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Figures

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Figures

Illustrations are an integral part of many books, put problems with illustrations frequently delay the progress of books into production, and ultimately their publication date.

It is therefore important to start thinking and preparing your illustrations for submission early during writing, so that they are ready to go when you submit your final typescript. This document sets out the key points to consider when sourcing and creating illustrations.

If you have a large number of images in your book or have any unusual requirements or uncertainties about the instructions in this guide, please flag this now. We can give extra guidance and check sample images to avoid any unnecessary extra work or delays when you are ready to submit your typescript.

Resolution and image size

When you submit your final typescript, you will need to supply your figures as separate electronic files (see Submitting your figures below), unless you are writing in LaTeX. It is essential that your figures are of the best possible quality/resolution so that they do not appear blurred or pixelated in your book. We cannot improve the resolution of images; we can only use them at the supplied resolution.

What is resolution?

Resolution is measured in dots per inch (dpi) or pixels per inch (ppi). The two are roughly equivalent; dpi refers to resolution once printed (i.e. how many dots a printer will print in one inch) and ppi is a measure of resolution on a screen (i.e. how many pixels there are in an inch of computer screen). The more pixels (and therefore detail) an image contains, the crisper it will be.

Because it is measured by area, resolution depends on the size of the figure. If an image has a resolution of 400dpi at a size of 1cm x 1cm, the resolution will drop to 100dpi if the image is increased to a size of 2cm x 2cm.

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For this reason, you'll need to bear in mind the final size of printing when you are checking the resolution of your images.

Image sizing

Alongside your illustrations, you will be submitting an illustration checklist where you will be asked to specify the size that you'd like each image to appear in the book. (This is not applicable for authors writing in LaTeX as you will size the figures in your code).

The available sizes are as shown in this diagram:
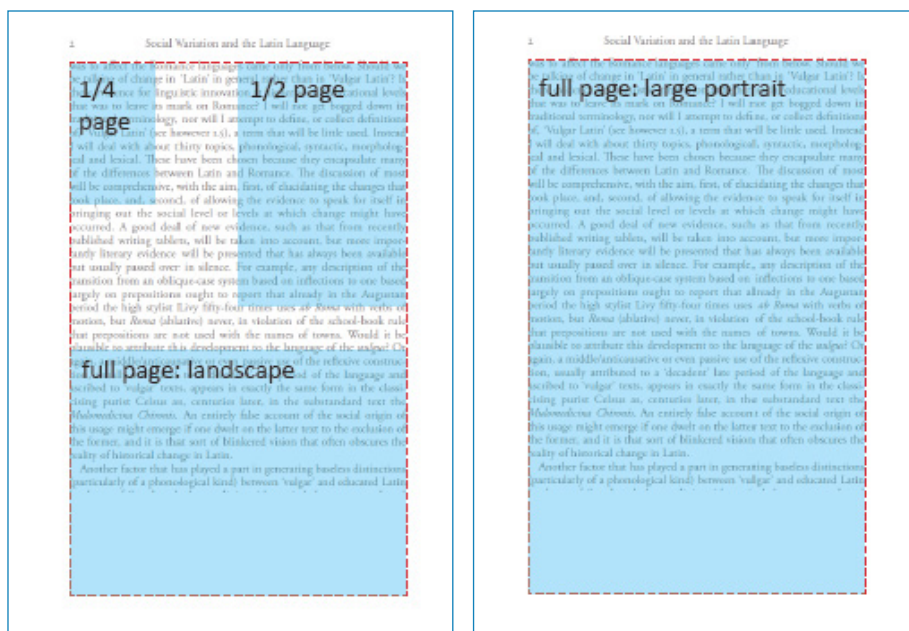
- Quarter page is suitable for small square or portrait images, and can be used when two or more images need to sit together.
- Half page is suitable for square or portrait images that need to be larger, but saves space and avoids over-sizing.

- Full page is suitable for landscape images and portrait images that need to be large, for example if they show a lot of detail that is referred to in the text.

If you need to check resolution particularly precisely, you can ask your Content Manager or Editorial assistant about the 'trim size' of your book, which will allow you calculate the actual sizes that your images will appear. Otherwise, you can use these guidelines to give you an approximate size for each image.

How to check resolution

Here are some instructions on how to check image resolution in some common computer programmes. If you need help with this, contact your Content Manager or Editorial Assistant.

Using Photoshop

Go to Image > Resize > Image Size and you will see the resolution at the image's current size. If you type the required resolution, e.g. '300', into the resolution field, the width and height fields should automatically adjust to show what size the image will be at the required resolution.

Using Paint (PCs)

Go to the dropdown menu in the top left corner and select 'Properties'. You will see the dpi at the current size (the size may be shown in pixels, but you can change to inches or centimetres in the 'Units' section)
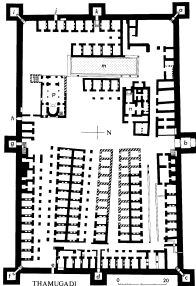
Unlike Photoshop, the dpi won't automatically adjust when you edit the width and height. However, you can work out what the width would be at 300dpi if you multiply the current width by the current dpi and divide by 300. For example, if an image is 40cm wide at 72dpi, it will be 9.6cm wide at 300dpi (40 x 72/300 = 9.6).

Using Preview (Macs)

Go to Tools > Adjust Size > Image Dimensions and you will see the resolution at the current size. If you type the required resolution, e.g. '300', into the resolution field, the width and height fields should automatically adjust to show what size the image will be at the required resolution.

Requirements for different types of illustration

To maximise the quality of each type of illustration in your book, please find your image type in the table below and bear in the mind the relevant requirements.

Image type (with example)	Accepted format(s)	Minimum resolution at final printing size
Photographs/halftones	**Halftone** .tiff (preferred), .jpeg, .pdf	300dpi
	Hard copy (originals or transparencies) Please notify your Cambridge contact if you will be supplying hard copies.	N/A
Line drawings	**Vector (preferred)** .eps, .ai, .svg	N/A
	Line (preferred) .tiff	1200dpi
	Halftone .tiff, .jpeg, .pdf	600dpi
Graphs	**Vector** .eps, .ai, .svg	N/A
	Line .tiff, .pdf	1200dpi
	PowerPoint/Excel file .ppt, .pptx, .xls, .xlsx	N/A

Maps	**Vector (preferred)** .eps, .ai, .svg	N/A
	Line (only applicable if black and white / non-tonal) .tiff	1200dpi
	Halftone .tiff, .jpeg, .pdf	300dpi
	Hard copy Only applicable if maps are to be re-drawn; discuss with your Cambridge contact.	N/A
Music examples	For more information on how to deal with music examples, please refer to the separate music reference guide, which can be provided by your Cambridge contact.	
Tables	For the purposes of our production process, editable tables are not treated as 'illustrations' – they should be supplied in situ in the final typescript and are prepared by our typesetters along with the rest of the text. However, please remember to number your tables according to instructions from your Content Manager or Editorial Assistant. Un-editable tables should be treated as images and submitted separately.	

Vector files

If you are supplying vector files which contain text, e.g. graph labels, you'll need to make sure that the labels are readable when we or the typesetters open the file. Please use one of the following options:

• Use one of the base-14 fonts. This is a list of standard fonts available on all computers:

  • Times or Times New Roman – 4 versions*

  • Helvetica or Arial – 4 versions*

  • Courier – 4 versions*

  • Symbol

  • Zapf Dingbats

*The versions are regular, bold, italic and bold italic of each font.

• Convert the text in your figures to outlines. This changes the text to vectors, so that it can be read on any computer without the font installed.

Unsuitable formats

The following formats are generally not suitable:

• .png

• .gif

• .bmp

• .pct

• Images pasted into Word or PowerPoint (the original images should be supplied)

If you do have images in these formats, we still might be able to use your files. Please speak to your Cambridge contact as soon as possible to that they can provide a suggested course of action.

Where to find high resolution images

Most libraries, archives and picture agencies are able to provide illustrations in high-resolution format.

Scanned images

• It is always better to supply the original artwork rather than scan from a printed copy, where possible.

• If you are providing scanned copies of an original image, make sure they are scanned to a final resolution of at least 300dpi at the size they are to be reproduced in the book (see above for guidance on Image sizing).

• A high resolution scan of a low resolution original will not improve the quality in any way.

If you are taking photographs with a digital camera

• If you are taking photographs for your book, ensure that your camera is set

to its maximum quality setting, usually described in megapixels, e.g. 8m megapixels

Colour

Your book will not include colour unless it is specifically stated in your contract, or it has otherwise been agreed with your Press editor.

Increments in greyscale figures

If your book is in black and white, it is best to use increments of 15-20% or above when using different shades to highlight areas in a greyscale figure. Any increments less than this may be hard to differentiate on the printed page. Patterns can be used if insufficient shades are available. Let your Cambridge contact know if you need help with this.

Third-party materials

For information about using third-party materials, including figures, within your work, please refer to the separate guidance on acquiring IP rights in third-party materials.

Submitting your figures

As covered in the briefing emails that you'll receive before submission, there are some important pointers to follow while writing and then submitting your final typescript and figures:

- All figures should be supplied as separate electronic files in suitable file formats and at the correct level of resolution (see above).

- You will need to complete and submit an illustrations checklist with details of each figure, available from your Editorial Assistant or Content Manager.

- Check all of your figures are present before submitting.

- All figures must be explicitly cited in the text ('In Figure X', not 'In the following figure') and in numerical order.

- If you have any suggestions for your figures – in terms of layout, sizing, etc – please let us know via the illustration checklist so that we can take this into

account early on.

- (Not applicable for authors writing in LaTex) You should insert figure placement instructions at the relevant points in the typescript to indicate where figures should be placed.

- Figures should be numbered decimally by chapter (e.g. 1.1, 1.2, 2.1). If you are providing electronic files please ensure that they are named clearly, with the figure number, and that these figure numbers align with those in the illustration checklist and the figure placement instructions in the typescript.

- Figures should be called out explicitly in the text of the manuscript, e.g. 'in Figure X', not 'in the following figure'.

- It is best to provide your figures in the same size or larger than you expect them to appear in the printed book (and at the resolutions given above). This allows for any resizing that may occur when your book is typeset. If you supply figures smaller in size than they will appear in the finished book, they may lose some clarify and detail when enlarged, or we may not be able to enlarge them. See guidelines above on Image sizing.

- If a figure needs to be cropped in any way, please mark this up clearly on an electronic copy of the figure. We may resize figures according to the design of the book. However, we cannot make adjustments to the content or quality of the illustrations.

Subject-specific instructions

Notes on maps

- If you are supplying rough versions of maps so that they can be redrawn, please ensure that the rough version is as clear as possible. Be sure to include a legend if one is needed.

- Please also provide a typed document with a list of all names to be included on the map. This is essential if the final map is to include more or fewer items than the rough or if the rough has been drawn by hand.

- Please also provide a brief indicating elements you wish to be included, such as rivers, roads, relief etc., as well as any elements included in your rough that you do not wish to be included in the completed map.

- Once the map has been redrawn, it will be sent to you for approval. Due to practical constraints, only essential corrections to the map (e.g. typographical errors and factual errors) will be permitted.

Note on equations

- If you are writing in Word and your script contains equations, please ensure that you use MathType Equation Editor to create the equations rather than Word Equation Editor. Equations created in Word Equation Editor will not make it through our XML normalisation process.

Note on music examples

- If you are including music examples in your book, please refer to the detailed Cambridge Music Guide, which will be provided by your Editorial Assistant or Content Manager.

Notes