



User's Manual  
Juxta 1.6 : 11 August 2011  
[www.juxtaoftware.org](http://www.juxtaoftware.org)

## What is Juxta?

Juxta is an open-source cross-platform tool for comparing and collating multiple witnesses to a single textual work. The software allows you to set any of the witnesses as the base text, to add or remove witness texts, to switch the base text at will, and to annotate Juxta-revealed comparisons and save the results.

Juxta presents several kinds of analytic visualizations. The most basic collation offers a split frame comparison of a base text with a witness text, along with a display of the digital images from which the base text is derived. Additionally, Juxta has several visualizations for the collation of multiple witnesses. Juxta can display a heat map of the textual variants that allows you to locate—at the level of any textual unit—all witness variations from the base text. You can also view the collation as a histogram, which displays the density of all variation from the base text and serves as a useful finding aid for variants in long documents. Finally, Juxta can output a lemmatized schedule (in HTML format) of the textual variants in any set of comparisons.

## Installing Juxta

Juxta is a Java-based application that can run on any modern personal computer. We have packaged it for Windows, Mac OSX, and UNIX operating systems. To obtain the Juxta installer, go to <http://www.juxtaoftware.org/download.html> and click on the link for

your operating system. Save the installer to your computer and then double-click its icon to run it. Simply follow the prompts from there and Juxta will be ready for use.

## System Requirements

Juxta requires Java 1.5 to run and has been tested on Windows XP and later, as well as Mac OS X 10.6.8. The Windows installer will optionally install Java for you if it isn't present and the Macintosh includes Java by default.

## Getting Started

The Juxta installation includes several sample collations, which can be accessed from the File menu. Select "File", then "Open Sample" (File → Open Sample) and then select a JXT file for the sample you wish to view. The three sample collations are:

**Damozel**—a collation of seven versions of the poem "The Blessed Damozel" by Dante Gabriel Rossetti. Demonstrates the use of Juxta XML files to associate images and milestones with text.

**Renaissance**—a collation of two versions of Walter Pater's *Studies in the History of the Renaissance*. Demonstrates the collation of prose texts.

**Whitman's Leaves of Grass**—a collation of three versions of Walt Whitman's "Leaves of Grass". The source TEI XML was contributed by the Walt Whitman Archive.

*The Display Window, General.* Opening a collation displays a list of witness documents on the left (in the Comparison Explorer panel) and on the right a transcription of one of the witness texts as the “base text” (at the beginning, it chooses the first of the listed witnesses). At the top is a menu with a set of standard editing functions for adding and removing witnesses, and for several other operations. Below this menu is a toolbar with a set of icons. Running the mouse over them displays the functions they perform. There is also an input box for entering words to search for in all the texts in the comparison set. See the section on searching below.

The upper panel at the right (Document Panel) displays a transcription of the base text in Collation View by default. The two buttons at the bottom of the Document Panel toggle between Collation View and Comparison View, which displays a side-by-side comparison of texts. The texts for comparison are chosen from two drop-down lists above the Document Panel. The text on the left will be treated as the base text. The lock icon between the drop-down lists (“on” by default) can be clicked to unlock the text transcriptions so they can be independently scrolled.

The lower right panel is an area for displaying additional information about the witness texts and collation. Just below this lower right panel are five buttons that allow you to control which information is displayed in the panel. When Juxta starts, “Source” is the default selection, displaying the source XML or plain text of the transcription currently chosen in the Document Panel. “Images” displays any digital images included in the Juxta XML file (this feature is not available for plain text or TEI files). By default, images are locked to their transcriptions in the Document Panel above, so that scrolling through the transcriptions will

call up page images in succession. Images may be unlocked from their transcriptions by clicking the lock button below the panel. Next to the lock button are two buttons for zooming the image view in and out. Next, “Notes” displays your annotations. The lock button at the lower right unlocks the notes display from the transcriptions. The trashcan button deletes the selected note. “Moves” displays all the moves you specify. Clicking on a move scrolls the documents to display the moved text. The trashcan button discards the selected move. (Please see the section below on collating passages that appear out of order.) “Search” displays the results of the last search operation. Clicking on a search item scrolls the texts in the Document Panel to show the item in context.

*Collating and Annotating Operations, General.* Clicking a witness text in the Comparison Explorer on the left will make it the base text. The box to the left of each witness text can be unchecked to remove it from the collation. The boxes to the right of each witness text visualize (in shades of blue) the global degree of difference between the base text and this witness, with degree of difference signaled by increase in the gradient color difference.

When the Document Panel is in Collation View, a “heat map” is superimposed (in blue) on the base text. Blue highlighting signals degrees of variance between the base text and the witnesses being compared. Clicking on any highlighted area in the heat map displays a list of variants in a box in the right margin. You can also click and drag the mouse to highlight a region and display all of the variants for the highlighted section. Clicking on the star in the pop-up box allows you to enter annotations for that difference.

You can create a new comparison set (File → New Comparison Set) and then add your own documents (Edit → Add Document). Documents must be in either a specific XML format – described later in this document – or a plain text format. Loading a document automatically collates it using the current collation settings.

When you are ready to publish your collation and annotations from Juxta, you can output a critical apparatus as an HTML document (File → Generate Critical Apparatus). You can also save your comparison set (File → Save or File → Save As) for later work or for sharing with others who use Juxta. These outputs preserve all annotations added in Juxta.

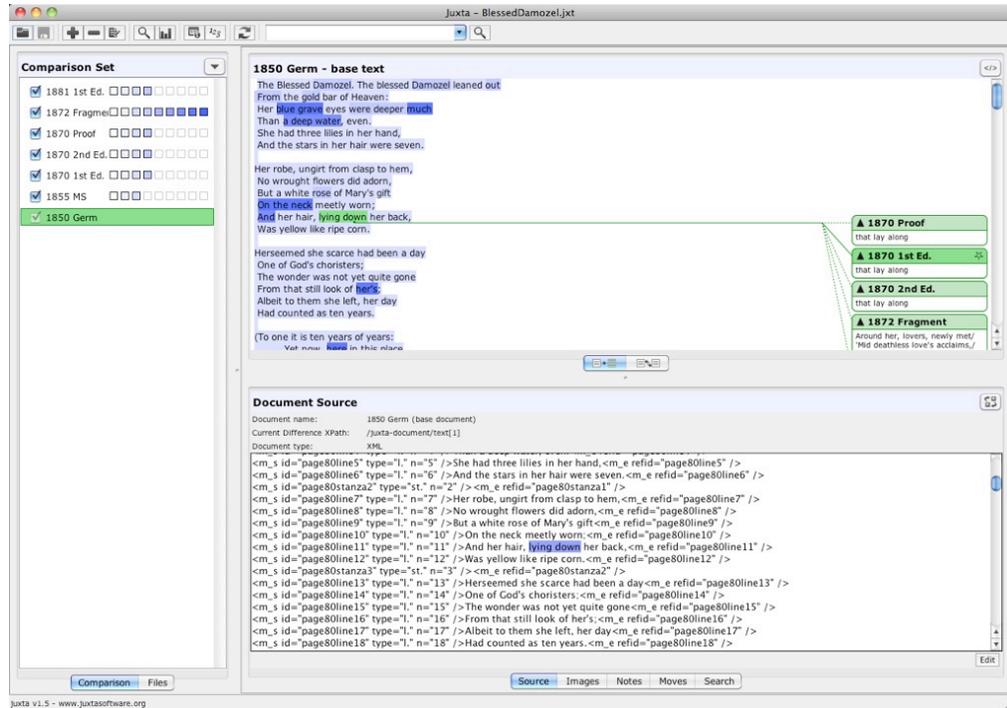
*Collating passages that appear out of order.* In the side-by-side difference view, indicate the moved passage by dragging the mouse over the passage in both the base and the witness texts. The move button (on the upper right, next to the selection of the witness text) will be enabled when passages on both sides have been selected. Click the move button and the move will be created. You will see an outline of the passages and a line connecting them. There is also an entry in the Moves panel for each move created. Clicking the entry brings the move into view.

*Searching in all text.* Juxta’s Search feature allows you to find a word or phrase in all the texts in the current collation set. Type the search terms you want in the input box that appears on the tool bar and press the enter key (or click the button to the right of the input box). The results are displayed in the Search panel, and all the matching terms are highlighted in the texts. Clicking on a search result in the Search panel causes it to scroll into view. The search works for whole words only, so if you search for “work”, for example, the term “working” will not be

found. If you search for more than one word, then it finds them in any order, as long as they appear close to each other in the text. For instance, searching for “question be” in Hamlet will return (among other results) “be, that is the question.”

# Juxta User Interface

The major functional areas of the Main Window are shown below. These panels can be resized by clicking and dragging the divider bars.



## Toolbar



The toolbar is a place to find the most commonly used functions in Juxta. From left to right, these functions are:

**Open Comparison Set** – Loads a comparison set from a previously saved .jxt file.

**Save Comparison Set** – Saves the current comparison set to a .jxt file.

**Add Document** – Imports a new document into the comparison set (see Add Document Dialog).

**Remove Document** – Removes the currently selected document from the comparison set.

**Edit Base Document Properties** – Opens a dialog for editing the document properties of the currently selected document (see Document Properties Dialog).

**View Histogram** – Opens the Collation Histogram (see Collation Histogram Dialog).

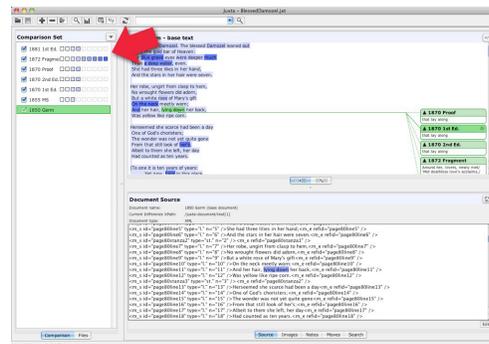
**Generate Critical Apparatus** – Generates a critical apparatus for the currently selected document (see Generate Critical Apparatus Dialog).

**Toggle Location Markers** – Toggles the location marker display on or off in the Document Panel. For plain text files, Juxta displays line numbers. Juxta XML files may be marked up with custom location markers (for example, numbering by page, paragraph, or stanza).

**Collate Documents** – Opens a dialog allowing you to change the collation filters. By default, Juxta ignores whitespace, punctuation, and case; you may change these filters for the open Comparison Set and recollate the witnesses. When a new document is added to the Comparison Set, it is automatically collated using your chosen filters.

**Search Text In Files** – Type in the input box and click the button to search for a term or terms in all documents in the comparison set. Note that you can see a list of recently searched-for terms by clicking the triangle just to the right of the input box. See “Searching in all text” above.

## Comparison Explorer



The Comparison Explorer displays all documents in the current comparison set. These documents are automatically collated against one another.

Documents can be added or removed from the list by using the Add Document and Remove Document buttons on the toolbar. You can modify the display name of a document by editing its “short name” field in the Document Properties Dialog.

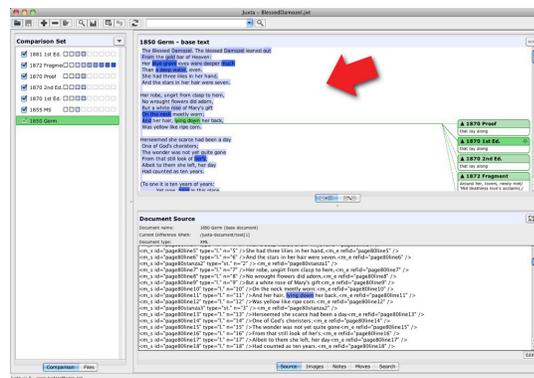
Documents can be sorted by date or alphabetically. The date used for sorting the witnesses is called the “Sort Date” and is set in the Document Properties Dialog.

The document highlighted in green is the current base document, from which comparisons are made. Each of the documents has a meter to the right indicating its degree of difference from the base document. Placing

the mouse pointer over a given document reveals this value expressed as a number.

To the left of the document name is a checkbox. Deselecting this checkbox temporarily excludes the document from the collation results. This exclusion is applied throughout the rest of Juxta's computations and outputs. For example, excluded documents do not appear in the critical apparatus output.

## Document Panel



The Document Panel can display the results of collating multiple documents or it can display a side-by-side comparison of two documents. To facilitate this, the Document Panel has two modes: Collation

View and Comparison View. These modes can be toggled with the buttons at the bottom of the panel.

Line numbering and other location markers can be summoned by clicking on the “Toggle Location Marks” button on the toolbar.

**Collation View** – When the Collation View is selected, Juxta displays a collation of all selected witnesses against the current base document. The current base document is the document highlighted in green in the Comparison Explorer to the left of the Document Panel.

The text is color coded to indicate the degree of variance evident at any particular area of the text. Lighter shades of blue indicate that fewer witnesses vary from the base text at this location. The darker the shade of blue, the more witnesses differ at this location.

Clicking on the text itself reveals all variants for a particular location. The variants appear in the right-hand margin of the text as shown below:

Her robe, ungirt from clasp to hem,  
No wrought flowers did adorn,  
But a white robe of Mary's gift  
For service meetly worn;  
And her hair lying down her back  
Was yellow like ripe corn.

Herseemed she scarce had been a day  
One of God's choristers;  
The wonder was not yet quite gone

▲ 1870 1st Ed. ☆  
rose

▲ 1870 2nd Ed. ☆  
rose

You can add critical annotations by clicking the grayed-out star that appears within the green witness label. This will activate an “Edit Note” dialog box. After you add text and click “OK” to save it, the note will appear in the Secondary Panel (when the “Notes” display is selected) and the star in the witness label will appear in bold ( **☆** ). Clicking the star or double-clicking the note in the Secondary Panel will open the “Edit Note” dialog again.

There are three types of differences reported by Juxta. They are marked with the following glyphs in the witness labels:

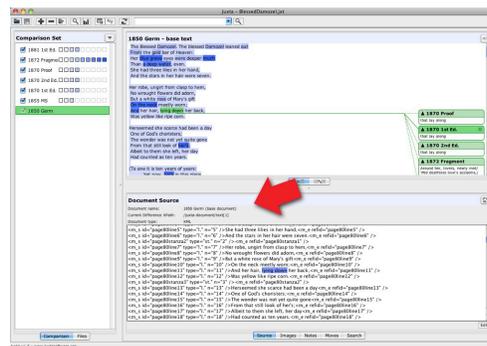
▲ — Indicates a difference between base and witness text at this location.

✚ — Indicates that there is text present at this location in the witness text where there is no such text present in the base text.

✖ — Indicates that there is text present in the base text that is not present at this location in the witness text.

**Comparison View** – The Comparison View allows side-by-side inspection of two texts. While the Collation View shows the status of the base text relative to all other texts in the collation, the Comparison View focuses on just two texts at a time. As you scroll through the comparison, the two texts are kept in step with one another. Line numbering and other markings can be summoned in this view by clicking the “Toggle Location Marks” button on the toolbar.

## Secondary Panel



The Secondary Panel houses supporting information relevant to the document or documents currently being displayed in the Document Panel. The Secondary Panel has five modes: Source,

Images, Notes, Moves, and Search. These modes can be selected by clicking the buttons at the bottom of the panel.

**Source** – The Source mode displays the source XML or plain text of the transcription currently chosen in the Document Panel. When you are in Source mode, an Edit button appears to the lower right of the Secondary Panel. Clicking the Edit button allows you to alter the chosen text and

save your altered version as a new witness. (The new witness will not include any choices of additions or deletions you may have made using the Edit Revisions feature in the Document Panel.)

**Images** – If an image is associated with the current base text, it will display in the Images mode. The image can be panned by clicking and dragging, and zoomed using the buttons to the lower right of the Secondary Panel. Images are associated with location markers or milestones in the process of importing a document in XML format (described below).

**Notes** – The Notes mode shows a table of your annotations to this comparison set. For each annotation, the following columns of information are displayed:

**Base Text** – The base text for the difference this note marks.

**Witness Text** – The witness text for the difference this note marks.

**Lemma** – The text heading that heads the list of variants.

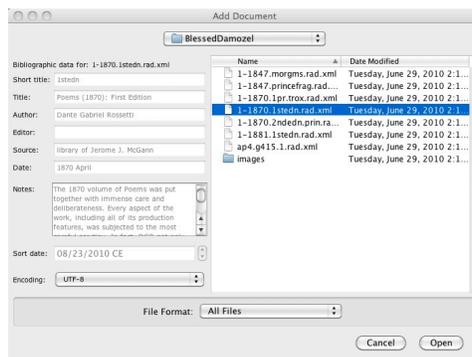
**Notes** – The text of the annotation itself.

The lock button at the lower right controls the tracking of the document display. When the lock is closed, clicking on an annotation in the Secondary Panel will make the text in the Document Panel jump to the relevant location. When the lock is open, clicking on an annotation in the Secondary Panel does not change the position of the text in the Document panel. The trashcan button in the lower right deletes the selected note or notes. Double-clicking on a note in the Secondary Panel opens the Edit Note dialog.

**Moves** – When you mark moved passages in the witness texts, a list of moves becomes available in the Moves mode of the Secondary Panel (see “Collating passages that appear out of order,” above.) Clicking on a move in the list makes the Document Panel display the witness texts in Comparison View with the moved passage brought into view on the left and highlighted in dark yellow on both sides. If the corresponding passage is not visible in the document on the right, scrolling the Document Panel up or down should bring it into view.

**Search** – The Search mode displays the results of your last search operation. Clicking on a search item scrolls the texts in the Document Panel to show the item in context, highlighted in dark yellow. By default, all of the search hits in the document are highlighted in medium yellow. A button to the lower right of the Search panel toggles this highlighting on and off.

## Add Document Dialog



The Add Document Dialog allows you to add a document to the comparison set. It can be summoned by clicking the Add Document button on the Main Window toolbar or by choosing “Add Document ...” from the Edit menu. Juxta can import documents either as plain text or as XML files. If plain text is selected, then the text is assumed by default to be UTF-8 encoded. Alternate text encodings can be selected from the encoding drop-down list at the

bottom of the dialog. If a Juxta XML document is selected, then the encoding is determined by reading specifications in the XML file. The bibliographic data for TEI and Juxta XML files can be previewed to the left of the file chooser. Selecting a document adds it to the collation and re-collates the comparison set to take into account this new addition.

## Document Properties Dialog

The Document Properties Dialog can be

summoned by clicking the Edit Base

Document Properties button on the toolbar

or by choosing “Edit Document Properties”

from the Edit menu. This dialog allows you

to view and update the bibliographic

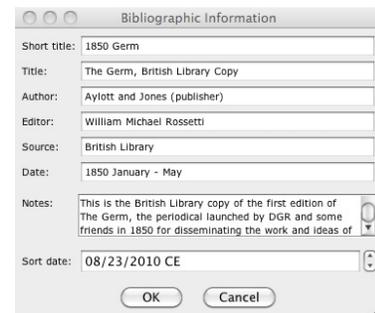
information for the currently selected

document. The short title identifies this document in the Comparison

Explorer and serves as the witness sigla for this document in an exported

critical apparatus. In fact, the entirety of the bibliographic information is

output as part of the critical apparatus.



## Edit Note Dialog

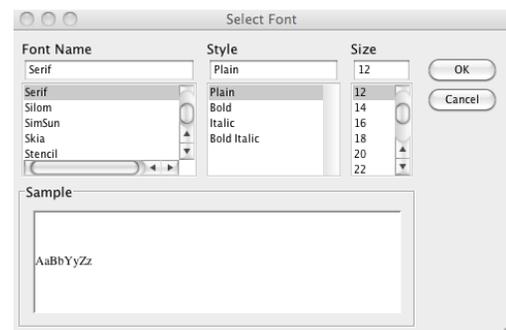


The Edit Note Dialog can be summoned by clicking on the annotation star in the witness label after clicking on a blue-shaded variant in Collation View (see Collation View above) or by double-clicking on an existing

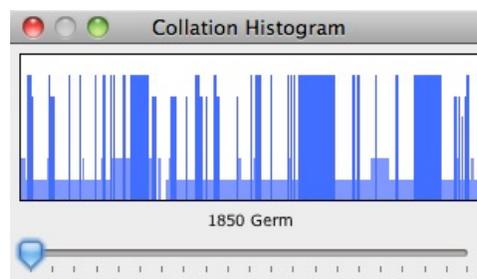
note in the Secondary Panel. This dialog allows you to view and update the currently selected note. When working with Juxta XML files, you have the option of checking the “Include Image” box, which adds a link to the base text’s image for this note in the critical apparatus. The image is obtained from the XML location marker that denotes the location of this difference.

## Select Font Dialog

The Select Font Dialog can be summoned by selecting “Change text font ...” from the View menu or by pressing Ctrl-T (or Apple-T on a Mac). This dialog allows you to control the display font for the text in the Document Panel.



## Collation Histogram Dialog



The Collation Histogram dialog can be summoned by clicking the View Histogram button on the toolbar or by choosing “Histogram Graph” from the View menu. This dialog displays a graph of the frequency of difference over the length of the currently selected document. The short name of the currently selected document is displayed below the graph. Clicking on an area of interest in the graph jumps the text in the

Document Panel to the relevant location and creates a green highlighted bar in the graph; the highlighted bar can be dragged from side to side on the graph to scroll the text through the Document Panel.

Below the graph is the Filter Strength Slider. This slider allows you to temporarily filter out minor differences in spelling and punctuation in order to reveal more substantive differences. This feature is especially useful in large documents with many minor changes.

## Collation Dialog

When documents are added to the comparison set, Juxta automatically collates them against all of the other documents in the set. The Collation Dialog is



useful when you wish to re-collate the comparison set with new filter settings. The following filters are available: ignore white space; ignore punctuation; and ignore case. This dialog can be summoned by clicking the Collate Documents button in the toolbar or by choosing “Collate ...” from the Collation menu.

## XML Parsing Templates

For each witness in a Comparison Set, you can fine tune how Juxta parses the XML representation of the witness to prepare it for collation. These choices are represented in what we call a “parsing template.” Parsing templates can be reused for an entire set of files, streamlining the

process of intaking new witnesses into a Comparison Set. Parsing templates can also be archived and reused in future Comparison Sets.

Parsing templates allow you to configure a number of different things about how Juxta represents a given witness. You can choose to “EXCLUDE” (ignore) a particular element type, “INCLUDE” (opposite of “EXCLUDE”), or “MAKE NOTABLE.” “MAKE NOTABLE” notes the type of tag that contains the text and marks the text as changed when the element type changes. This could be used to note changes from “b” to “i” tags, for example. You can also specify whether or not a newline (aka a line break) should be added after the element. For example, if parsing an XHTML document, one might wish to make “br” and “p” tags have line breaks after them. You can also specify a “Target XPath”. This is an XPath to the XML element which encompasses the text that is to be collated.

### Importing an XML File

When you add a file to a comparison set that is in XML format, Juxta will either match it with an existing parsing template or prompt you to create a new parsing template. If one or more parsing templates match the schema of the newly added file, the Select Parse Template Dialog is displayed. You may then select the appropriate template. If there are no parsing templates that match this schema, the “XML Template Editor” is displayed. This will allow you to create a new template for this XML file.

### Modifying Templates

You can modify the existing parsing templates in a comparison set by selecting Edit → Edit XML Parsing Templates or by clicking on the “Edit Templates...” button in the Select Parse Template Dialog.

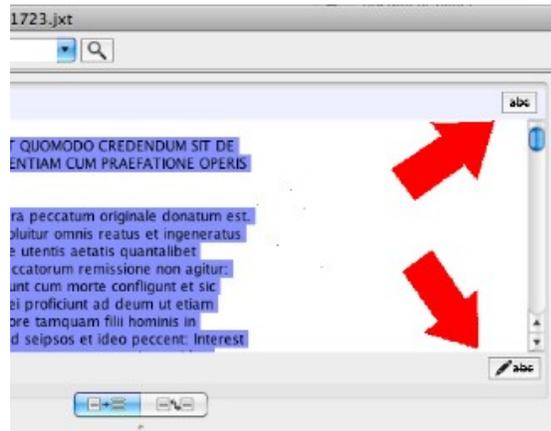
## Edit Templates Dialog

This dialog allows you to create new templates, edit existing ones, and delete templates. Clicking on “New” or “Edit” brings up the XML Template Editor Dialog. There are two groups of parsing templates: “Current Templates” and “Archived Templates”. You can toggle between these groups using the drop-down field at the top of the dialog. The Current Templates are available in the currently active comparison set. These templates can be selected in the Select Parse Template Dialog to parse a given witness. The Archive Templates do not affect the current comparison set. The archived templates are your own personal library of templates that can be reused from project to project. An archived template may be restored to be used in the current Comparison Set. Likewise, the current templates can be archived for future use. To archive a template from the Current Templates, select it and then click the “Archive” button. To restore a template from the archive, select it and then click on the “Restore” button.

## Select Parse Template Dialog

This dialog allows you to select an existing template with which to process the current witness. See *Juxta XML Parsing Templates* for more information.

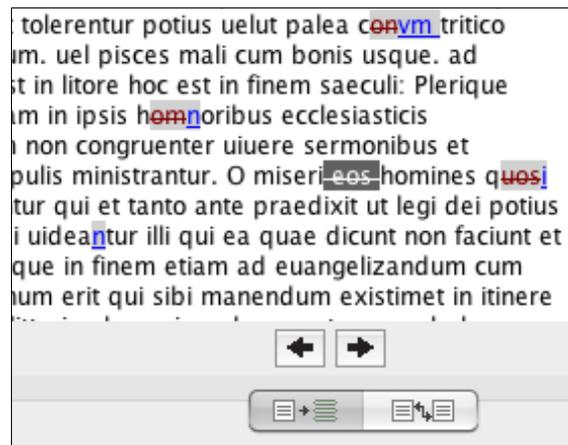
## Revision Site Controls



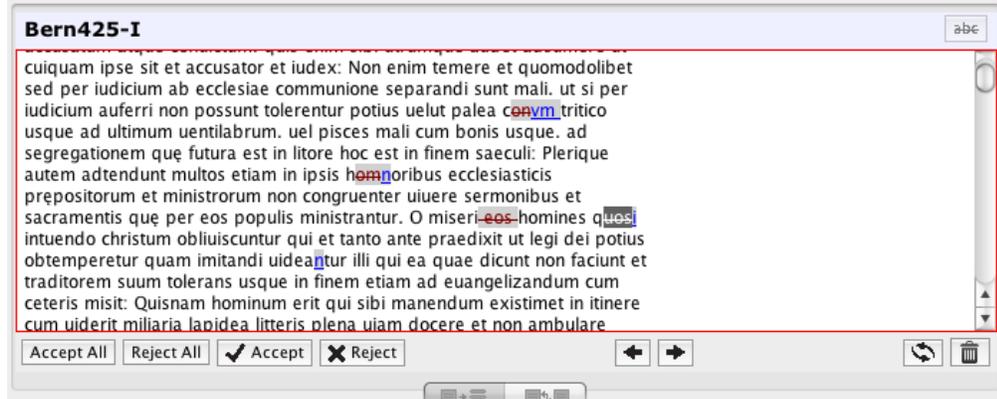
When you open an XML file that has addition and deletion spans marked (by TEI <add> and <del> tags), two additional buttons will appear near the Document Panel. At the upper right of the panel is the “Toggle revisions view”

button. Clicking it once reveals the deletions and additions highlighted in gray. Deletions are marked by a strikethrough line in dark red text; additions are indicated in blue underlined text.

Using the right and left arrows that appear beneath the Document Panel, you can quickly jump from the current revision site (indicated in dark gray) to the next or previous one. Clicking the “Toggle revisions view” button again will return the Document Panel to Collation View (the heat map).



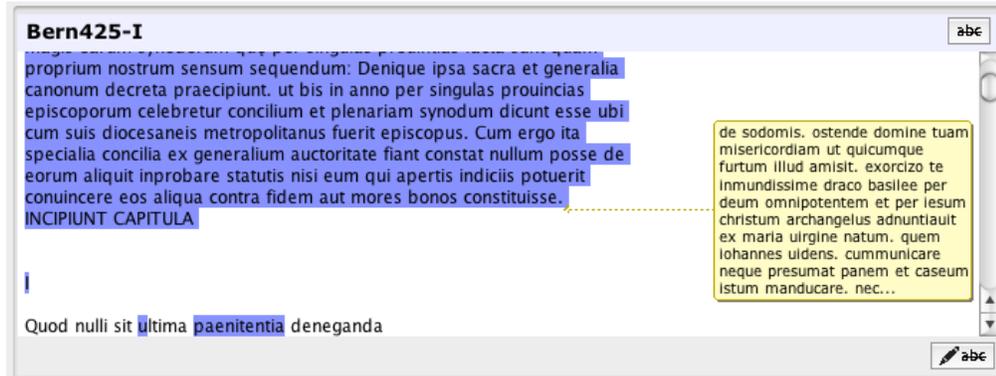
By default, Juxta ignores addition and deletion spans in collating texts. If you wish to incorporate additions and deletions in your collation, you can click the “Edit Revisions” button at the lower right of the Document Panel. This turns the Document Panel into an editing window with a red border. Several control buttons appear below the Document Panel.



The right and left arrow buttons allow you to navigate through all the additions and deletions in the document. When an addition or deletion is selected (highlighted in dark gray), clicking “accept” will incorporate the revision into your collation. Clicking “reject” will maintain the default behavior of Juxta, excluding the revision from collation. For example, Juxta by default will collate ~~con~~<sup>cvm</sup> as “con”. If you accept both the deletion of ~~con~~ and the addition of <sup>cvm</sup>, Juxta will collate the word as “cvm”. You can also click buttons to “Accept All” or “Reject All” revisions. After making your choices, click the “Save changes and recollate” button (two arrows making a circle) at the lower right of the Document Panel to incorporate the revisions into your collation. Alternatively, you may click the “Discard changes” (trashcan) button to leave the text as you found it.

## XML <note> Tag Support

As of version 1.6, Juxta supports display of text enclosed in <note> tags in XML documents. The text is not included in the document collation, but is displayed in the right margin of the Display Panel.



## The Perils of “Plain Text”

There is one thing that every scholar manipulating and preparing digital texts should know about “plain text” files: *there is no such thing as a plain text file*. All text files, whether they explicitly specify it or not, are encoded when they are saved to disk. Possible encodings include “utf-8” and “cp-1252” formats.

This fact can cause problems as the file moves from one computer and operating system to another. This is because different computer operating systems make differing assumptions as to how “plain text” or “ascii” files are encoded. For example, files prepared on Windows machines with applications like Notepad can generate code in the CP-1252 format, which is a Microsoft Windows™ specific encoding. If these files are then shared across the network to a Mac computer and opened as “plain text” they may be corrupted on the screen.

We recommend using a cross-platform compatible encoding format such as UTF-8. When Juxta loads plain text files, it assumes that they are encoded in this format. Most text editing programs will allow you to specify the encoding type of a plain text file.

## Credits

Juxta was developed by ARP (Applied Research in Patacriticism) at the University of Virginia in Charlottesville, VA. Development of Juxta was made possible by a grant from the Mellon Foundation. Juxta is currently maintained by the NINES group at the University of Virginia.