

Vowel package manual

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1 Drawing vowel diagrams

1.1 The vowel environment

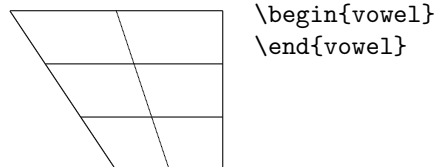
The general format of the `vowel` environment is as follows.

```
\begin{vowel}[option(,option,...)]  
  commands for inputting vowels  
\end{vowel}
```

Options and commands for inputting vowels are explained below.

1.2 The shapes of the diagram supported

The default shape of the vowel diagram is the one used in the recent IPA chart, as shown below.



In this diagram, the bottom, back, and top sides are in the proportion 2:3:4, as was prescribed by Daniel Jones.

In order to change the shape of an diagram, specify the following options.

- `plain`, `simple`, `standard`, `ipanew` (=default)
- `rectangle` Draws a rectangular diagram.
- `triangle` Draws a triangular diagram.
- `three` Distinguishes only three levels of vowel height.

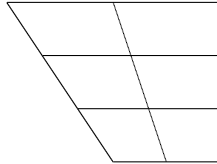
The first group of options are mutually exclusive, i.e., only one them can be selected at a time.

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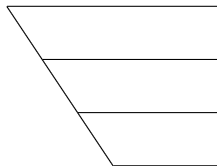
```
\begin{vowel}
\end{vowel}
```

or

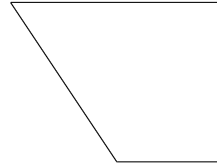
```
\begin{vowel}[ipanew]
\end{vowel}
```



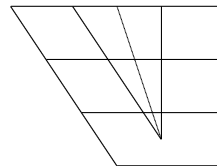
```
\begin{vowel}[simple]
\end{vowel}
```



```
\begin{vowel}[plain]
\end{vowel}
```

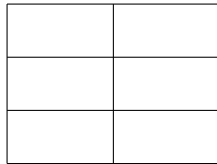


```
\begin{vowel}[standard]
\end{vowel}
```

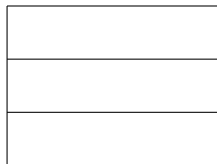


Among the other options, **rectangle** and **triangle** are mutually exclusive but each can be combined with one of the options **plain**, **simple** or **ipanew**. And the last option **three** can be combined with one of the options **plain**, **simple** or **ipanew**, and with one of the options **rectangle** and **triangle**.

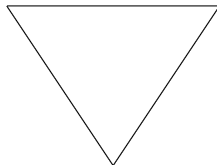
```
\begin{vowel}[rectangle]
\end{vowel}
```



```
\begin{vowel}[simple,rectangle]
\end{vowel}
```



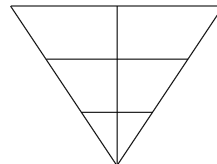
```
\begin{vowel}[plain,triangle]
\end{vowel}
```



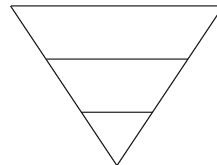
```
\begin{vowel}[plain,rectangle]
\end{vowel}
```



```
\begin{vowel}[triangle]
\end{vowel}
```



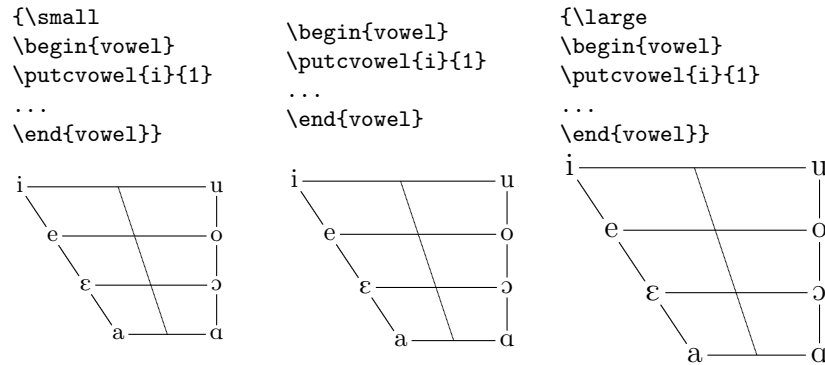
```
\begin{vowel}[simple,triangle]
\end{vowel}
```



The diagram shows a trapezoid with a vertical line segment inside it, representing a cross-section of a dam. The trapezoid has a horizontal top edge, a horizontal bottom edge, and two slanted side edges. A vertical line segment is drawn from the top edge to the bottom edge, representing the dam's core or a specific cross-section.

1.4 Changing the size of a diagram

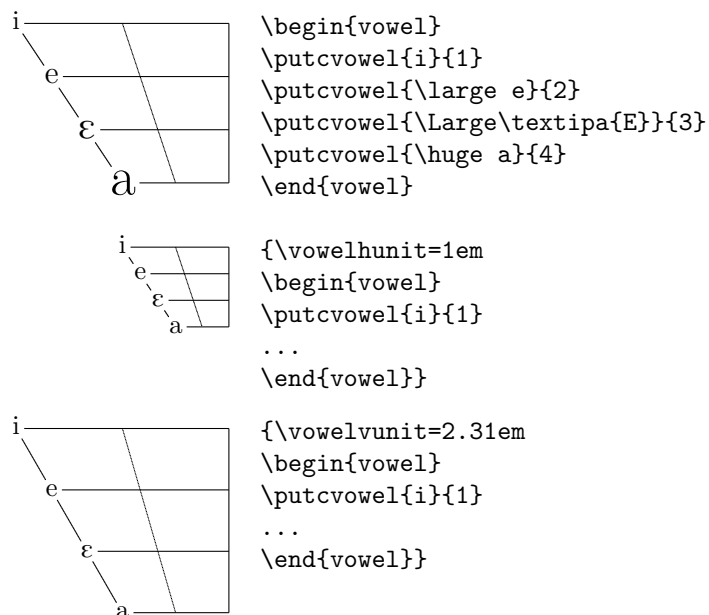
The usual commands for changing the size of text fonts such as `\small`, `\large`, `\Large`, etc. can be used to change the size of a vowel diagram.



It is also possible to change the size of a vowel symbol and the size of a diagram independently.

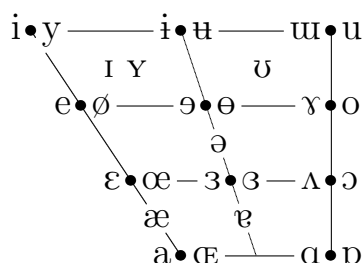
In order to change only the size of a vowel symbol, use the commands such as `\small`, `\large`, etc. within the `\putcvowel` command.

And in order to change only the size of a diagram, give appropriate values to the parameters `\vowelhunit` and `\vowelvunit`. `\vowelhunit` stands for the horizontal unit length, and `\vowelvunit` the vertical unit length. By default both `\vowelhunit` and `\vowelvunit` are equal to 2em. And if only the former is modified by an user, the latter is automatically adjusted to the same length.



2 Example

The next example shows the IPA vowel chart (updated 1996).



```

\begin{vowel}
  \putcvowel[l]{i}{1}
  \putcvowel[r]{y}{1}
  \putcvowel[l]{e}{2}
  \putcvowel[r]{\o}{2}
  \putcvowel[l]{\textepsilon}{3}
  \putcvowel[r]{\oe}{3}
  \putcvowel[l]{a}{4}
  \putcvowel[r]{\textscelig}{4}
  \putcvowel[l]{\textscripta}{5}
  \putcvowel[r]{\textturnscripta}{5}
  \putcvowel[l]{\textturnv}{6}
  \putcvowel[r]{\textopeno}{6}
  \putcvowel[l]{\textramshorns}{7}
  \putcvowel[r]{o}{7}
  \putcvowel[l]{\textturnm}{8}
  \putcvowel[r]{u}{8}
  \putcvowel[l]{\textbari}{9}
  \putcvowel[r]{\textbaru}{9}
  \putcvowel[l]{\textreve}{10}
  \putcvowel[r]{\textbaro}{10}
  \putcvowel{\textschwa}{11}
  \putcvowel[l]{\textrevepsilon}{12}
  \putcvowel[r]{\textcloserevepsilon}{12}
  \putcvowel{\textsci\ \textscy}{13}
  \putcvowel{\textupsilon}{14}
  \putcvowel{\textturna}{15}
  \putcvowel{\ae}{16}
\end{vowel}

```