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Traherne Digital Collator v2.0.5 – user instructions

Introduction

The Traherne Digital Collator is software for identifying variants between different copies of the same printed text. It is designed for comparing copies which are substantially similar in terms of content and type-setting, but where there may be some differences. This includes collating variants between different states of the same edition. Although specifically designed for identifying variants in letterpress, it can also be used to detect variant states of intaglio prints, relief woodcuts, and even photographs.

The Traherne Digital Collator compares digital images of two copies of a text and produces visualisations to help users spot variants. It is a digital equivalent of mechanical and optical methods of collation. It improves the speed and accuracy of collation by automatically aligning images so that they can be easily compared, providing different visualisations so that users can choose the most helpful ones, and relieving researchers from the physical strains of optical collation. It makes it easier to collect evidence (such as changes in the position of type indicating resetting) which visual techniques can struggle to identify. It is a conservation-friendly method of collation because no special handling or physical treatment of books is needed.

The Traherne Digital Collator can be used either in the library alongside the copies being collated, or remotely. Because it uses digital images, collation can if necessary be conducted or repeated without physical access to a copy. Moreover, results and visualisations can be saved and shared with others.

Using the collator

Images

- The Traherne Digital Collator compares images of different copies of the same text, so the first stage in using the software is to obtain a set of images of each of the copies to be compared.
- The software works best with the JPEG or PNG files, although TIFF files are also supported. If working with PDFs, the first step is to convert them to image files. This can be done using tools such as GIMP (https://www.gimp.org/) or the Preview application in MacOS.
- Images should be stored in separate folders for each copy. The images in each folder should be named so that, when ordered alphanumerically, they are in page order. When you start collating, the software will work through the images in this order.
- For early modern books, images will be stored sequentially if they are named using the following protocol: [library]_[shelfmark]_1A01r, [library]_[shelfmark]_1A01v, [library]_[shelfmark]_1A02r... This protocol is not, however, obligatory and other systems may work better in different circumstances.
- If you are producing your own images, remember that many cameras and associated software make it possible to automatically save images to a specified folder and to name images as they are taken in a form specified by the user. Making use of this functionality to implement a

protocol like that described above can substantially reduce the time needed to photograph a copy and file the images.

- If producing images, treat the volume just as you would if you were reading it. No special handling is needed, and nothing should be done which risks damaging a book. In particular, there is no need to force books open. Whilst it is best to take photographs of flat pages from directly above if this can be done easily, the software is specifically designed for use with images where this isn't possible (because, for example, the page is curved or images have to be taken at an angle).

Starting collation

- Instructions for installing the software can be found on the download page: http://www.robots.ox.ac.uk/~vgg/software/traherne/
- To start using the collator, open the Collator software and click "Load Base".
- Find the folder in which the images of the base copy (the reference copy against which copies are being collated) are stored. Select the images showing all the pages to be collated and press "Open". It is most efficient to load all the pages you want to collate in a single session in one go.
- Click "Load Comp".
- Find the folder in which the images of the comparison copy which is to be collated are stored. Select the set of images showing the pages to be collated and press "Open".
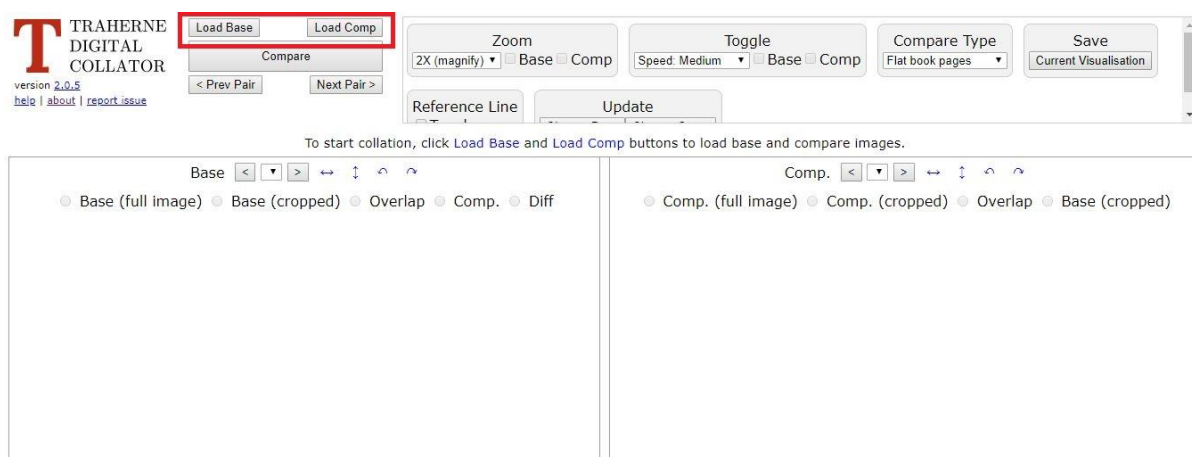
The "Load Base" and "Load Comp" buttons

- Select the part of the base copy to be collated by left clicking, holding down the left mouse button, and drawing a box over the portion of the page to be collated. Whole pages can be collated at once when books are small. For larger books, it can be easier to collate them in portions (e.g. half a page at a time). Experiment to find the most useful approach.
- Redraw the box if you want to change it.
- When the area you want to collate has been selected, click "Compare".

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An area selected for comparison, with the "Compare" button highlighted.

- Wait whilst the software automatically matches the images.
- When the images have been processed, two images will appear side by side. On the left is the area of the base copy which you selected. On the right is the equivalent area of the comparison copy, which the software has identified.

Display after comparison has been completed

- The software is able to correct for page curvature when comparing images. However this function is by default switched off because it takes longer to process images when it is enabled. To switch it on, open the drop down menu under "Compare Type". Choose "Curved book pages". Then click "Compare" and wait for the images to be processed. To turn it off, open the drop down menu and choose "Flat book pages".

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The drop-down menu for switching the curvature correction feature on and off

- Once loaded, images can be flipped horizontally, flipped vertically, rotated anticlockwise, and rotated clockwise by clicking on the blue arrows at the top of the pane displaying each image. Flipping can be used to examine offsets.
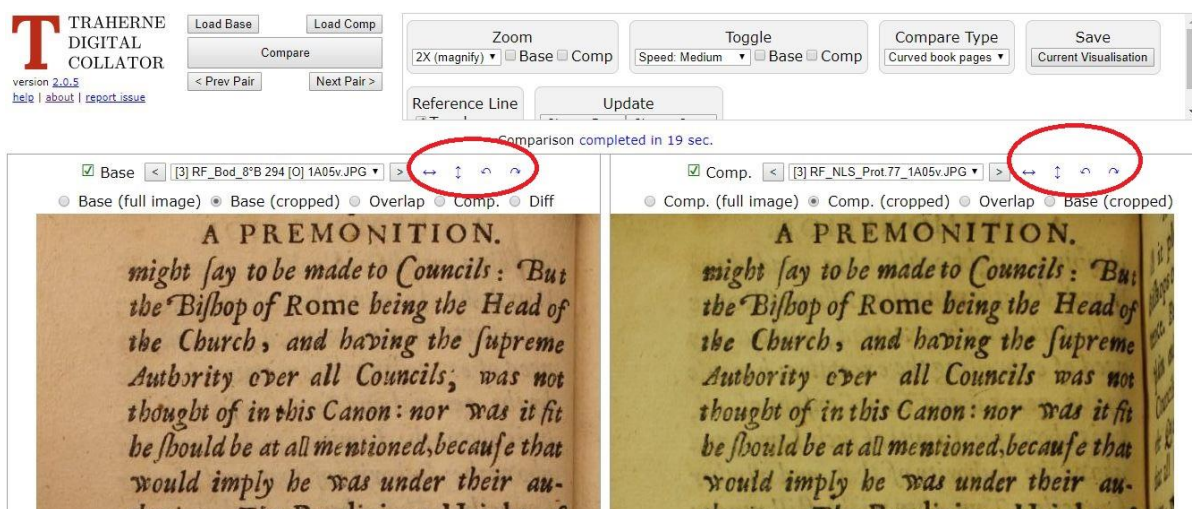
The image flipping and rotating tools
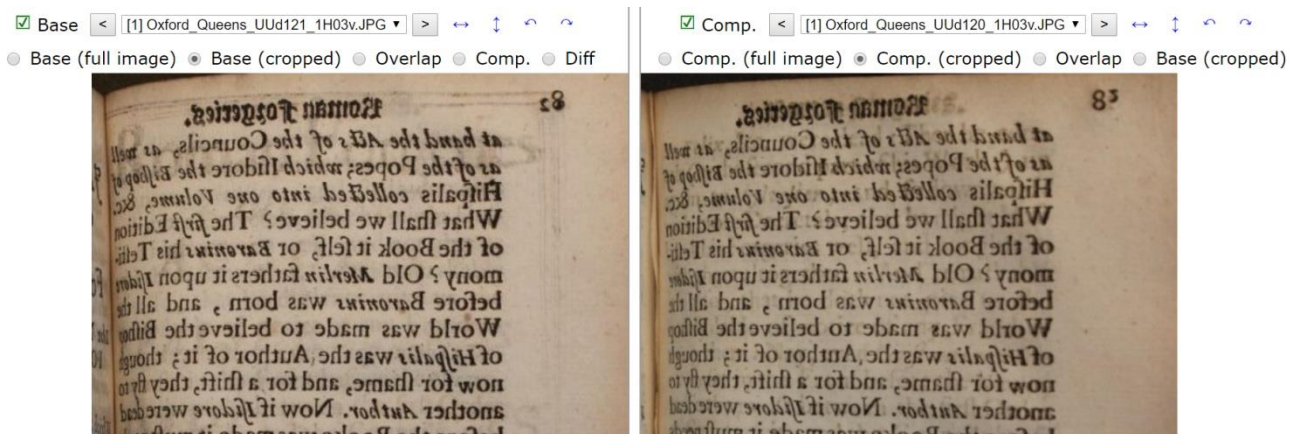
*Base copy (left hand panel) flipped to examine offset*

Identifying variants

- Directly above each image are a row of buttons for selecting different visualisations. Choose from amongst these to find visualisations which are most helpful for identifying variants. The options are:
    - "Base (full image)" shows the original image of the base copy with a rectangle indicating the area selected for collation;

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- o "Base (cropped)" shows just the part of the image of the base copy selected for comparison;
- o "Overlap" show semi-transparent images of both copies laid on top of each other;
- o "Comp" shows the area of the comparison copy selected for collation;
- o "Diff" shows the two copies laid on top of each other with the base copy in blue and the comparison copy in red.
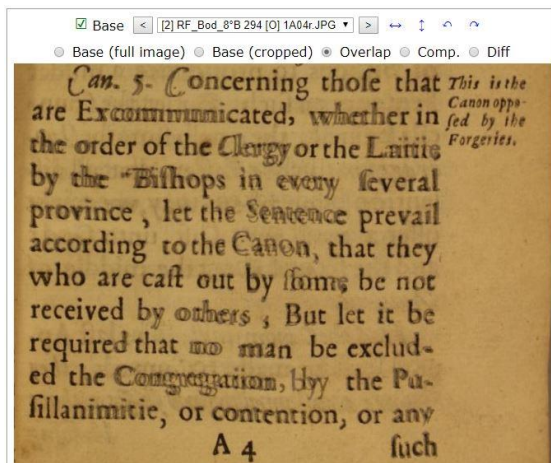
"Overlap" visualisation
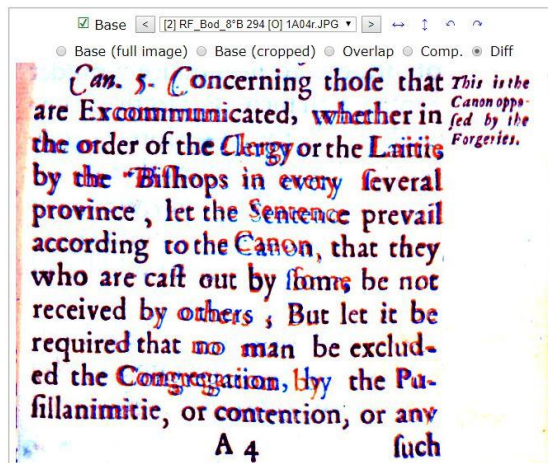
"Diff" visualisation

- Use the toggle function to alternate between different images. First use the buttons to choose the pair of images you wish to toggle between (with one image in the left pane, and the other in the right). Then under "Toggle" at the top of the window select either "Base" or "Comp". "Base" will show the two images toggling in the left pane, "Comp." will show the two images toggling in the right pane. For example, selecting "Base (cropped)" in the left page, and "Comp (cropped" in the right pane and then choosing "Comp" under the "Toggle" option will show the two copies alternating in the right hand pane with the base copy held still in the left hand pane. This setting can make it easy to spot variants and to compare them to the reading in the base copy.


The controls for the toggle function

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- To alter the speed at which the images toggle open the drop down menu under "Toggle" and choose the appropriate setting. To stop toggling, click again to uncheck the boxes beside "Base" and "Comp".

<u>Magnifying areas and adding reference lines</u>

- To magnify part of either image, under "Zoom" at the top of the window click on the boxes by either "Base" or "Comp" (or both). When these boxes are checked, moving the cursor over the left image ("Base") or right image ("Comp") will magnify the part of the image pointed to. To freeze the zoom region, click the left mouse button when zoom is active; to unfreeze, click the left mouse button again. To switch off, uncheck the box. To adjust the degree of magnification, open the drop-down menu under "Zoom".
- When comparing images, a horizontal reference line can be added across both images to help compare the relative positions of textual and other details. To add a horizontal line across both images, check the box labelled "Reference Line Toggle" at the top of the page. To move the line, left click in the white space between the two images at the point where you want the line to appear. To switch it off, uncheck the box.
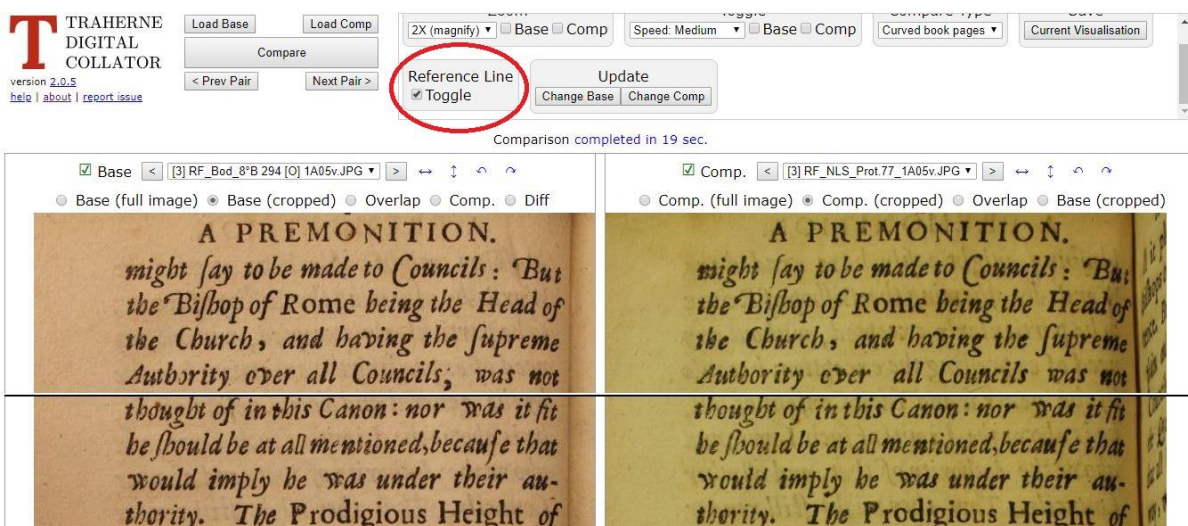
Reference line switched on, with control highlighted

<u>Saving results</u>

- Click the button labelled "Current Visualisation" under "Save" to save copies of the images currently being displayed by the software. It will create a single image showing the image on the left next to the image on the right. Both will be labelled with their file names.

<u>Comparing another part of the same page</u>

- To choose another area of the same pair of images to compare, choose "Base (full image)" in the left pane.
- Draw a new rectangle around the new area to be compared.
- Click compare and wait for the software to process the images as before.

<u>Comparing new images</u>

- If a set of multiple images was loaded for collation (and the images of both copies have been saved in order), click "Next Pair" to move on to the next page. Click "Prev Pair" to move back a

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    page. Clicking these buttons tells the software to move forwards and backwards (in alphanumerical order) through the images you loaded of the base and comparison copies.

- To select other images from the sets you loaded from the base and comparison copies, use the dropdown menus and forward and backwards buttons at the top of each image pane.
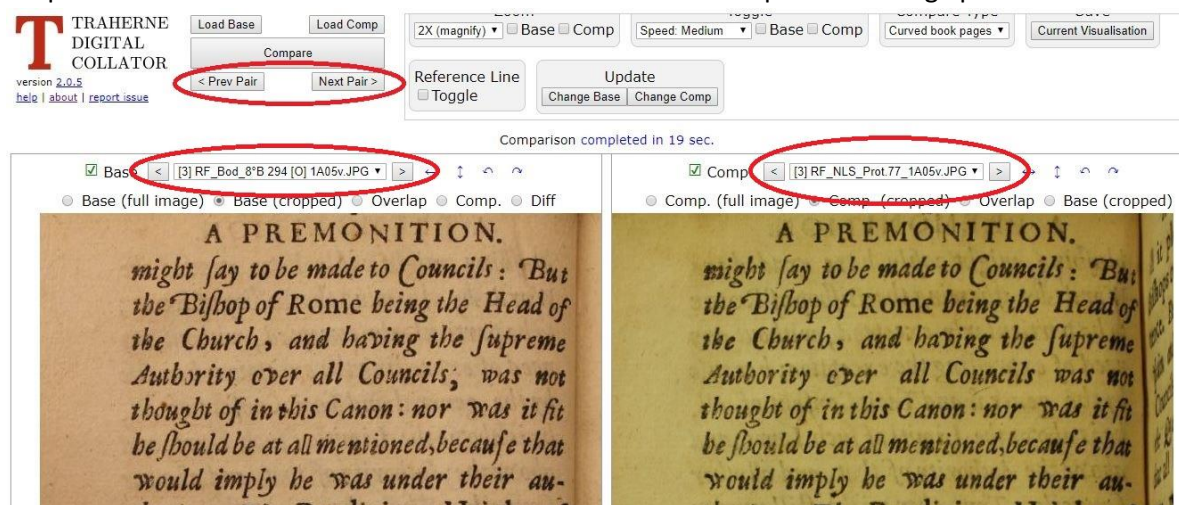
Commands for changing images

- To select completely new images, click "Change Base" and/or "Change Comp" under "Update".
- When new images are loaded, proceed as before.

Quitting the Traherne Digital Collator

Close the browser window or tab containing the Traherne Digital Collator. On a Mac, then Force-Quit the Traherne launcher shown in your Dock. In Windows, close the separate window called 'Traherne Digital Collator'.

Feedback

We welcome your feedback on the Traherne Digital Collator software and user instructions, but regret that we are not able to provide technical support. Please send any bibliographical comments or suggestions for additional features to the general editor of the Oxford Traherne: julia.smith@ell.ox.ac.uk. Bugs should be posted on the software's Gitlab repository, at https://gitlab.com/vgg/imcomp.

Citation

If you use the Traherne Digital Collator in published work, please consider citing its source as follows: Dutta, A., Chung, J. S., and Zissermann, A., "Traherne Digital Collator" (2018), http://www.robots.ox.ac.uk/~vgg/software/traherne.