

# Test of ‘rotating’ package

Sebastian Rahtz and Leonor Barroca<sup>1</sup>

November 19th 1994<sup>2</sup>

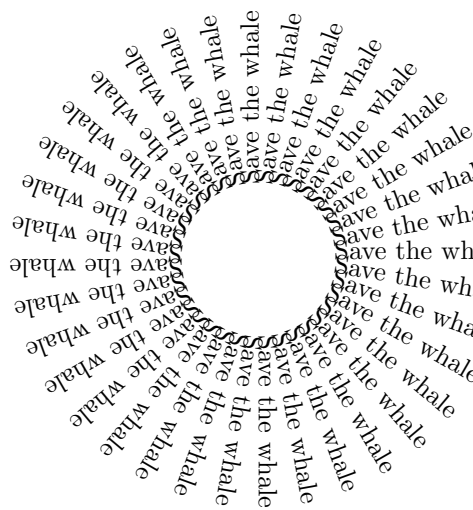
<sup>1</sup>Now maintained as part of the L<sup>A</sup>T<sub>E</sub>X graphics bundle.

<sup>2</sup>Updated for graphics bundle 2026-05-17

‘Rotating’ provides a generalized rotation environment, where the text will be rotated (anti-clockwise) by the number of degrees specified as a parameter to the environment, but no special arrangement is made to find space for the result.

|            |                                  |
|------------|----------------------------------|
|            | Start here                       |
|            | <code>\begin{rotate}{-56}</code> |
|            | Save whales                      |
|            | <code>\end{rotate}</code>        |
| Start here | End here                         |

A complete example of rotating text without leaving space would be the ‘Save the whale’ text written at 10 degree intervals round the compass. We use ‘rlap’ to ensure that all the texts are printed at the same point. Just to show that T<sub>E</sub>X can handle PostScript muckings-about properly...



```

\newcount\wang
\newsavebox{\wangtext}
\newdimen\wangspace
\def\wheel#1{\savebox{\wangtext}{#1}%
\wangspace\wd\wangtext
\advance\wangspace by 1cm%
\centerline{%
\rule{0pt}{\wangspace}%
\rule[-\wangspace]{0pt}{\wangspace}%
\wang=-180\loop\ifnum\wang<180
\rlap{\begin{rotate}{\the\wang}%
\rule{1cm}{0pt}\#1\end{rotate}}%
\advance\wang by 10\repeat}}
\wheel{Save the whale}

```

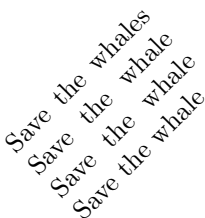
If the user desires L<sup>A</sup>T<sub>E</sub>X to leave space for the rotated box, then ‘turn’ is used:

|            |                |                                  |
|------------|----------------|----------------------------------|
|            | Start here     | <code>\begin{turn}{56}%</code>   |
|            | Save the whale | <code>Save the whale</code>      |
| Start here | end here       | <code>\end{turn} end here</code> |

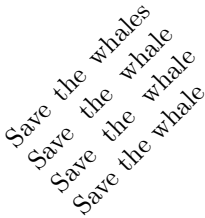
The environment ‘Sideways’ is a special case, setting the rotation to  $-90$ , and leaving the correct space for the rotated box.

|            |                                |
|------------|--------------------------------|
|            | Start here                     |
|            | <code>\begin{sideways}%</code> |
|            | Save the whale                 |
|            | <code>\end{sideways}</code>    |
| Start here | End here                       |

If you deal with whole paragraphs of text, you realize that  $\text{\TeX}$  boxes are not as simple as they sometimes look: they have a height *and* a depth. So when you rotate, you rotate about the point on the left-hand edge of the box that meets the baseline. The results can be unexpected, as shown in the full set of paragraph rotations in Figures 1 and 2. If you really want to turn a paragraph so that it appears to rotate about the *real* bottom of the  $\text{\TeX}$  box, you have to adjust the box in the normal  $\text{\LaTeX}$  way:

Start  End

```
\newsavebox{\foo}
\savebox{\foo}{\parbox{1in}{Save
the whales Save the whale
Save the whale
Save the whale}}%
Start
\begin{turn}{45}\usebox{\foo}\end{turn}
End
```

Start  End

```
\savebox{\foo}{\parbox[b]{1in}{Save
the whales Save the whale
Save the whale
Save the whale}}%
Start
\begin{turn}{45}\usebox{\foo}\end{turn}
End
```

We can set tabular material in this way; at the same time, we demonstrate that the rotation can be nested:

|             |                  |
|-------------|------------------|
| Occurrences | 33               |
|             | 34               |
| Word        | hello<br>goodbye |

```
\begin{sideways}
\rule{1in}{0pt}
\begin{tabular}{|lr|}
\em Word & \begin{rotate}{90}%
Occurrences\end{rotate}
\\
\hline
hello & 33\\
goodbye & 34\\
\hline
\end{tabular}
\end{sideways}
```

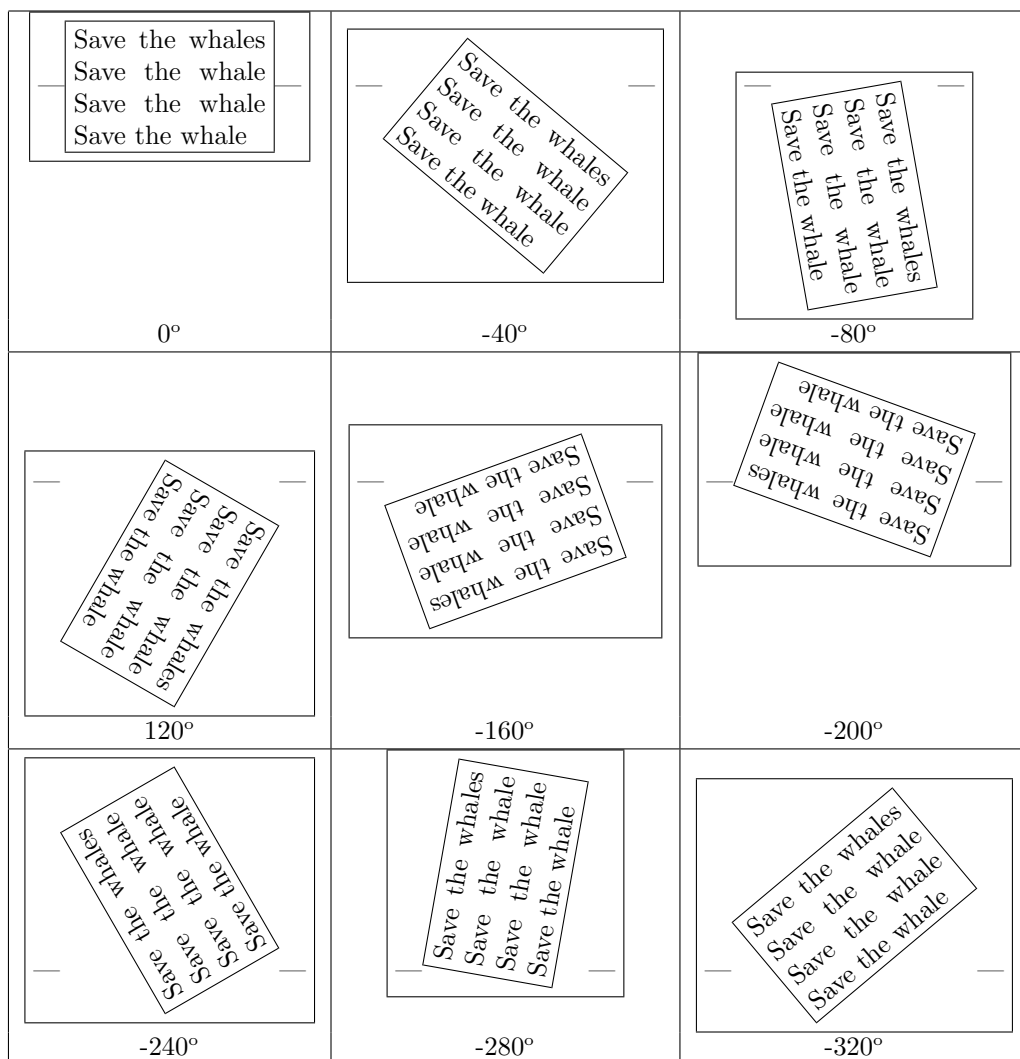


Figure 1: Rotation of paragraphs between 0 and -320 degrees

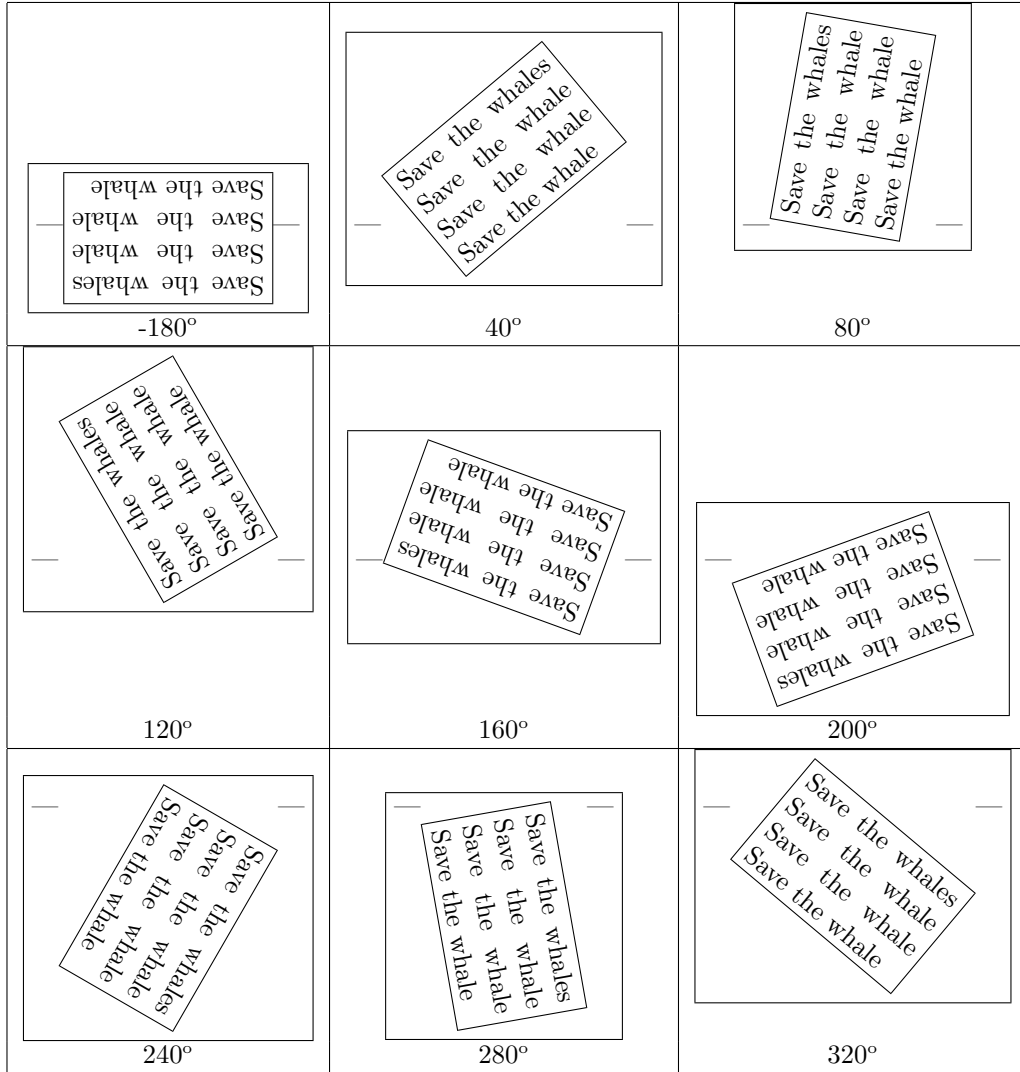


Figure 2: Rotation of paragraphs between 0 and 320 degrees

| Column 1 | Column 2 | Column 3 |
|----------|----------|----------|
| 1        | 2        | 3        |
| 4        | 5        | 6        |
| 7        | 8        | 9        |

```

\begin{quote}
\rule{0pt}{1.5in}\begin{tabular}{rrr}
\begin{rotate}{45}Column 1\end{rotate}&
\begin{rotate}{45}Column 2\end{rotate}&
\begin{rotate}{45}Column 3\end{rotate}\\
\hline
1& 2& 3\\
4& 5& 6\\
7& 8& 9\\
\hline
\end{tabular}
\end{quote}

```

| Column 1 | Column 2 | Column 3 |
|----------|----------|----------|
| 1        | 2        | 3        |
| 4        | 5        | 6        |
| 7        | 8        | 9        |

```

\begin{quote}
\begin{tabular}{rrr}
\begin{turn}{45}Column 1\end{turn}&
\begin{turn}{45}Column 2\end{turn}&
\begin{turn}{45}Column 3\end{turn}\\
\hline
1& 2& 3\\
4& 5& 6\\
7& 8& 9\\
\hline
\end{tabular}
\end{quote}

```

| Column 1 | Column 2 | Column 3 |
|----------|----------|----------|
| 1        | 2        | 3        |
| 4        | 5        | 6        |
| 7        | 8        | 9        |

```

\begin{quote}
\rule{0pt}{1.5in}\begin{tabular}{rrr}
\begin{rotate}{45}Column 1\end{rotate}&
\begin{rotate}{45}Column 2\end{rotate}&
\begin{rotate}{45}Column 3\end{rotate}\\
\hline
1& 2& 3\\
4& 5& 6\\
7& 8& 9\\
\hline
\end{tabular}
\end{quote}

```

| STUDY AREA    | NUMBER OF SITES |                  |          |      | ACCEPT or<br>REJECT<br>NULL<br>HYPOTH |    |
|---------------|-----------------|------------------|----------|------|---------------------------------------|----|
|               | TOT             | IN BOUNDARY ZONE |          | TO   |                                       |    |
|               |                 | OBS              | EXPECTED |      |                                       |    |
|               |                 |                  | FROM     |      |                                       | TO |
| FULL SAMPLE   | 41              | 31               | 10.3     | 27.0 | REJECT                                |    |
| SAMPLE AREA 1 | 23              | 16               | 4.3      | 16.7 | ACCEPT                                |    |
| SAMPLE AREA 2 | 18              | 15               | 2.8      | 13.7 | REJECT                                |    |
| RUSHEN        | 13              | 9                | 1.2      | 10.4 | ACCEPT                                |    |
| ARBORY        | 10              | 7                | 0.6      | 8.8  | ACCEPT                                |    |
| MAROWN        | 10              | 8                | 0.4      | 8.6  | ACCEPT                                |    |
| SANTON        | 8               | 7                | 0.0      | 7.3  | ACCEPT                                |    |
| PRIMARY UNITS |                 |                  |          |      |                                       |    |

```

\begin{sideways}
\begin{tabular}{|l|c|c|c|c|p{1in}|}
\hline
&\multicolumn{4}{c}{NUMBER OF SITES}\vline &ACCEPT or\\
\cline{3-6} &STUDY AREA&\multicolumn{3}{c}{%
IN BOUNDARY ZONE}\vline&REJECT\\
\cline{4-6}&&&\multicolumn{2}{c}{EXPECTED}
\vline&NULL\\
\cline{5-6}&&TOT&OBS&FROM&TO&HYPOTH\\
\cline{2-7}
&FULL SAMPLE&41&31&10.3&27.0&REJECT\\
&SAMPLE AREA 1&23&16&4.3&16.7&ACCEPT\\
&SAMPLE AREA 2&18&15&2.8&13.7&REJECT\\
&RUSHEN&13&9&1.2&10.4&ACCEPT\\
&ARBORY&10&7&0.6&8.8&ACCEPT\\
&MAROWN&10&8&0.4&8.6&ACCEPT\\
\rule{0.5cm}{0pt}
\begin{rotate}{90}PRIMARY UNITS%
\end{rotate}\rule{0.5cm}{0pt}
&SANTON&8&7&0.0&7.3&ACCEPT\\
\hline
\end{tabular}
\end{sideways}

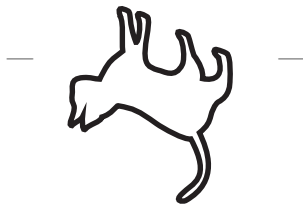
```

If you are interested in setting rotated material in tables or figures, this presents no problem. Figure 3 shows how PostScript files which are being incorporated using can be rotated at will, while Figure 4 shows, in contrast, how ‘includegraphics’ itself handles rotation. It is also possible to rotate the whole of the figure environment, including caption, by using the ‘sidewaysfigure’ and ‘sidewaysstable’ environments in place of ‘figure’ and ‘table’.

Sideways figures and tables always take up the whole page. They can be rotated so that the bottom of the figures is on the left or the right; the default is to always turn to the right. If the ‘twoside’ option has been given to the main document class, this package then starts rotating sideways figures according to the page number (this requires two passes through L<sup>A</sup>T<sub>E</sub>X at least). If you want the ‘twoside’ option, but want the figures always in one direction, use the ‘figuresright’ or ‘figuresleft’ options to ‘rotating’.

The code used to produce figures 1–9 is as follows:

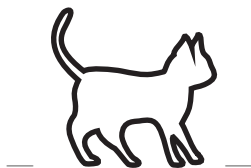




```
---\begin{turn}{156}
\includegraphics[width=1in]{cat}
\end{turn}---
```



```
---\begin{sideways}
\includegraphics[width=1in]{cat}
\end{sideways}---
```



```
---\includegraphics[width=1in]{cat}---
```

Figure 3: A normal, and sideways, pictures within a figure

```
&9919&157&24&112&6&3&3&2&5\\
\hline
\end{tabular}
\end{sideways}
\end{table}
```

```
Figure 9 \begin{sidewaysfigure}
\centering
\includegraphics[width=.8\textheight,height=.4\textwidth]{cat}
\caption{A pathetically squashed rotated pussycat}\label{rotfloat4}
\end{sidewaysfigure}
```

Table 1: This is a narrow table, which should be centered vertically on the final page.

|   |   |
|---|---|
| a | b |
| c | d |
| e | f |
| g | h |
| i | j |

| Context             | Length | Breadth/<br>Diameter | Depth | Profile   | Pottery | Flint | Animal<br>Bones | Stone          | Other      | C14 Dates                                             |
|---------------------|--------|----------------------|-------|-----------|---------|-------|-----------------|----------------|------------|-------------------------------------------------------|
| <b>Grooved Ware</b> |        |                      |       |           |         |       |                 |                |            |                                                       |
| 784                 | —      | 0.9m                 | 0.18m | Sloping U | P1      | ×46   | ×8              | —              | ×2 bone    | 2150± 100 BC                                          |
| 785                 | —      | 1.00m                | 0.12  | Sloping U | P2-4    | ×23   | ×21             | Hammerstone    | —          | —                                                     |
| 962                 | —      | 1.37m                | 0.20m | Sloping U | P5-6    | ×48   | ×57*            | —              | —          | 1990 ± 80 BC<br>(Layer 4) 1870<br>±90 BC (Layer<br>1) |
| 983                 | 0.83m  | 0.73m                | 0.25m | Stepped U | —       | ×18   | ×8              | —              | Fired clay | —                                                     |
| <b>Beaker</b>       |        |                      |       |           |         |       |                 |                |            |                                                       |
| 552                 | —      | 0.68m                | 0.12m | Saucer    | P7-14   | —     | —               | —              | —          | —                                                     |
| 790                 | —      | 0.60m                | 0.25m | U         | P15     | ×12   | —               | Quartzite-lump | —          | —                                                     |
| 794                 | 2.89m  | 0.75m                | 0.25m | Irreg.    | P16     | ×3    | —               | —              | —          | —                                                     |

Table 2: Grooved Ware and Beaker Features, their Finds and Radiocarbon Dates; For a breakdown of the Pottery Assemblages see Tables I and III; for the Flints see Tables II and IV; for the Animal Bones see Table V.

Table 3: Minimum number of individuals; effect of rotating table and caption separately

| Phase | Total | Cattle | Sheep | Pig | Red Deer | Horse | Dog | Goat | Other                                                    |
|-------|-------|--------|-------|-----|----------|-------|-----|------|----------------------------------------------------------|
|       | 1121  | 54     | 12    | 32  | 1        | 1     | 1   | 1    | 1                                                        |
| 3     | 8255  | 58     | 6     | 35  | 1        | 1     | 1   | 1    | pole-cat<br>1 roe deer,<br>1 hare,<br>1 cat,<br>1 ot-ter |
| 4     | 543   | 45     | 6     | 45  | 4        | 1     | 1   | —    | —                                                        |
|       | 9919  | 157    | 24    | 112 | 6        | 3     | 3   | 2    | 5                                                        |



```
\includegraphics[width=1in,%  
angle=-56]{cat}
```

Figure 4: Figures rotated with ‘includegraphics’



Figure 5: A pathetically squashed rotated pussycat (1)



Figure 6: A pathetically squashed rotated pussycat (2)



Figure 7: A pathetically squashed rotated pussycat (3)



Figure 8: A pathetically squashed rotated pussycat (4)



Figure 9: A pathetically squashed rotated pussycat