing user relationships with bible through new affordances and expansions of scale in familiar affordances, deploying digital technologies does not automatically transform the book into a radically new interface, in which the affordances of high surface area, collaboration, and anarchy are realized in ways never before imagined. In this chapter, I look closely at one bible interface that begins to extend beyond the book but does not supplant it.

## Consolidating a Legacy: The Codex Sinaiticus Project

The Codex Sinaiticus Project was a collaborative project to digitize, transcribe, and make available on the internet, the entire remains of the fourth century codex manuscript of bible known as Codex Sinaiticus. Launched on July 6, 2009, The Codex Sinaiticus Project website provides a direct material media translation of the codex interface explored in the previous chapter into a web interface, one of the earliest and most comprehensive attempts to bring an ancient bible interface into a new scale of user relationships through digitization and the internet.[[2]](#footnote-2) The collaborative nature of this project is evident immediately when you encounter the website. The rare four columns per page of the Sinaiticus manuscript are matched by the four institutional partners and the corresponding four interface languages available on the site.[[3]](#footnote-3) This kind of international collaboration was necessary given the goal of the project to restitch together the extant pieces of Codex Sinaiticus scattered among different libraries so as to recreate it as a single interface. Over the years, the remains of the codex spread across the British Library, the library of the University of Leipzig, the National Library of Russia in Saint Petersburg, and Saint Catherine’s Monastery.[[4]](#footnote-4) Even without a detailed analysis of the emerging technologies that enable the new interfaces of the Codex Sinaiticus Project, one can see here an expansion of the codex’s capacity for collectability at work in the gathering together of these disparate parts of the manuscript into a single interface through digitization and web delivery. In its time, Sinaiticus itself was a marvel in its capacity for collecting together texts into one interface. Before the fourth century, biblical codicies appeared either as individual texts or as smaller collections, such as Gospel books or Pauline letter collections.[[5]](#footnote-5) The Codex Sinaiticus Project revitalizes the manuscript’s affordance of collectability in new media forms by working to transcend political and spatial limits and bring four collections at four different institutions together into one bible interface.

The Codex Sinaiticus Project imagined itself as a multifaceted project from the beginning, with the driving values of conservation and dissemination of this historical manuscript.[[6]](#footnote-6) The conservation efforts of the project included the preparation and care of the manuscript leaves in each location as well as the digitization of each page of the manuscript for use in the multiple aspects of study and dissemination at work in the project. I admire the project team’s openness to both traditional and emerging technologies as means of providing access to the manuscript. Along with the web interface, which we will explore closely, the project has produced a traditional print facsimile of the manuscript,[[7]](#footnote-7) a major international conference,[[8]](#footnote-8) a popular level book discussing the history of the manuscript and the project itself,[[9]](#footnote-9) and an academic collection of essays from the conference[[10]](#footnote-10) analyzing interesting findings made available by the new interfaces of the project and detailing the technical procedures operative in developing the interfaces. This proliferation of interfaces for the project participates in some of the high surface area and collaborative capacities we found in the ancient codex itself.

The project has done cutting edge work to make Codex Sinaiticus accessible to a public audience without necessitating travel to four different locations around the world. Yet, the web interface of Codex Sinaiticus is not a simple reproduction of the parchment codex in digital form. The web interface of Codex Sinaiticus is a *different* bible interface built upon the data of the manuscript, which has involved media translations at several levels. Though the web interface provided by the Codex Sinaiticus Project definitely increases the opportunity for people to “connect with this famous manuscript,” this interface has created new affordances that go beyond the turning of parchment pages of the codex in the rare book reading room at the British Library. Just like the physical materialities of the giant book provide possibilities and limits for how a user might relate to this bible, so too the digital materialities of the Codex Sinaiticus Project web interface create a particular set of possible relationships of user with bible. One quick example of these material differences: If one were to participate as a user in the codex interface of Codex Sinaiticus at Saint Catherine’s Monastery Library, they would experience the binding of the codex as one of the material characteristics shaping the space of that interface. After all, the binding at one edge of the quires of the codex is one of the crowning aspects of book as we know it. In the web interface of Codex Sinaiticus, the images of the leaves show the marks of binding, but there is no user experience of the boundedness of the quires, except for the small glimpses of the folded pages seen in the margins of the photographs. Thus, in this web interface, we experience a kind of rebinding of the codex by bringing all of the leaves of Sinaiticus together in one interface again, yet the user contact with binding is minimized in the interface.

These material differences impact user relationship with bible. The binding of the codex manuscript allows it to lay open to offer two pages of the manuscript at a time to a user and the amount of parchment beneath each open half of the manuscript tells the user something about where they are within the whole of the book. Each page turn is a subtle material reminder that these pages are bound together into a singular volume, because it is the binding that affords this turning of the page. It would be hard for a user to imagine the Codex Sinaiticus parchment codex as anything but a collection of texts that shared a voice and had an intended relational arrangement. In the web Sinaiticus interface, the user is presented with one page at a time, not two. The fold of the binding of the codex page is visible in most of the digital images. Yet, there is little material connection to this binding for the web user, because the binding is no longer what affords user navigation through the manuscript. When a user uses the arrows or the menus of the web interface to move through the isolated pages of the manuscript, there are fewer material reminders that these pages are bound together in a fixed order. Though these may be subtle and often unnoticed material differences, these differences can have a significant impact on the use of bible.

As an example of bible interface beginning to move beyond book, I will look closely at the web interface created by the Codex Sinaiticus Project to see if and how high surface area, collaboration, and anarchy are afforded.[[11]](#footnote-11) At its simplest, the web interface of the Codex Sinaiticus Project is basically a material media translation and expansion of a print facsimile edition of an ancient manuscript into the medium of the web. Like a facsimile, this web interface affords broader access to the manuscript without increasing the numbers of hands touching the fragile ancient material. Often, in print facsimiles, the photography constrains what can be seen of the characteristics of the artifact, so physical descriptions and transcriptions accompany the photographs to help users have more data to work with in the interface. The Codex Sinaiticus Project expands on the affordances of a print facsimile by providing multiple images of each manuscript page and providing detailed in-line linkage between transcription, description, and location on the page.

The web Sinaiticus interface consists of four main parts, the digital images of the manuscript, a physical description of each page, a transcription, and a translation where available. Using the advantages of internet technologies, the web Sinaiticus interface has linked the images to the transcription in a detailed fashion, so a user can choose a discrete location either in the transcription or the image of the page and the interface will highlight that same location in the other. These connected layers are one of the distinct advantages of the web technologies used by the Codex Sinaiticus Project. After some initial analysis of the important material processes of digitization that undergird the Codex Sinaiticus Project as a whole and the general navigational aspects of the interface, I will focus our attention on the image and transcription portions of the web Sinaiticus interface to examine the possibility of high surface area, collaboration, and anarchy as affordances.[[12]](#footnote-12)

## Barely Beyond Book

The Codex Sinaiticus Project is barely beyond book as an interface. First of all, the project outcomes include two print books as interfaces with this ancient bible, *Codex Sinaiticus: The Story of the World’s Oldest Bible* and *Codex Sinaiticus: New Perspectives on the Ancient Biblical Manuscript*.[[13]](#footnote-13) In so many ways, the project uses a web platform to perform codex. It is still primarily oriented around the codex page, with linear and non-linear navigation affordances much like the Kindle bible interface.[[14]](#footnote-14) The bringing together of the extant leaves of the codex does not provide a new affordance but actually enhances the affordance of collectability. Even the different layers of the web interface, the image, the transcription, and the translation, are bound together in this interface by the synchronous focus when a user clicks on any one of the layers. When a user clicks on one part of the interface, such as the transcription, both the transcription and the image section of the interface respond since they are linked (or “bound”) together through meticulous use of backend internet encodings.

Yet, despite these codex-like attributes, the web Codex Sinaiticus interface begins to push beyond the book as it seeks to afford a relationship with the ancient manuscript that is beyond manually handling its pages, while still providing users access to the materiality of the parchment codex manuscript in some ways. More specifically, the ability to navigate and zoom the digital images in two different lightings, standard and raking,[[15]](#footnote-15) pushes beyond affordances we would typically find in a book. Because the web interface is not a static product, changes could continue to be made to the transcriptions and translations or to the design of the interface without necessitating a new edition of the interface.[[16]](#footnote-16) This flexibility of the design and content of the interface extends even beyond what we saw possible in the Kindle bible interface, which offered a static platform upon which the user could add dynamism in participation in the interface.

## Digitization as Translation

Though the Codex Sinaiticus Project pushes us slightly beyond the book, the interface remains largely oriented around the pages of the manuscript. At the core of both the conservation[[17]](#footnote-17) and access aims of the project was the digitization of the pages of this massive codex. We might be tempted to imagine the digitization process as a copying or reproduction of the manuscript page. At the level of content, words on a page, perhaps this notion of digitization as reproduction can hold, since the same words appear on the parchment page as do in the digital image. Yet, as I laid out in the introduction, with our attention here to the affordances of different material interfaces of bible, it is more useful to conceptualize digitization as a kind of material media *translation*. This particular kind of translation is not concerned with the languages of the text on the page, but with the material aspects of the interface. Much like we saw with the media translation of book from roll to codex, the process involves continuities and discontinuities between the two interfaces. Digitization is translation because it is the creation of a new interface from an old one involving similarity, difference, and mediation. The process of making discrete digital image artifacts from a page of the codex manuscript does not reproduce the codex, but instead it creates a new material artifact that offers a new interface with the codex. This new digital image interface will carry on some of the affordances of the parchment codex, will also erase others, and will introduce new possibilities in interface. In this process of translation, digitization affords many things including storage, access, disassembly, recombination, and new perspectives.

### Storage and Access

Remaining largely intact for well over 1500 years, Codex Sinaiticus has benefited from rather successful preservation and storage techniques throughout its lifetime. Yet, parchment decays with use. Capturing and storing high definition digital images of Codex Sinaiticus on redundant hard disk media that are not subject to the same long term environmental effects as parchment provides a diversified preservation plan to promote opportunities for engaging this codex even as the parchment and ink become more fragile with time. This storage on disk preserves access to one particular interface with Codex Sinaiticus, the digital image. There is careful work being done in all four locations that house portions of the parchment codex interface to provide appropriate storage facilities and practices to minimize the environmental impact of light, skin oils, and humidity on the ancient book. Similarly, the storage of the digital artifacts produced by the imaging process have to take into consideration the environmental conditions that might compromise the long term integrity of this particular interface of Codex Sinaiticus. With the emergence of distributed storage solutions, redundant copies of the digital image files can be stored in several locations all around the world to protect from any accidental damage or loss due to unplanned environmental events in one location, such as a fire, an earthquake, or a tsunami.[[18]](#footnote-20) Digital storage solutions also have to take into consideration the environmental conditions of the storage facilities, such as temperature and humidity, so that the electronics holding the digital files are not damaged. Digital image files themselves can also degrade over time, so whatever storage solutions are used for digital artifacts such as the high resolution images of Codex Sinaiticus must involve checking and repairing degradations in the digital files.[[19]](#footnote-21) The continuities in the storage and preservation demands for both the parchment interface and the digital image interface reinforce that digitization is a material media translation, not a virtual copy of a material original. Both interfaces have important materialities that shape their preservation and their use.

One of the main differences between the materiality of physical storage and digital storage is the means of access. In the case of the physical parchment manuscript, access simply demands being spatially collocated with the manuscript, having the appropriate permissions to handle the manuscript, and the sensory capacities to see, touch, smell, or hear this particular bible interface. Facility with ancient Greek language and *scripta continua* would be necessary in order to read the text of Codex Sinaiticus, but it is not necessary for other uses of this interface. So, in the case of the parchment codex, the only technologies of access needed would be transportation to the location of the manuscript and the necessary protective gear to preserve the manuscript when handling. Technically, all a user needs is hands to open this codex interface. This is not the case with the digitized interface of these codex pages. The digital image files are composed of a series of binary strings that can be read by a computer processor, translated into a series of pixels with RGB (Red, Green, Blue) color values and displayed on the screen as a bitmap, a rectangular grid of these pixels. An additional layer of access software is required for a user to open these digital images of the pages of Codex Sinaiticus to view them, having access to the files themselves is not enough. With the rapid rate of change of file storage formats and software to interpret them in our contemporary technological landscape, this demand for an additional layer of software to access digital artifacts has become a major concern for archivists.[[20]](#footnote-22) While digitization affords an expansion in potential access by making the digital images of the codex pages available to a larger audience using internet technologies, this expansion in access also adds some complexity to the ongoing preservation task by demanding continued attention to changes in file storage and image rendering standards.

### Disassembly and Recombination

Capturing digital images of the leaves in all four locations of the manuscript also performed a double move, a move toward higher surface area by capturing each page as a separate and distinct object in its own digital image file and a move toward the possibility of lower surface area with the ability to bring all of these images together into one single interface again. The digitization process itself is a kind of fragmentation, taking small bits of this parchment codex and translating that bit into a different material medium, a digital image file. Though these digital image files can be related to one another through their content or the metadata supporting them, each digital image is an artifact of its own emerging from a particular use of this codex bible interface. A user could certainly engage just a single page of Codex Sinaiticus in the reading room of the British Library, but the majority of these pages are still bound together at the spine of the book, framing each page as a part of a larger artifact. The digital images taken in the Codex Sinaiticus Project effectively unwind the binding of the ancient codex and created a discrete and independent interface for each page of the codex.[[21]](#footnote-23) Theoretically, each of these digital artifacts could be handled as an independent bible interface. Yet, the Codex Sinaiticus Project team worked hard to provide metadata for these digital artifacts to afford easy collection and recombination of these discrete pages. As mentioned earlier, one of the main aims of the project was to reassemble the codex into one single interface from the four different locations, to allow users to encounter the manuscript (in its digital translation) in its entirety. Though digitization of the pages of Codex Sinaiticus performed a disassembling of the book, the use of these digital artifacts by the Codex Sinaiticus Project to construct a singular online interface with the entire manuscript has enacted a kind of rebinding that exceeds the material limits of the parchment codex spread across four physical locations.

## Navigating a Web Bible Interface

One major component of the online interface of Codex Sinaiticus as designed and delivered by the Codex Sinaiticus Project in 2009 is public access to high resolution images of each extant fragment of this ancient bible without need for any additional permission and needing only a web browser. Making these images available to a much larger audience through the capacities of the internet is a radical expansion of an affordance offered by a print facsimile edition, namely access. This fantastic accomplishment must be acknowledged, even if I will have some critiques of the interface itself. Codex Sinaiticus is one of our most important extant bible manuscripts and the collaborative effort put in by all of the project teams to make this web interface has afforded many the opportunity to study and engage the tradition of this manuscript and the history of bible in heightened ways. This increased exposure to these interfaces has the potential to invite new and different voices into the discussion of antique book making and bible as interface. The Codex Sinaiticus Project web interface is designed predominantly for scholarly users, given the demand for facility with Greek, the use of technical language top describe the manuscript (e.g. recto/verso), and the lack of investment in the translation aspects of the interface. Yet, the number of visitors to the site suggest that a broader interest in the materiality of manuscripts and the history of transmission of this particular ancient book brought many others to participate in the interface.

The web interface of Codex Sinaiticus contains four main components–image, transcription, translation, and physical description– with robust navigation of the bible interface and global project site navigation.[[22]](#footnote-24) To provide a general picture of the shape and structure of the web Sinaiticus interface, I will begin with a close look at the materialities of navigation available in the site. The reason I mention both the global project site navigation and the bible interface navigation is to highlight that I am focusing on only one part of the larger Codex Sinaiticus Project web site. The global site navigation offers access to more information about the history of Codex Sinaiticus and the project itself, along with a quick link to any biblical book in the bible interface. The structure of the web bible interface is consistent throughout, with a few user options along the way. The page is basically broken into two columns, with a header section that spans both columns and holds most of the navigational elements and user options. The header of the interface holds two primary forms of navigation and a set of user options to control what shows in the left hand column of the page. Users can navigate the bible interface by biblical book, chapter, and verse, or by page identifier, which is combination of quire number, folio number, and recto or verso.[[23]](#footnote-26)

As I mentioned above, this navigation by page identifier continues to perform the materiality of codex and it remains the primary organizational scheme for the entire web bible interface. For example, navigating the interface by book, chapter, and verse takes a user to the image of the page that contains the verse selected in the navigation, but does not indicate where the verse is on the page or focus the viewable area on the verse. Both of these header navigation options are simply ways of selecting an image of a page based on its order in the codex. This navigational section of the interface has no affordance for search, only selection of a page and arrows for navigating linearly through the text, page by page or first and last page.

The last item in the header of the interface is a “display options” selector, which allows the user to select what content is displayed in the columns below. The selector does not affect positioning on the page, but operates as a set of on/off switches that show or hide the manuscript image, the detailed physical description, the transcription, and the translation. The image, the translation, and the transcription can each be displayed alone on the page or in any combination, giving the user an ability to focus on just one aspect of the interface at a time or in concert. If only one of these items are selected, that block fills the entire width of the page, effectively making the page a singular column. When the image is displayed with one of the other blocks, it fills the left column of the page, which is approximately 25% larger than the right column. Again, the size and position of the image block suggests the priority and prominence of the digital image. The transcription and translation blocks fill the right column of the page when enabled, with the transcription above the translation. The transcription block is approximately twice the height of the one containing the translation, which can be an indicator of the heightened value of the transcription with respect to the translation in this bible interface. The user has no control of the size or position of these blocks when enabled together.

The physical description of the manuscript can only be displayed in the right column alongside the image of the manuscript page and if turned on, the transcription and translation blocks are hidden automatically and disabled. Given the two column design of the web interface and the rich amount of data provided in the physical description block, these limits make sense. As the small info box, indicated by a small lowercase “i” in the top left corner of each of the content blocks available on the page, suggests, the physical description has many items that are linked to specific locations on the image of the manuscript page. When a user clicks on a linked location item in the physical description, that region of the manuscript image is highlighted with a red box. This linkability makes it useful to require the image to display alongside the physical description, even though both blocks can still be engaged on their own.

This kind of user driven selection differentiates this web interface from its ancestor, the print facsimile of the codex.[[24]](#footnote-27) Like the facsimile, this web interface has a fixed structure oriented around the image of the page of the manuscript. Yet, similar to the Kindle bible interface, the user selections of displayed items in the web Sinaiticus interface afford collaboration in this web bible interface, explicitly involving the user in the making of the space of the interface. Recall that the affordance of collaboration has at least two expressions in our notion of interface, the potential participation of users with other users and the user participation with the platform in constructing the space of interface that we see here in the web Sinaiticus interface. The key difference between the Kindle interface and the web Sinaiticus interface is that the user of the latter does not define the boundaries of the bible page as they do with the former. In the Kindle interface, a user can select the font size, color, orientation, and columnar structure of the page, effectively deciding the boundaries and physical characteristics of the reading environment, defining the size and structure of the page. Here in the web Sinaiticus interface, the structure of the bible *page* is stable even as the content of the web *page* shifts based on user selections. A close look at image and transcription areas of the interface and the way in which they are connected will highlight the degree to which this Codex Sinaiticus web interface exhibits the affordances of high surface area, collaboration, and anarchy.

## Image of/on the Page

Once a user uses the navigation options to locate a page of the manuscript, the interface loads the digital image of that page in the largest block on the screen. Above the image, a basic description of the page is provided that includes the beginning and ending passages on the page, the library holding this particular physical fragment, the folio indication from the page itself, and the scribe(s) thought to have composed this particular page. The single image selected by the user is loaded with its top left corner aligned with the top left corner of the image block at the lowest zoom level. Depending on the size of the user’s screen, the image block will show a certain portion of the manuscript page at once, rather than zooming in or out to make sure the whole page is visible initially. If the user selects to display only the image and none of the other blocks, then much more of the image will be visible at once. The design of this image block heightens the surface area of this bible interface with respect to the parchment codex by showing smaller bits at a time and by offering two different images of each page. Each page of the parchment codex is typically viewed with the book open at the spine, which puts two pages open at once. This web interface of the images of Codex Sinaiticus breaks up the viewable field of the bible into smaller bits by showing only one page at a time and requiring click or drag navigation to see the entirety of that one page.[[25]](#footnote-28) The image block does include a small pop-out window in the bottom right of the block that shows the whole image and allows the user to click a spot to reposition the image in the larger viewable area to focus on the spot clicked. There are zoom and navigation tools in the image block that allow the user to move around in the image and to get a closer look at certain features of the page, such as small marginal notes, blemishes in the parchment, differences in scribal hand, and even faint erasure marks within the text.

The image of the codex page is loaded as a grid of four by four sections of the single image, each as separate image objects on the web page. Not only has the giant codex been broken up into discrete images of each page, the web interface breaks these pages up into a grid of discrete objects to afford easier navigation and focus on small bits of the page.[[26]](#footnote-29) This ability to focus on bits of the page as discrete objects is an indication of the high surface area afforded by the interface.

Adding to the high surface are of this web Sinaiticus interface, a user can select two different images of the codex page, one in standard light and one in raking light.[[27]](#footnote-30) Both images show the identical page of the manuscript, but with different lighting used during the digitization process.[[28]](#footnote-31) Raking light is a common approach in manuscript and art digitization that photographs artifacts with a low angle of light glancing off the surface of the artifact, which helps highlight physical features. The choice of lighting provides the user another locus of participation in constructing the interface. In one sense, providing two different lighting perspectives provides a higher surface area than only having a single image to work with. Any limited and static number of snapshots of the codex page affords a lower surface area interface than the many different perspectives and lighting options available when handling the parchment manuscript in the dynamics of a lighted room. When handling the parchment manuscript, a user could pick up the manuscript and get different angles of light or carry the manuscript to another room with higher or lower light, so perspectives are not limited by the fixed snapshot in time provided by photography.

Although holding a codex in the room theoretically affords unlimited lighting options, most users of books simply choose one spot to read with one particular angle of lighting. The intentionality of the angular exposure of raking light affords different points of contact between the user and the image of the manuscript in this web interface, particularly related to the “surface” of the page. Raking light can reveal to the user markings from the binding process, blemishes in the skin of the animals used to make the parchment, and erasure marks. This makes the Sinaiticus web interface higher surface area than the typical use of a codex interface a typical print facsimile, which only provides a single view of each page with fixed lighting and size.

The navigational design of the web Sinaiticus interface encourages a close attention to one image of one page of Codex Sinaiticus at a time, highlighting the discrete nature of the digital image artifacts made from the parchment codex.[[29]](#footnote-32) The discreteness and high surface area of this fragmented approach can be seen in contrast with the web interface for the digital images of the Great Isaiah Scroll 1QIsaa I discussed in a previous chapter.[[30]](#footnote-33) The Isaiah Scroll web interface foregrounds the continuity of the roll and the relationship of each image to the roll as a whole. As a user navigates through the roll or zooms in on a piece of the manuscript, the location within the whole of the roll is never lost.[[31]](#footnote-34) In the web interface of Codex Sinaiticus, the focus is on close analysis of one page at a time. There is very little in the way of contextualizing each page in the whole codex and there is no attempt to emulate or material-media translate the turning of pages in the codex, as many other electronic book platforms attempt.[[32]](#footnote-35) As can be seen in the critical comments offered by Peter Robinson, a member of the Codex Sinaiticus Scholarly Edition Working Party, in his reflections on the production of this important interface, the project team had a decidedly scholarly focus, hoping to facilitate close engagement with this historic bible.[[33]](#footnote-36) The high surface area approaches of digitization and interface design focused on small bits of the manuscript afford this kind of close engagement with the digital artifacts that comprise this web bible interface. This high surface area approach to affording close study of Codex Sinaiticus outweighs the decrease in surface area brought about by the digital reassembly of the codex in one interface.

## Transcription

In the info bubble connected to the transcription block of the Codex Sinaiticus web interface, the text reads, “The transcription is a letter-by-letter electronic version of the text in the Codex Sinaiticus.”[[34]](#footnote-37) Peter Robinson suggests that the production of this electronic transcription of Codex Sinaiticus could be considered “as remarkable an achievement as Gutenberg’s Bible.”[[35]](#footnote-38) Though this electronic transcription has not attained the historical importance or impact of Gutenberg’s Bible, it is nonetheless a critical part of this bible interface. As I have said from the beginning of this analysis, the digital images of the codex pages remain the central organizing principle of this bible interface and the transcription process is no exception. The transcription block provides three main features for the user, a translation of the *scripta continua* into discrete words with spaces, the ability to navigate the digital images by clicking on any word in the transcription or vice versa, and hyperlinked pop-up boxes indicating any scribal activity on the page, such as marginal notes, deletions, and emendations. The electronic transcription presented to the user in the web interface is derived from a detailed dataset encoded to locate each word of the transcription in its appropriate spot on the reconstructed columnar page and to map each word to the corresponding position of the word or feature on the digital image.

Extensible Markup Language (XML) was used for the encoding of this positional and image alignment data.[[36]](#footnote-39) XML is a markup language that uses tags to signal the hierarchy and attributes of elements in a data set. For example, in the XML of the Codex Sinaiticus transcription, we find tags for page, column, line, and word, among others. Here is a sample of the final XML used for a small portion of a page of the manuscript.

1. **<pb** id="S-80-1r" corres="E-80-1r" n="80-1r" scribeid="A" archive="BL" localfol="247" **><margin** type="topmargin"**><margin** type="marginright"**><note** type="quireSig" n="79" **>**οθ **</note><note** type="folionum"**>** 247**</note></margin>**
2. **</margin>**
3. **</pb>**
4. **<cb** id="S-80-1r-1" corres="E-80-1r-1" n="1" **><margin** type="coltopmargin"**>**
5. **<margin** type="center"**><note** type="booktitle" scribe="S1" comment="Book title added by corrector S1"**><w** n="1"**>**κατα**</w>** **<w** n="2"**>**ϊωαννην**</w></note></margin></margin></cb>**
6. **<lb**  id="S-80-1r-1-1" corres="E-80-1r-1-1" n="1" rend="hang" vnumber="1:1"**><margin><note** type="ECN" Ammonian="1" Canon="3"**><hi** rend="red"**><hi** rend="ol2"**>**α**</hi></hi><lb** **/><hi** rend="red"**>**γ**</hi></note></margin></lb></ab></div><div** id="K-B36K1V1-36-JOHN" n="1" type="chapter"**><ab** id="V-B36K1V1-36-JOHN" n="1"**>**  **<w** n="1"**>**εν**</w>** **<w** n="2"**>**αρχη**</w>** **<w** n="3"**>**ην**</w>** **<w** n="4"**>**ο**</w>** **<w** n="5"**>**λογοϲ**</w>**  **<lb**  id="E-80-1r-1-1" corres="S-80-1r-1-1" **/>**

This is the XML for the page where the Gospel of John begins in the Codex Sinaiticus manuscript. For those of us who are accustomed to focusing on the content of bible interfaces, in line eight of the XML, you will find the title of John’s Gospel, *κατα ϊωαννην*, and on the second to last line, you will find the first five words of the gospel in Greek, *εν αρχη ην ο λογοϲ*. The rest of this seemingly complicated, yet incredibly regular bit of code provides data related to the various features of this bit of the manuscript and its relationship to other parts. For example, the <pb> tag in line one indicates the beginning of a page, the <cb> tag in line four indicates the beginning of a column, and the <lb> tag indicates the beginning of a line.[[37]](#footnote-40) The “n” values in each of these tags provides an index or count to help orient a user to their position in the manuscript and on the page. Reading these n values together, we can tell that this sample page is the recto side of the first folio of quire number 80 (<pb n=“80-1r”>) and we are looking at line one (<lb n=“1”>) of column one (<cb n=“1”>). <Margin> and <note> XML elements are used to define and locate items on the page that are outside the columnar structure of the manuscript page, such as the folio number marking at the top right of the page and the book title added by scribe 1 at the top of column one. We see chapter and verse identification in this encoding with the <div> and <ab> tags, and then finally, at the end of this block of code, we find the Greek words of the first line of column one of this page, divided and numbered by <w> tags.

This encoded data drives the user’s interaction with the transcription block of this bible interface in important ways. First, the data of the transcription remains deeply embedded in and connected to the structures of the manuscript page, particularly with the presence of page (pb), column (cb) and margin (margin) tags. All of the markings on the page are linked to positions on the page as captured by the digital image. Second, the page itself is broken into smaller operational units; in this case the smallest operational unit permitted by the XML data is the word. Allowing the user to select any single word object on the digital image by clicking either in the transcription or on the image provides a large increase in the contact points a user may engage and continues the progression toward higher surface area from the single image of the page to the sections of the page referenced in the physical description block, now to the word level in the transcription block. This increase in surface area is analagous to the difference between an image based PDF produced when scanning a library book, where each word is not selectable for highlighting, and a text based PDF generated by the “save as” function in a word processing program, which allows the user to select an individual word for highlighting and annotation.

Yet, at the same time, the XML encoded transcription divides the text by word units, not character units, thereby reducing the demand on the reader as compared to the *scripta continua* of the parchment codex. Reading continuous script requires the user to process each character and its potential relationship to the one preceding and following it. Transcription makes those decisions for the user; word breaks have been decided and the nature of scribal activity on a particular word has been codified and labeled. These encoding choices by the team creating the web Sinaiticus interface are largely invisible to the typical user of the web interface, yet they have a significant impact on the limits of a user’s participation in constructing the interface. The added richness and layers of data provided by the XML encoding of the digital transcription make the text of Codex Sinaiticus vastly more accessible for many users, yet they lower the demand for participation by the user, thus diminishing the surface area of the interface. The danger in affording lower surface area could be to foster an interface that becomes more about the simple consumption of content by users instead of encouraging dynamic participation in interface. As I will show below, this decrease in surface area through the layering of word breaks over the *scripta continua* of Sinaiticus is offset by other means of expanding the affordance of high surface area in this web Sinaiticus interface.

## Expanding Surface Area

Now that we have taken a close look at the major components of the Codex Sinaiticus web bible interface, we can assess the ways in which this interface might afford high surface area, collaboration, and anarchy. We have seen tensions at work in the surface area of this interface from the beginning with the digitization breaking the manuscript into discrete page images and then pulling them all back together in a singular web interface. The physical description and transcription blocks of the interface helped break these singular page images into even more points of contact, while at the same time the word breaks of the transcription diminish the surface area of the continuous script of the manuscript page. Even with these tensions, the sheer complexity and multiple facets of this web bible interface enact the affordance of high surface area. A user can participate in this interface from several different angles, beginning with a particular image of a page or a scribal note in the transcription or blemish on the parchment cataloged in the physical description. With all of the linkability and vast amount of data provided in this interface, users can create paths through this bible that would be difficult to replicate a second time, meaning user participation in the interface is not highly standardized. Though one of the aims of the Codex Sinaiticus Project was to provide a comprehensive and complete interface with this bible, the high surface area of the interface in the volume of data, the many means of approach, and the single page at a time navigation provides a resistance to a user’s ability to master the whole thing.

## Hints Toward Collaborative Capacities

Sadly, the collaborative nature of the Codex Sinaiticus Project itself, with four institutions and several teams of people involved at every level, does not carry over into the mechanics of the web interface. There are a small number of design elements that allow for collaborative construction of the space of the interface, but the interface lacks any explicit means of participation in extending or amending the markings on the page of the codex or even the digital images of those pages. Even the transcription and translation blocks, the more textual areas of the web interface, allow for no collaborative commenting, questioning, editing, or suggesting alternatives. In a way, this web bible interface is open to less participation than we see with the layers of scribal and editorial tradition in the parchment codex.[[38]](#footnote-41) Though the physicality and content of this web bible interface may demonstrate fewer collaborative affordances than its parchment codex counterpart, the simple fact that this interface is public and accessible with only a web browser exponentially expands the collaborative possibilities provided by this interface.

For example, there is a group of students, staff and faculty at my institution who read Greek weekly together. This reading group has recently decided to work their way through some portions of Codex Sinaiticus. The group could all have purchased a facsimile edition of the manuscript or shared the library’s copy, but this web interface makes it infinitely easier for them to engage this bible together and allows them to include others that may not be physically located in the same place through web conferencing and screen sharing tools. With the creative use of additional technologies such as the web annotation tool hypothes.is, the public and web based access of this bible interface affords users the ability to collaboratively mark, annotate, and discuss the pages of this bible within the browser.[[39]](#footnote-42) So, even if the technologies of the Codex Sinaiticus web interface do not provide the capacity for collaborative annotation natively, the choice to make these digital images, the transcriptions, and the physical description data available publicly on the web affords the possibility for collaborative engagement through access, dialog and emerging web annotation technologies.

## Anarchic Possibilities Unrealized

Any interface that is available to the public and involves the bizarre collection of writings gathered together in Jewish and Christian bibles is bound to provide some possibility of anarchy. It is hard to control or determine what a user might do with the artifacts and assets provided in a public web interface and it is difficult to consolidate the multiple disparate voices of these collected texts into one singular harmony. Yet, the Codex Sinaiticus web bible interface demonstrates far more archic affordances than anarchic. If anarchy suggests the irreducibility of an interface to the governance or reign of a singular origin or principle, it is hard to see such affordances operative in the Codex Sinaiticus web bible interface. The reconstitution of an original book and the reconstruction of that book’s original text seem to be the driving force of the entire interface, both archic impulses. Let me say it again, I do not intend to disrespect the incredibly valuable work done to produce this magnificent interface for engaging this treasure of a bible, from which my own scholarship has benefited. I merely mean to suggest that the design of this bible interface directs use toward the consolidation of the legacy of a singular material manuscript, instead of toward the ongoing making of this bible as we saw in the scribal participation on the parchment page.

The electronic transcriptions of this web bible interface do an exquisite job of representing this anarchic scribal participation on the parchment page in an electronic translation, yet where does a user expand or enhance or contribute to the tradition of this manuscript in the web interface? The digital images provided in this interface offer close examination of both the materiality and the textuality of the pages of this codex, yet how does a user of this web interface leave a mark on the page that stays with the page as other users interface with it? Perhaps this is why many, including David Parker, one of the principle scholars involved in the Codex Sinaiticus Project, continue to use the language of real and virtual when discussing the difference between the parchment codex and the web interface that constitute Codex Sinaiticus. I prefer not to deal in the binary of real and virtual, because both of these interfaces have a materiality. Users can participate in both if they have the means, even if one interface is easier to access than the other.

The decision not to allow web users to leave their mark in this bible was an intentional choice, not a technological necessary. Peter Robinson articulates this archic tendency well when he says, “Indeed, the data on the site is frozen: it can be used only on the site; it can be used only in the ways the site allows, using the tools the site’s makers thought to make available.”[[40]](#footnote-43) Robinson, a scholar deeply invested and involved in this particular interface design and construction, offers an alternative model for the making of a scholarly edition like that which we have in the Codex Sinaiticus web interface. His vision for an alternative model involves open access to data, distributed community involvement, and a potential proliferation of interfaces, which can easily be mapped onto the affordances of high surface area, collaboration, and anarchy, respectively.[[41]](#footnote-44)

The Codex Sinaiticus Project as a web bible interface affords high surface area but lacks in the areas of collaboration and anarchy. Robinson’s suggestions of more community involvement and more open data access would radically challenge the tendency of scholarly editions toward closure and would open a potential engagement across disciplinary boundaries. Yet, at present, the energy or the money to maintain or expand the existing Codex Sinaiticus interface is not there. The interface was released in 2009 and the design has largely remained stagnant since, reinforcing Robinson’s suggestion that the the interface is dying and taking the data with it.[[42]](#footnote-45) The design of the interface pushes bible users ever so slightly beyond the book, with the layers of linkable data related to the images of the page and the potential dynamics of these data. Despite the sophisticated internet technologies used to facilitate a “beyond the book” user experience, the codex becomes almost more codified in this particular web interface because of the user’s inability to mark the page at all. It will take the work of a new generation of users to imagine the affordances still dormant in this interface with experiments toward user annotation, community sourced translations, and data in an open standard that will all encourage further interfaces that can emerge from this one.

1. Even if these book interfaces have dominated the cultural imagination of bible throughout most of its history, bible has always exceeded the book through aural/oral interfaces such as storytelling and preaching as well as artistic interfaces like music and art. [↑](#footnote-ref-1)
2. To learn more about the project and to participate in the interface, see http://www.codexsinaiticus.org. To read more about this great manuscript and the process undertaken to make this digitization project possible, see the chapter on “The Virtual Codex Sinaiticus” in David Parker’s popular level book on the history of this manuscript, *Codex Sinaiticus: The Story of the World’s Oldest Bible*, 167-184. As I will explore in detail later, Parker includes a discussion of the use of XML to construct the transcription portion of the interface. For a more detailed account of the project as a whole, see the collection of essays in Amy Myshrall, David C Parker, and Scot McKendrick, *Codex Sinaiticus: New Perspectives on the Ancient Biblical Manuscript* (London: The British Library Publishing Division, 2015). [↑](#footnote-ref-2)
3. The interface languages available on the site reflect the four main partners, including English (British Library), German (Leipzig University Library), Greek (St. Catherine’s Monastery), and Russian (National Library of Russia). [↑](#footnote-ref-3)
4. One of the principles of the project as agreed to by all parties was to reconstruct a modern history of the manuscript upon which all partners could agree and to publish this history along with access to the documents themselves. See http://www.codexsinaiticus.org/en/codex/history.aspx and Section 4 in the chapter in Amy Myshrall, David C Parker, and Scot McKendrick, *Codex Sinaiticus: New Perspectives on the Ancient Biblical Manuscript* (London: The British Library Publishing Division, 2015). [↑](#footnote-ref-4)
5. Codex Sinaiticus demonstrates an expansion in scale of collectability for the codex, bringing together both texts from the Septuagint and the New Testament into one volume. For early examples of smaller collections, see P45 (a 3rd century collection of Gospels and Acts) and P46 (a 2nd/3rd century collection of letters attributed to the Apostle Paul). For a discussion of the limits of early codex construction and these two manuscripts in particular, see Harry Gamble, *Books and Readers in the Early Church* (New Haven: Yale University Press, 1997), 66-67. [↑](#footnote-ref-5)
6. See pp. xvii-xviii of Amy Myshrall, David C. Parker, and Scot McKendrick, *Codex Sinaiticus: New Perspectives on the Ancient Biblical Manuscript* (London: The British Library Publishing Division, 2015) for an account of the multiple facets or products of the project. See “About The Project,” http://www.codexsinaiticus.org/en/project/, accessed August 26, 2017, for an outline of the main aims of the project and “Participants,” http://www.codexsinaiticus.org/en/project/participants.aspx, accessed on August 26, 2017, for a full list of the participating institutions, scholars and funders. [↑](#footnote-ref-6)
7. *Codex Sinaiticus: A Facsimile*, (London: British Library, 2010). [↑](#footnote-ref-7)
8. For details about the conference, see “Codex Sinaiticus Conference,” http://www.codexsinaiticus.org/en/project/conference.aspx, accessed on August 26, 2017. There was a second conference held at the National Library of Russia, St Petersburg, in November of 2009. [↑](#footnote-ref-8)
9. David C. Parker, *Codex Sinaiticus: The Story of the World’s Oldest Bible* (London: The British Library, 2010). [↑](#footnote-ref-9)
10. Amy Myshrall, David C. Parker, and Scot McKendrick, *Codex Sinaiticus: New Perspectives on the Ancient Biblical Manuscript* (London: The British Library Publishing Division, 2015). [↑](#footnote-ref-10)
11. I am deeply indebted to the Codex Sinaiticus Project for providing access to a treasure that has shaped my own scholarly work in significant ways and I cherish the opportunity to reflect on the challenges and possibilities of the materialities of this particular digital bible interface. [↑](#footnote-ref-11)
12. Though I will not focus on them in my analysis of affordances in the web Sinaiticus interface, the translation and physical description blocks deserve a brief mention. The physical description portion of the interface deserves significant attention in its own right. The constraints of this project do not allow for a fuller exploration of the impact of the physical description data on the use of this bible interface. The extensive and careful cataloging of the characteristics of the parchment page along with the technical aspect of linking these features to specific locations on the digital image are an extraordinary data source of their own. Depending on the features of the page, the physical description may include information on things like parchment thickness, scribal markings such as ruling lines, binding marks, damage to the parchment, and any repair attempts. In order to easily locate the physical features on the image of the codex page, each page was divided into text and marginal sections and labeled. These labels, such as “c5” referring to line five of column three on the page, can be referenced in the physical description and linked using hypertext to highlight that section on the image for the user. This chunking of the page into sections and allowing the user to focus on a particular feature of the page based on the data provided in the physical description offers another avenue for increasing the surface are of this bible interface. For an incredibly detailed and informative explanation of the sections and abbreviations used in the physical description block, see http://www.codexsinaiticus.org/en/project/conservation\_physDesc.aspx. For an example of the process and value of recording the physical characteristics of Codex Sinaiticus, see Gavin Moorhead, Sara Mazzarino, Flavio Marzo, and Barry Night, “A Physical Perspective of Codex Sinaiticus: An Overview from British Library Folios,” in Amy Myshrall, David C Parker, and Scot McKendrick, *Codex Sinaiticus: New Perspectives on the Ancient Biblical Manuscript* (London: The British Library Publishing Division, 2015), 221-238. The translation portion of the website seems to have garnered the least investment. There is not a single entry on translation in the collection of essays derived from the conference generated by the Codex Sinaiticus Project and the page of the project site devoted to translation, http://www.codexsinaiticus.org/en/project/translation.aspx, minimizes the role of translation in the project, saying, “The Codex Sinaiticus Project was primarily a conservation, digitisation, transcription and publication project. It did not aim to undertake a new English translation of the writings preserved in the manuscript.” Though the translation block offers the user an ability to select one of four languages for the translation, representing the four languages of the institutions involved in the project, there are no modern Greek or Russian translation available, and only Esther is available in German translation. This translation area of the interface has received such little attention that selecting the Greek translation option offers a message within the block in English that says “No english translation available.” English translations are available for the entire New Testament, Esther, and the first thirty five Psalms. [↑](#footnote-ref-12)
13. David C. Parker, *Codex Sinaiticus: The Story of the World’s Oldest Bible* (London: The British Library, 2010 and Amy Myshrall, David C. Parker, and Scot McKendrick eds., *Codex Sinaiticus: New Perspectives on the Ancient Biblical Manuscript* (London: The British Library Publishing Division, 2015). [↑](#footnote-ref-13)
14. Parker, *Codex Sinaiticus*, 167, refers to the web interface of the project as “The Virtual Codex” and in the title of his essay, “The Making of the Codex Sinaiticus Electronic Book,” in the collection that came out of the Codex Sinaiticus Project conference, Peter Robinson indicates that the project team also thought of this web interface as a book. Though the language of “Virtual Codex” makes good sense for a popular level work like Parker’s, I am uncomfortable with the typical hierarchical valuation of the so called real over the virtual. I prefer to think of the parchment codex and the website as two different interfaces, each with their own “real” materiality that make possible a different set of affordances. [↑](#footnote-ref-14)
15. For a detailed description of the different lighting techniques used in the project to provide two different images for each manuscript page, see “Digitisation,” http://www.codexsinaiticus.org/en/project/digitisation.aspx, accessed on August 26, 2017. For a discussion of different illumination techniques, including raking light, in the digitization of ancient materials, see Lindsay MacDonald, *Digital Heritage: Applying Digital Imaging to Cultural Heritage* (Amsterdam: Elsevier, 2006), 44-45. [↑](#footnote-ref-15)
16. Changes in the transcription are recorded in the XML of the transcription in the change elements of the revision description block (revisionDesc tag). When I downloaded the XML of the full transcription on April 17, 2017, there were 7 change elements describing modifications from the initial release of the transcription on July 6, 2010 to a few encoding corrections on March 25, 2014. [↑](#footnote-ref-16)
17. For details of the physical preservation techniques at one of the locations of Codex Sinaiticus, see Hieromonk Justin of Sinai and Nikolas Sarris, “The Conservation and Photography of Codex Sinaiticus at Saint Catherine’s Monastery: Not Quite Finished,” in *Codex Sinaiticus*, Amy Myshrall, David C. Parker, and Scot McKendrick eds. (London: The British Library Publishing Division, 2015), 239-251. For a detailed report from the conservation team of the project, see http://www.codexsinaiticus.org/en/project/conservation\_report.aspx. [↑](#footnote-ref-17)
18. Since 1844, the parchment interface of Codex Sinaiticus already began a kind of distributed storage approach as visitors to St. Catherine’s Monastery, such as biblical scholar Constantine Tischendorf and Russian Archimandrite Porfirij Uspenskij, took portions of the codex to Germany and Russia, respectively. For a detailed reconstruction of the history of the codex, see “History of Codex Sinaiticus,” http://www.codexsinaiticus.org/en/codex/history.aspx, accessed August 26, 2017. Though this kind of distributed storage of the codex among different physical locations does provide some protection from catastrophic loss of the whole manuscript, it still risks complete loss of each portion. The digital distributed storage solutions provide redundant copies of all of the images in multiple locations. [↑](#footnote-ref-20)
19. The Codex Sinaiticus Project has not publicized any details regarding their digital preservation techniques. A great example of this kind of material preservation at the digital scale can be found in the preservation process used by the USC Shoah Foundation to monitor and maintain the integrity of its massive collection of digitized testimonies of Holocaust survivors. For details on the technologies involved in this digital preservation, see the Foundation’s video about preservation at http://sfi.usc.edu/vha/preservation. For another detailed account of the factors considered in a digitization project, see Diane Bockrath et al., “Parchment to Pixel: The Walters Islamic Manuscript Digital Project,” *Art Documentation: Bulletin of the Art Libraries Society of North America* 29, no. 2 (Fall 2010): 14–20. [↑](#footnote-ref-21)
20. See Laura Carroll et al., “A Comprehensive Approach to Born-Digital Archives,” *Archivaria* 72 (2011): 61–92, for the emerging challenges and practices related to archiving and accessing digital artifacts. [↑](#footnote-ref-22)
21. The physical characteristics visible in the images often still signal each page’s participation in a larger interface, such as the page junction often visible at one edge of the image and the faintly visible outline of writing from the opposite page. [↑](#footnote-ref-23)
22. The interface also has a footer section that lists the funders of the project. [↑](#footnote-ref-24)
23. A quire is the basic unit of a codex, a bundle of pages bound at the spine. A large codex like Codex Sinaiticus is a multi-quire codex, with many quires bound together to make up the codex. Folio number refers to the one page of the book defined from binding to edge. Recto and Verso are latin designations referring to the front and back of the page, respectively. [↑](#footnote-ref-26)
24. See the facsimile editions of Constantin von Tischendorf and Petrograd. *Publichnaia biblioteka, Bibliorum codex sinaiticus petropolitanus* (Petropoli: sn, 1862) and British Library et al., *Codex Sinaiticus*, (Peabody, Mass.; London: Hendrickson Publishers Marketing; British Library, 2010). [↑](#footnote-ref-27)
25. On a 13 inch laptop screen, even with the display options set to only show the image, I can still only see about three quarters of the whole parchment page. [↑](#footnote-ref-28)
26. The HTML that renders the singular image of the codex page is actually a collection of calls to an asp (active server page) script that cuts the image of the page into 200x200 pixel squares organized by coordinates. For example, one square of the image can be found at this URL (Uniform Resource Locator) - http://www.codexsinaiticus.org/handler/manuscriptImage.ashx?image=Q82\_7v\_B562\_p.jpg&x=0&y=0&z=0. The way this URL is constructed is a typical mechanism for passing parameters to a script or program stored on a server. In this instance, the script is the part of the URL that ends in .ashx. An ASHX file is a generic web handler file used with the ASP.NET framework, which is the primary framework used in the Codex Sinaiticus web interface. After the question mark, the URL has named variables that are passed to the “manuscriptImage.ashx” script. The first named variable is the file name of the digital image for the page requested by the user. The following three variables, named “x,” “y,” and “z,” are the coordinates for the particular square of the image that needs to be captured and loaded. A value of zero in all three coordinates designates the square that is the top left corner of the actual image, not including dark space. The image presented to the user as a single graphic is actually a collection of twenty 200 x 200 pixel clips of the full image. [↑](#footnote-ref-29)
27. Checking the different filename passed to the ASHX file in the HTML of the page when selecting the raking light image confirms that the two images are distinct files. [↑](#footnote-ref-30)
28. See the description of the digitization apparatus and process at http://www.codexsinaiticus.org/en/project/digitisation.aspx and note the simple description of the lighting options in the info bubble associated with the image block. [↑](#footnote-ref-31)
29. Some, like Nicholas Carr and Jeffrey Siker, have argued that the proliferation of data available in web or mobile interfaces erode the potential for concentrated or “deep” engagement with a text. In a video interview with VOA News in August of 2010, https://youtu.be/tXDGh8v-OhA, Carr discusses his book *The Shallows* and how the internet as a “distraction machine” is rotting human brains. Perhaps partly by continuing to over perform the interface characteristics of a codex, this web Sinaiticus interface provides an example of the possibility for connective layers of data in the ecosystem of the internet to offer an increasingly close and deep encounter with a textual tradition such as bible. Though critical of bibles on screens in church settings, Siker, *Liquid Scriptures*, 16, does point out that some internet spaces afford more depth of engagement than others, such that blogs and YouTube may be less governed by shallowness and distraction than Twitter and Facebook. [↑](#footnote-ref-32)
30. See http://dss.collections.imj.org.il/isaiah to participate in this interface of the Great Isaiah Scroll. [↑](#footnote-ref-33)
31. The technologies used to render these images of 1QIsaa actually do not even require reloading of the page when the user moves around in the roll, reinforcing the experience of a continuous roll. On the contrary, every change of page in the Codex Sinaiticus web interface requires a full page reload. [↑](#footnote-ref-34)
32. See the iBook pagination visualization as an example. [↑](#footnote-ref-35)
33. Peter Robinson, “The Making of the Codex Sinaiticus Electronic Book,” in Amy Myshrall et al., eds., *Codex Sinaiticus: New Perspectives on the Ancient Biblical Manuscript* (London: The British Library Publishing Division, 2015), 271. [↑](#footnote-ref-36)
34. Click on the small “i” icon in the top left corner of the transcription block on any page of the manuscript at http://www.codexsinaiticus.org/en/manuscript.aspx. [↑](#footnote-ref-37)
35. Robinson, “The Making of the Codex Sinaiticus Electronic Book,” 270-271. Despite Robinson’s hyperbolic assessment of this production, his detailed account of the technologies involved in the process of making the transcription and, most importantly, his encouragement toward more open and fluid developments of online scholarly editions are invaluable as guides toward the next generation of bible as interface. Here, Robinson treads very closely to the concerns raised by Johanna Drucker in her plea for humanities scholars to get more involved in developing the future of online scholarly editions through a more robust theorization of interface. See Drucker, “Humanities Approaches to Interface Theory,” for her encouragement toward online scholarly interfaces that afford proximity. [↑](#footnote-ref-38)
36. The transcription team followed the basic standards set by the Text Encoding Initiative (TEI) but modified as necessary. The editorial declaration section of the transcription XML itself reads, “The XML is based on the TEI P5 guidelines, although there are some innovations in order to represent the physical layout of each page. In particular, pb cb and lb elements are divided into corresponding opening and closing elements, with an additional margin element inside these elements containing marginal material.” The decision to use TEI standards where possible makes the XML for this transcription more useful for comparative work done with other manuscripts encoded using a similar standard. For more information on TEI standards, see http://www.tei-c.org/index.xml. [↑](#footnote-ref-39)
37. For a more detailed introduction to XML on a much simpler encoding set, see my discussion of the Digital Bible Library in the next chapter. [↑](#footnote-ref-40)
38. Those few with privileged access to the source code for the site, perhaps much like the limited number of scribes who could touch the manuscript, could alter or add to the site. Yet, unless there are revision control systems in place to monitor and track a history of all changes made to the site, any additional “hands” in this interface could entirely erase the work of those that preceded them. [↑](#footnote-ref-41)
39. https://hypothes.is/ [↑](#footnote-ref-42)
40. Robinson, “The Making of the Codex Sinaiticus Electronic Book,” 273. [↑](#footnote-ref-43)
41. Robinson, “The Making of the Codex Sinaiticus Electronic Book,” 274-275. [↑](#footnote-ref-44)
42. Robinson, “The Making of the Codex Sinaiticus Electronic Book,” 273. [↑](#footnote-ref-45)