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# FIRE SCIENCE WORK- SHOP MATERIALS



# 1

## *Summary*

Here's a citation (McGranahan 2021).

### *1.1 Findings*



2

*References*



# 3

## Headings

This style provides first and second-level headings (that is, # and ##), demonstrated in the next section. You may get unexpected output if you try to use ### and smaller headings.

IN HIS LATER BOOKS<sup>1</sup>, Tufte starts each section with a bit of vertical space, a non-indented paragraph, and sets the first few words of the sentence in small caps. To accomplish this using this style, call the newthought ( ) function in **tufte** in an *inline R expression* ``r `` as demonstrated at the beginning of this paragraph.<sup>2</sup>

<sup>1</sup> Beautiful Evidence

<sup>2</sup> Note you should not assume **tufte** has been attached to your R session. You should either `library(tufte)` in your R Markdown document before you call `newthought ( )`, or use `tint::newthought ( )`.





## 4

# Figures

### 4.1 Margin Figures

Images and graphics play an integral role in Tufte's work. To place figures in the margin you can use the **knitr** chunk option `fig.margin = TRUE`. For example:

Note the use of the `fig.cap` chunk option to provide a figure caption. You can adjust the proportions of figures using the `fig.width` and `fig.height` chunk options. These are specified in inches, and will be automatically scaled down to fit within the handout margin.

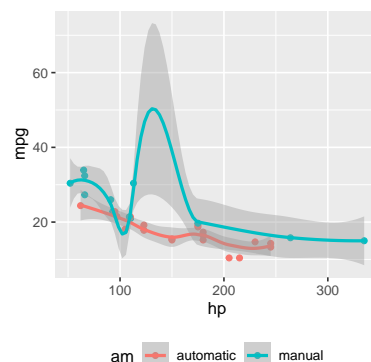


Figure 4.1: MPG vs horsepower, colored by transmission.

### 4.2 Arbitrary Margin Content

In fact, you can include anything in the margin using the **knitr** engine named `marginfigure`. Unlike R code chunks ````{r}`, you write a chunk starting with ````{marginfigure}` instead, then put the content in the chunk. See an example on the right about the first fundamental theorem of calculus.

For the sake of portability between LaTeX and HTML, you should keep the margin content as simple as possible (syntax-wise) in the `marginfigure` blocks. You may use simple Markdown syntax like **bold** and *italic* text, but please refrain from using footnotes, citations, or block-level elements (e.g. blockquotes and lists) there.

### 4.3 Full Width Figures

You can arrange for figures to span across the entire page by using the chunk option `fig.fullwidth = TRUE`.

Other chunk options related to figures can still be used, such as `fig.width`, `fig.cap`, `out.width`, and so on. For full width figures, usually `fig.width` is large and `fig.height` is small. In the above example, the plot size is  $10 \times 2$ .

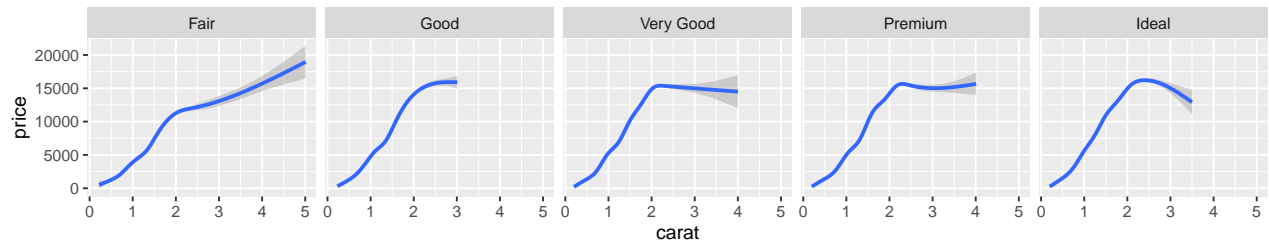


Figure 4.2: A full width figure.

#### 4.4 Main Column Figures

Besides margin and full width figures, you can of course also include figures constrained to the main column. This is the default type of figures in the LaTeX/HTML output.

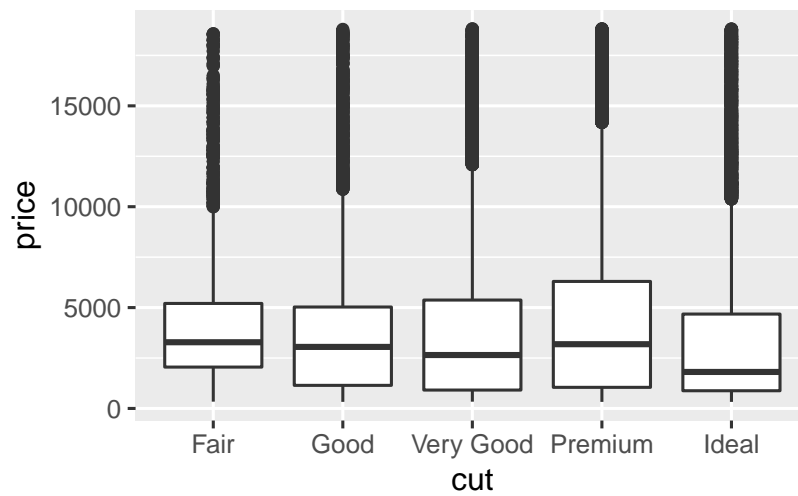


Figure 4.3: A figure in the main column.

# 5

## *Sidenotes*

One of the most prominent and distinctive features of this style is the extensive use of sidenotes. There is a wide margin to provide ample room for sidenotes and small figures. Any use of a footnote will automatically be converted to a sidenote.<sup>1</sup>

If you'd like to place ancillary information in the margin without the sidenote mark (the superscript number), you can use the `margin_note()` function from **tuft** in an inline R expression. This function does not process the text with Pandoc, so Markdown syntax will not work here. If you need to write anything in Markdown syntax, please use the `marginfigure` block described previously.

<sup>1</sup> This is a sidenote that was entered using a footnote.

This is a margin note. Notice that there is no number preceding the note.



## 6

### *References*

References can be displayed as margin notes for HTML output. For example, we can cite a paper here (McGranahan 2021).



# 7

## Tables

You can use the `kable()` function from the **knitr** package to format tables that integrate well with the rest of the Tufte handout style. The table captions are placed in the margin like figures in the HTML output.

Table 7.1: A subset of mtcars.

	mpg	cyl	disp	hp	drat	wt
Mazda RX4	21.0	6	160	110	3.90	2.620
Mazda RX4 Wag	21.0	6	160	110	3.90	2.875
Datsun 710	22.8	4	108	93	3.85	2.320
Hornet 4 Drive	21.4	6	258	110	3.08	3.215
Hornet Sportabout	18.7	8	360	175	3.15	3.440
Valiant	18.1	6	225	105	2.76	3.460





## 8

### *Block Quotes*

We know from the Markdown syntax that paragraphs that start with `>` are converted to block quotes. If you want to add a right-aligned footer for the quote, you may use the function `quote_footer()` from **tufte** in an inline R expression. Here is an example:

"If it weren't for my lawyer, I'd still be in prison. It went a lot faster with two people digging."

— Joe Martin

Without using `quote_footer()`, it looks like this (the second line is just a normal paragraph):

"Great people talk about ideas, average people talk about things, and small people talk about wine."

— Fran Lebowitz



## 9

### *Some Notes on Tufte CSS*

There are a few other things in Tufte CSS that we have not mentioned so far. If you prefer sans-serif fonts, use the function `sans_serif()` in **tufte**. For epigraphs, you may use a pair of underscores to make the paragraph italic in a block quote, e.g.

*I can win an argument on any topic, against any opponent. People know this, and steer clear of me at parties. Often, as a sign of their great respect, they don't even invite me.*

— Dave Barry



## References

McGranahan DA (2021) FeatherFlame: An Arduino-based thermocouple data-logging system to record wildland fire flame temperatures *in agris*. *Rangeland Ecology and Management* **76**, 43–47. doi:<https://doi.org/10.1016/j.rama.2021.01.008>.