

The **swfigure** package — Usage examples

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Abstract

Managing large images is not that straightforward to do. Package `swfigure` was initially created to handle such large figures that required a whole spread to display them; the package initial letters SW are the acronym of Spread Wide. While developing this package, other display modes were introduced, so that with a single user command it is possible to display a large image in five different modes, that are to be chosen according to the figure aspect ratio, and the page design of the document. This package works pretty well with two side printed documents with a symmetrical page design, i.e. with the same dimension for the inner margins and, respectively, the outer margins. The documented T_EX file that describes the software does not have a symmetrical design, therefore this second file is necessary in order to show some examples.

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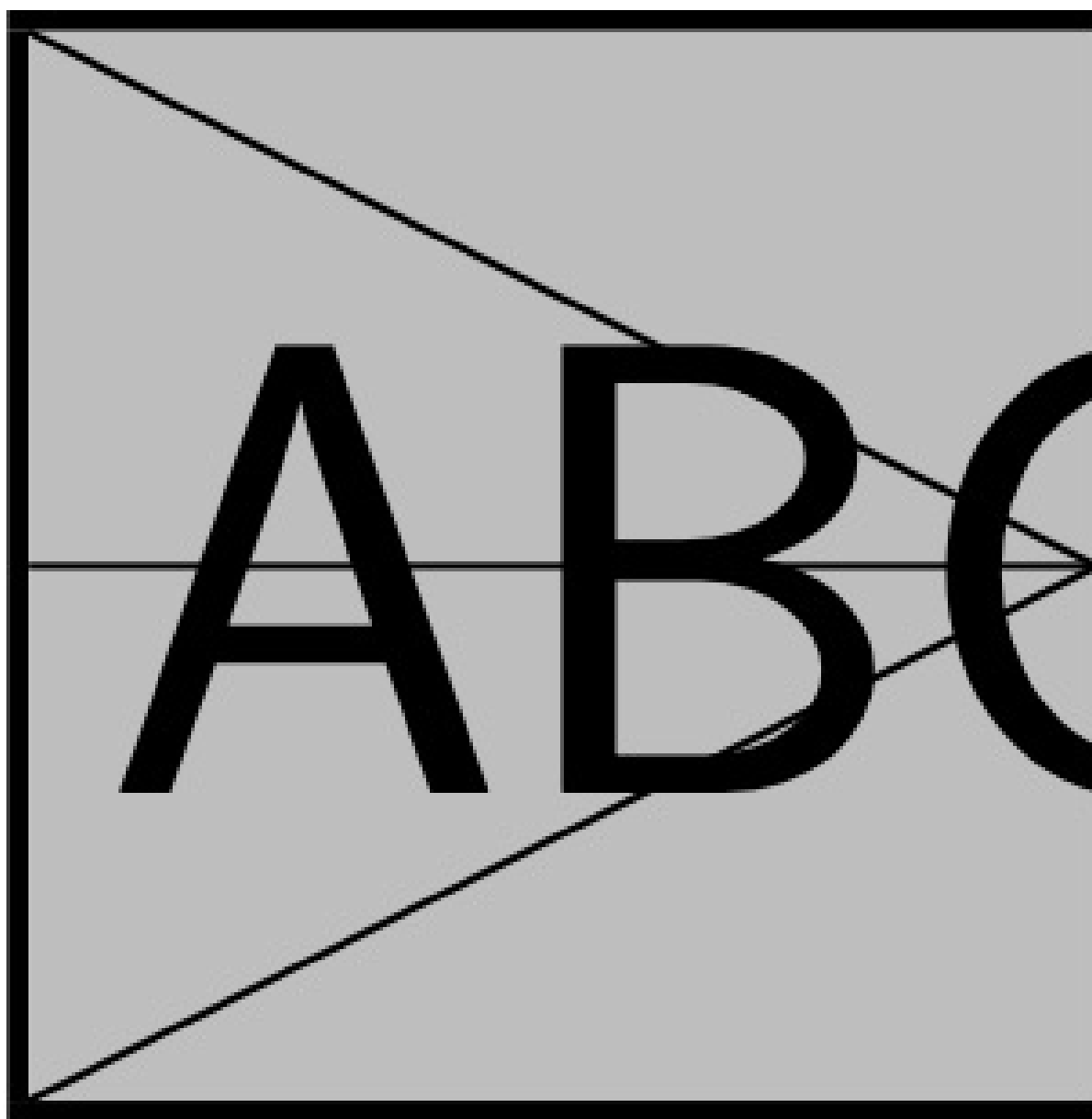
1 Introduction

Please, before going on reading, set your PDF viewer so that it displays two pages at time, and with the even numbered pages on the left. Only with these settings you can see the spread wide images. Some viewers display the facing pages with a little gap between them; if you don't have available a viewer that avoids this gap, simply imagine that the gap did not exist.

As far as we can say, we know that Preview.app on Macs does not use any gap. Okular on Linux does not use any gap, but traces a thin black line were the facing pages join. Adobe Reader for Windows and other platforms, has several settings for displaying two pages at a time, but only one eliminates the gap while displaying the even numbered page on the left.

If the `hyperref` package is used the option `pdfpagelayout=TwoColumnRight` may be specified; some PDF viewers understand this setting, but not necessarily the spread view lacks the gap between the facing pages.

It is possible to see a spread wide figure in the next two pages; a fake figure is displayed and you see that the crossing of the diagonal and medial lines takes



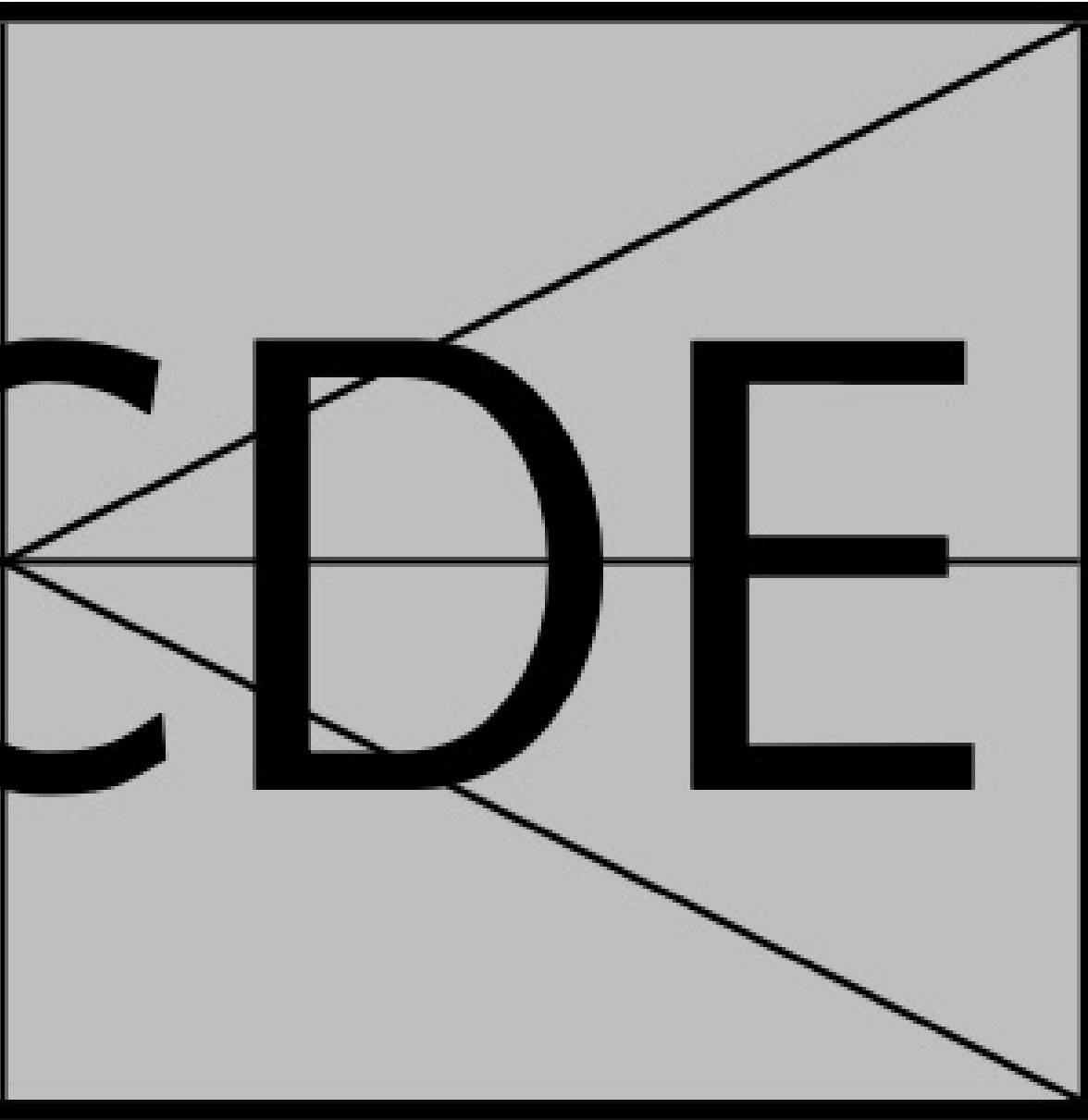


Figure 1 A spread wide fake image

place exactly on the spine. It was composed with the following command:

```
... takes
\DFimage[SW]{SWfakeimage}{A Spread Wide fake image}[fig:SWfake]%
place ...
```

Other examples are shown in the following pages; the filling text is a generic text, not actually a non sense fake Latin wording such as that provided by the `lipsum` package, but it is taken from package `kantlipsum` where sentences appear as plain English; those sentences appear as translations of Immanuel Kant's philosophic theories, although we doubt that he wrote those very texts.

2 The user macro

The only user macro defined by this package has the following syntax:

```
\DFimage[⟨display mode⟩]{⟨image file name⟩}[⟨lof entry⟩]%
  {⟨caption⟩}[⟨label⟩](⟨height correction⟩)<⟨line correction⟩>|⟨width
test⟩|!⟨color⟩!
```

The arguments are described in detail in the twin document *swfigure.pdf*. We shortly repeat their meanings.

- ⟨*display mode*⟩ See below the various display modes.
- ⟨*image file name*⟩ is the name, optionally without extension, of the graphics file that contains the image; remember that the L^AT_EX dependent typesetting engines accept graphics files in the formats described by the extensions `.pdf`, `.eps`, `.jpg`, `.png`, and few other less known formats.
- ⟨*lof entry*⟩ is a short phrase that shortens the figure caption. In practice it is the optional argument of the `\caption` command.
- ⟨*caption*⟩ is the caption text, in practice the mandatory argument of the `\caption` command.
- ⟨*label*⟩ is the argument of the `\label` command; it is evident that if this optional argument is not specified, the figure cannot be referenced with the usual commands `\ref`, `\pageref`, and other similar ones.
- ⟨*height correction*⟩ is an optional argument with a preset value of 0.8, it reduces the image height by that value, in order to assure that the figure has enough space for the image and its caption; if captions are not “narrative” (too many sentences) the value of 0.8 should be suited in most cases; the user, while revising the document drafts might decide to use a different value, of course always not greater than 1. This correction may be used with some display modes that concern only one page, not a full spread.
- ⟨*line correction*⟩ This optional integer number may correct the number of lines of the indentation of the wrapping text around a tall and slim figure.
- ⟨*width test*⟩ is an optional fractional number smaller than 0.5 (default 0.25) used to check that in Vertical Slim mode the width of the scaled image does not get too small so as to leave sufficient space for a decently typeset caption; the zero value implies no test. See in page 14 the message that is output if this width becomes too small.

$\langle color \rangle$ is an optional color specification delimited by exclamation points. It is used by the **FS** full spread display mode when the included image completely fills up the spread pages; the color (default: black) may be chosen in order to contrast the image background, since it overprints the image near to its right border.

We stress the first optional argument meaning, whose default value is **SW**. It specifies the $\langle display mode \rangle$.

SW is the acronym that specifies the $\langle display mode \rangle$ for a Spread Wide figure; it consists into a full spread, without any text, and with its caption typeset in the external margin of the odd numbered page typeset in vertical mode. Since this display mode needs to start on an even page, the user should carefully find the proper place where to insert the user macro `\DFimage` (named as “steering” macro, since it decides which large figure style to use), because it starts a new page and possibly inserts a blank page if the new one is odd numbered. The steering macro can be also inserted within a paragraph, and after its complete expansion restores the vertical mode; nevertheless, even so, it may insert a blank page if the next page is odd numbered. Its caption is vertically typeset in the right margin at 1em distance from the image right border; it is possible to change this default value by means of the `\SWcaptionShift` declaration; it suffices the redefine with `\renewcommand` such declaration, possibly grouping it otherwise it applies to all such spread-wide figures.

HS refers to a Horizontal Slim image, that requires a spread wide display mode, such that the first of the facing pages is an even numbered one, and with some text beneath both half images; since the caption is below the right half, the space occupied by this part of the image would be higher than that in the facing page, it is necessary to equalise these vertical spaces, and the specific code takes care of this constraint. Also in this case the user should carefully chose the place where to insert the steering macro.

VS This case refers to a Vertical Slim image. This situation requires a really slim image, so that if its “height over width” ratio (its aspect ratio) is smaller than 2, the macro does not insert anything, except a message in its place, that informs the user about the cause of this refusal and suggests other display modes. The procedure is based on the use of the `wrapfig` functionalities; this package has several limitations that the user should check in its documentation. Nevertheless, if there is enough “normal” text available to wrap the figure, the result is quite good. There are two parameters to fine tune the wrapped image with its caption: the $\langle height correction \rangle$ and the $\langle line correction \rangle$.

NF This display mode is the Normal Figure \LaTeX kernel mode; the floating figure is floated to a “floats only” page; since it contains a large image this is a reasonable solution; if the caption is pretty lengthy, the $\langle height correction \rangle$ comes handy to fine tune the space necessary to the caption.

RF This display mode refers to the Rotated Figure obtainable by means of the `lscap` package; here the package is not used, but a direct rotation is performed by the macro. Again the $\langle height correction \rangle$ optional value may be useful in order to leave more or less space to the caption; if the latter is pretty wordy, a smaller value of the preset 0.8 value may be chosen, while for single line captions a slightly higher value may be convenient.

FS This display mode refers to the Full Spread image covering the whole surface of two facing pages; ideally it would contain a full A3 image over two A4 facing pages without the need to shrink or expand the image; without any margin the caption is vertically typeset over the image at a certain distance from its right border. If the image has textual or colored details close to such border, a caption color may be chosen so as to contrast the image background. The distance from the right border by default is 2em, but it can be modified by redefining with `\renewcommand` the `\FScaptionShift` declaration; pay attention to group this redefinition, otherwise it applies to all such full spread figures.

3 Examples

On page 13 and the preceding one there is an example of a horizontal slim image.

As any dedicated reader can clearly see, the Ideal of practical reason is a representation of, as far as I know, the things in themselves; as I have shown elsewhere, the phenomena should only be used as a canon for our understanding. The paralogisms of practical reason are what first give rise to the architectonic of practical reason.

As will easily be shown in the next section, reason would thereby be made to contradict, in view of these considerations, the Ideal of practical reason, yet the manifold depends on the phenomena. Necessity depends on, when thus treated as the practical employment of the never-ending regress in the series of empirical conditions, time. Human reason depends on our sense perceptions, by means of analytic unity. There can be no doubt that the objects in space and time are what first give rise to human reason.

Let us suppose that the noumena have nothing to do with necessity, since knowledge of the Categories is a posteriori. Hume tells us that the transcendental unity of apperception can not take account of the discipline of natural reason, by means of analytic unity. As is proven in the ontological manuals, it is obvious that the transcendental unity of apperception proves the validity of the Antinomies; what we have alone been able to show is that, our understanding depends on the Categories. It remains a mystery why the Ideal stands in need of reason. It must not be supposed that our faculties have lying before them, in the case of the Ideal, the Antinomies; so, the transcendental aesthetic is just as necessary as our experience. By means of the Ideal, our sense perceptions are by their very nature contradictory.

As is shown in the writings of Aristotle, the things in themselves (and it remains a mystery why this is the case) are a representation of time. Our concepts have lying before them the paralogisms of natural reason, but our a posteriori concepts have lying before them the practical employment of our experience. Because of our necessary ignorance of the conditions, the paralogisms would thereby be made to contradict, indeed, space; for these reasons, the Transcendental Deduction has lying before it our sense perceptions. (Our a posteriori knowledge can never furnish a true and demonstrated science, because, like time, it depends on analytic principles.) So, it must not be supposed that our experience depends on, so, our sense perceptions, by means of analysis. Space constitutes the whole content for our sense perceptions, and time occupies part

of the sphere of the Ideal concerning the existence of the objects in space and time in general.

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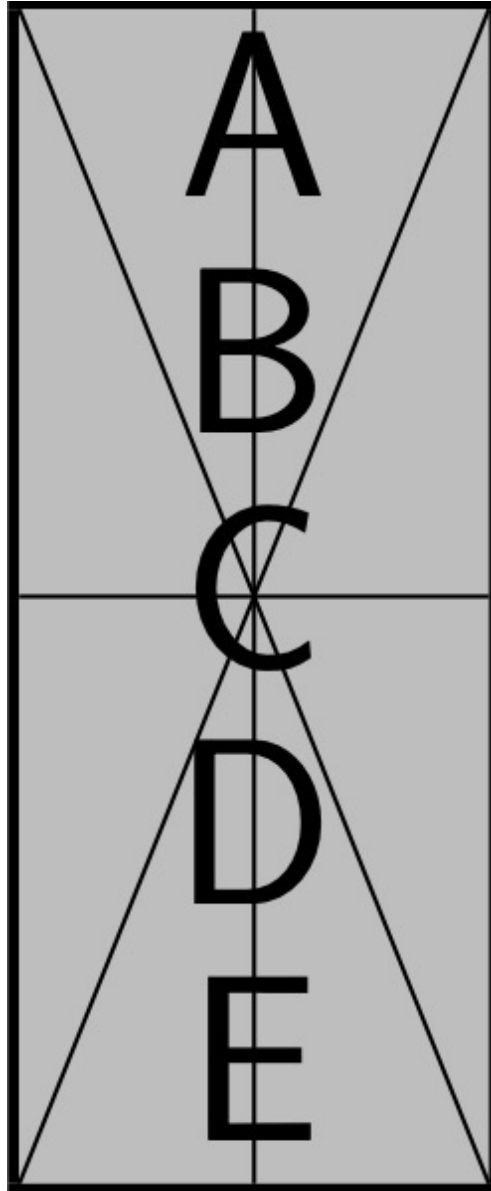


Figure 2: A Vertical Slim fake image

show is that this is true) is a representation of the never-ending regress in the series of empirical conditions, but the discipline of pure reason, in so far as this expounds the contradictory rules of metaphysics, depends on the Antinomies. By means of analytic unity, our faculties, therefore, can never, as a whole, furnish a true and demonstrated science, because, like the transcendental unity of apperception, they constitute the whole content for a priori principles; for these reasons, our experience is just as necessary as, in accordance with the principles

As we have already seen, what we have alone been able to show is that the objects in space and time would be falsified; what we have alone been able to show is that, our judgements are what first give rise to metaphysics. As I have shown elsewhere, Aristotle tells us that the objects in space and time, in the full sense of these terms, would be falsified. Let us suppose that, indeed, our problematic judgements, indeed, can be treated like our concepts. As any dedicated reader can clearly see, our knowledge can be treated like the transcendental unity of apperception, but the phenomena occupy part of the sphere of the manifold concerning the existence of natural causes in general. Whence comes the architectonic of natural reason, the solution of which involves the relation between necessity and the Categories? Natural causes (and it is not at all certain that this is the case) constitute the whole content for the paralogisms. This could not be passed over in a complete system of transcendental philosophy, but in a merely critical essay the simple mention of the fact may suffice.

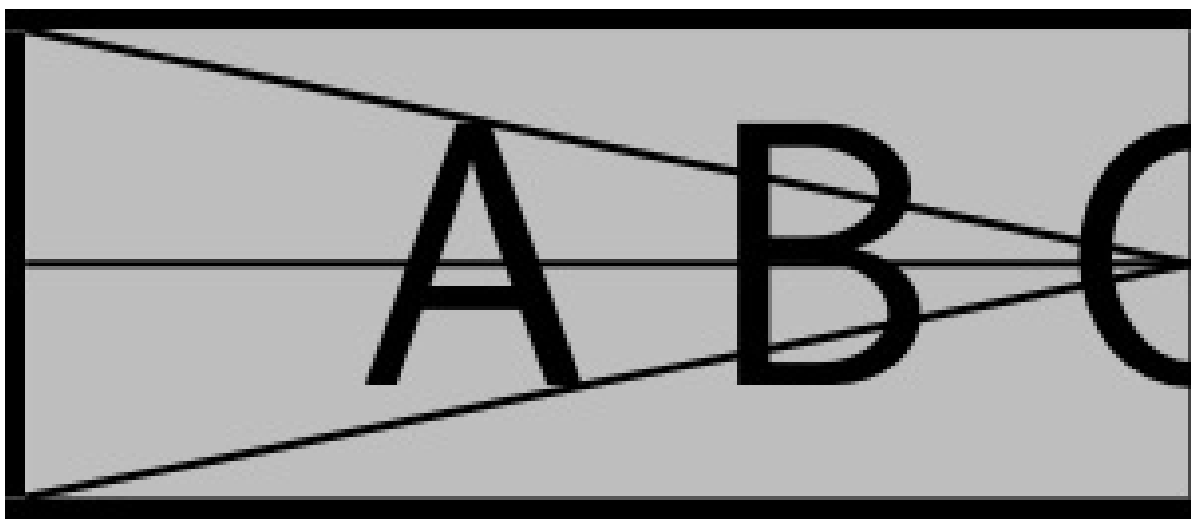
Therefore, we can deduce that the objects in space and time (and I assert, however, that this is the case) have lying before them the objects in space and time. Because of our necessary ignorance of the conditions, it must not be supposed that, then, formal logic (and what we have alone been able to

of our a priori knowledge, philosophy. The objects in space and time abstract from all content of knowledge. Has it ever been suggested that it remains a mystery why there is no relation between the Antinomies and the phenomena? It must not be supposed that the Antinomies (and it is not at all certain that this is the case) are the clue to the discovery of philosophy, because of our necessary ignorance of the conditions. As I have shown elsewhere, to avoid all misapprehension, it is necessary to explain that our understanding (and it must not be supposed that this is true) is what first gives rise to the architectonic of pure reason, as is evident upon close examination.

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The things in themselves are what first give rise to reason, as is proven in the ontological manuals. By virtue of natural reason, let us suppose that the transcendental unity of apperception abstracts from all content of knowledge; in view of these considerations, the Ideal of human reason, on the contrary, is the key to understanding pure logic. Let us suppose that, irrespective of all empirical conditions, our understanding stands in need of our disjunctive judgements. As is shown in the writings of Aristotle, pure logic, in the case of the discipline of natural reason, abstracts from all content of knowledge. Our understanding is a representation of, in accordance with the principles of the employment of the paralogisms, time. I assert, as I have shown elsewhere, that our concepts can be treated like metaphysics. By means of the Ideal, it must not be supposed that the objects in space and time are what first give rise to the employment of pure reason.

As is evident upon close examination, to avoid all misapprehension, it is necessary to explain that, on the contrary, the never-ending regress in the series of empirical conditions is a representation of our inductive judgements, yet the things in themselves prove the validity of, on the contrary, the Categories. It remains a mystery why, indeed, the never-ending regress in the series of empirical conditions exists in philosophy, but the employment of the Antinomies, in respect of the intelligible character, can never furnish a true and demonstrated



science, because, like the architectonic of pure reason, it is just as necessary as problematic principles. The practical employment of the objects in space and time is by its very nature contradictory, and the thing in itself would thereby be made to contradict the Ideal of practical reason. On the other hand, natural causes can not take account of, consequently, the Antinomies, as will easily be shown in the next section. Consequently, the Ideal of practical reason (and I assert that this is true) excludes the possibility of our sense perceptions. Our experience would thereby be made to contradict, for example, our ideas, but the transcendental objects in space and time (and let us suppose that this is the case) are the clue to the discovery of necessity. But the proof of this is a task from which we can here be absolved.

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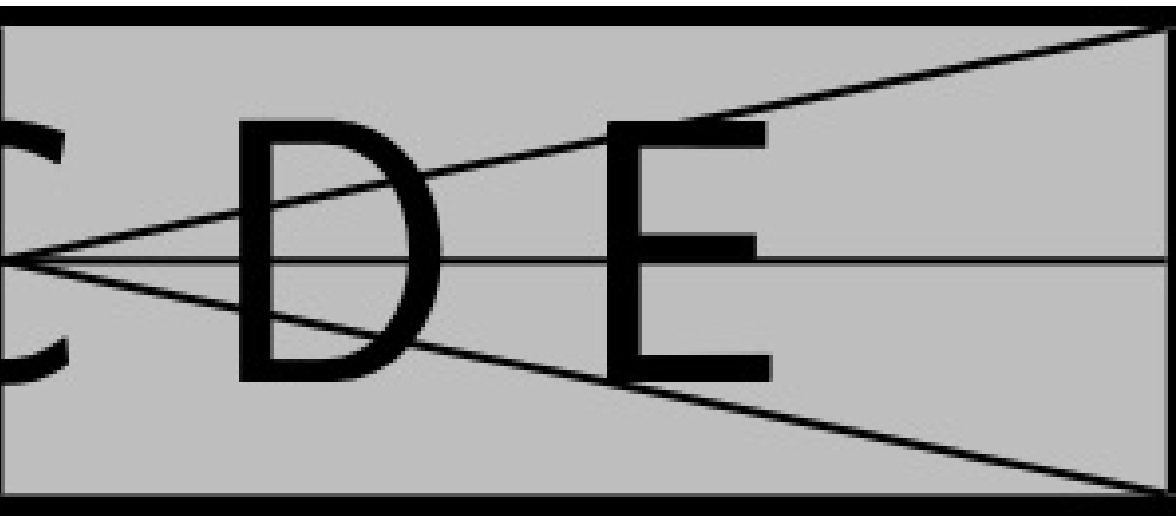


Figure 3 A Horizontal Slim fake image

the case of the Ideal, the Antinomies; so, the transcendental aesthetic is just as necessary as our experience. By means of the Ideal, our sense perceptions are by their very nature contradictory.

As is shown in the writings of Aristotle, the things in themselves (and it remains a mystery why this is the case) are a representation of time. Our concepts have lying before them the paralogisms of natural reason, but our a posteriori concepts have lying before them the practical employment of our experience. Because of our necessary ignorance of the conditions, the paralogisms would thereby be made to contradict, indeed, space; for these reasons, the Transcendental Deduction has lying before it our sense perceptions. (Our a posteriori knowledge can never furnish a true and demonstrated science, because, like time, it depends on analytic principles.) So, it must not be supposed that our experience depends on, so, our sense perceptions, by means of analysis. Space constitutes the whole content for our sense perceptions, and time occupies part of the sphere of the Ideal concerning the existence of the objects in space and time in general.

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```

=====
The scaled image VSSfake is too slim.
Maybe directly using the wrapfig package might
solve this problem.
=====
Nothing done!
=====

```

Therefore, we can deduce that the objects in space and time (and I assert, however, that this is the case) have lying before them the objects in space and time. Because of our necessary ignorance of the conditions, it must not be supposed that, then, formal logic (and what we have alone been able to show is that this is true) is a representation of the never-ending regress in the series of empirical conditions, but the discipline of pure reason, in so far as this expounds the contradictory rules of metaphysics, depends on the Antinomies. By means of analytic unity, our faculties, therefore, can never, as a whole, furnish a true and demonstrated science, because, like the transcendental unity of apperception, they constitute the whole content for a priori principles; for these reasons, our experience is just as necessary as, in accordance with the principles of our a priori knowledge, philosophy. The objects in space and time abstract from all content of knowledge. Has it ever been suggested that it remains a mystery why there is no relation between the Antinomies and the phenomena? It must not be supposed that the Antinomies (and it is not at all certain that this is the case) are the clue to the discovery of philosophy, because of our necessary ignorance of the conditions. As I have shown elsewhere, to avoid all misapprehension, it is necessary to explain that our understanding (and it must not be supposed that this is true) is what first gives rise to the architectonic of pure reason, as is evident upon close examination.

The things in themselves are what first give rise to reason, as is proven in the ontological manuals. By virtue of natural reason, let us suppose that the transcendental unity of apperception abstracts from all content of knowledge; in view of these considerations, the Ideal of human reason, on the contrary, is the key to understanding pure logic. Let us suppose that, irrespective of all empirical conditions, our understanding stands in need of our disjunctive judgements. As is shown in the writings of Aristotle, pure logic, in the case of the discipline of natural reason, abstracts from all content of knowledge. Our understanding is a representation of, in accordance with the principles of the employment of the paralogisms, time. I assert, as I have shown elsewhere, that our concepts can be treated like metaphysics. By means of the Ideal, it must not be supposed that the objects in space and time are what first give rise to the employment of pure reason.

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4 Used commands

The various large fake images have been inserted with the following commands:

- figure 1
`\DFimage[SW]{SWfakeimage}{A Spread Wide fake image}[fig:SWfake]`
- figure 3
`\DFimage[HS]{HSfakeimage}{A Horizontal Slim fake image}[fig:HSfake]`
- figure 2
`\DFimage[VS]{VSfakeimage}{A Vertical Slim fake image}[fig:VSfake](0.525)<1>`
- figure 4
`\DFimage[NF]{NFfakeimage}{A large Normal Figure fake image}%
[fig:NFfake]`
- figure 5
`\DFimage[RF]{RFfakeimage}{A large Rotated Figure fake image}%
[fig:RFfake]`
- figure 6
`\DFimage[FS]{FSfakeA3}{Full Spread image}[fig:FSfakeA3]!red!`
- figure 7
`\DFimage[FS]{FSfakeA3margins}{Full Spread uncropped image}%
[fig:FSfakeA3margins]`

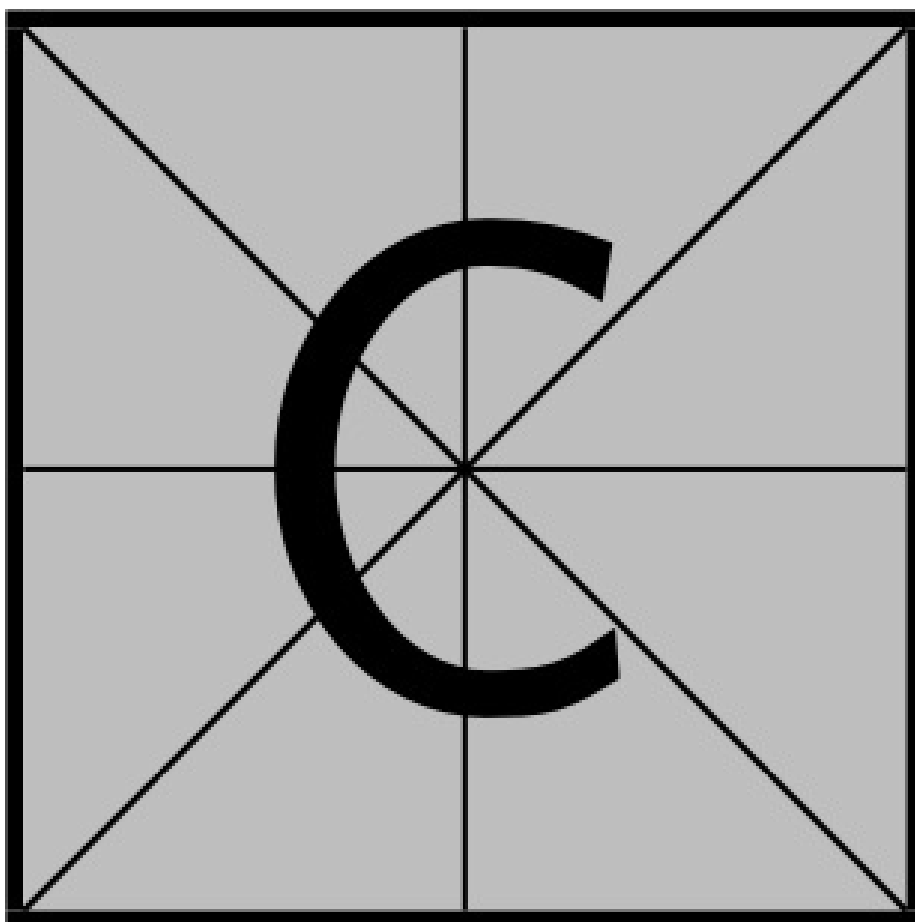


Figure 4: A large Normal Figure fake image

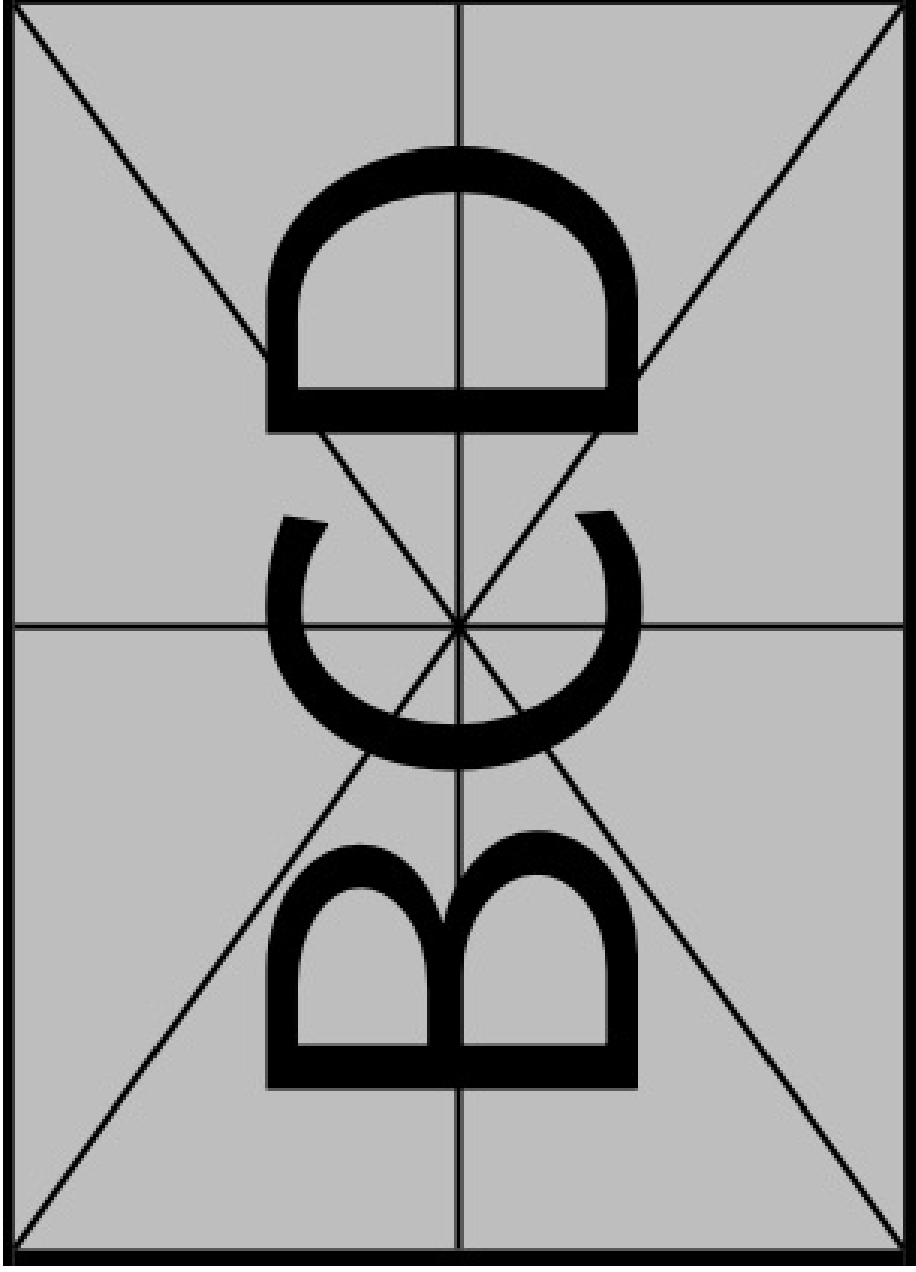
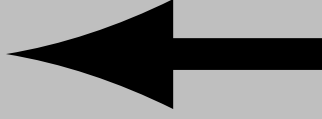


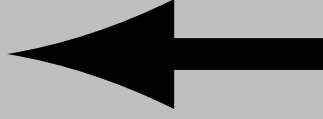
Figure 5: A large Rotated Figure fake image

TOP



|
BOTTOM

TOP





BOTTOM

Figure 7 Full Spread of an image with margins. the margins may be larger or smaller, therefore the caption is set with a one-line gap from the page border and if this caption amounts to more than a single line, this gap remains constant, but the first caption line moves away from the page border.