

# Package: egg (via r-universe)

October 29, 2024

**Type** Package

**Title** Extensions for 'ggplot2': Custom Geom, Custom Themes, Plot Alignment, Labelled Panels, Symmetric Scales, and Fixed Panel Size

**Version** 0.4.5

**License** GPL-3

**Description** Miscellaneous functions to help customise 'ggplot2' objects. High-level functions are provided to post-process 'ggplot2' layouts and allow alignment between plot panels, as well as setting panel sizes to fixed values. Other functions include a custom 'geom', and helper functions to enforce symmetric scales or add tags to faceted plots.

**VignetteBuilder** knitr

**Depends** gridExtra (>= 2.3), ggplot2

**Imports** gtable, grid, grDevices, utils

**Suggests** knitr, png

**RoxygenNote** 6.1.1

**Repository** <https://baptiste.r-universe.dev>

**RemoteUrl** <https://github.com/baptiste/egg>

**RemoteRef** HEAD

**RemoteSha** c4dac61c847f036224a82cd0be06ab10fc02fa87

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|               |                      |
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| expose_layout | <i>expose_layout</i> |
|---------------|----------------------|

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## Description

Schematic view of a ggplot object's layout.

## Usage

```
expose_layout(p, draw = TRUE, newpage = TRUE)
```

## Arguments

|         |                          |
|---------|--------------------------|
| p       | ggplot                   |
| draw    | logical, draw the gtable |
| newpage | logical                  |

## Value

gtable

## Examples

```
p1 <- qplot(mpg, wt, data=mtcars, colour=cyl)
p2 <- qplot(mpg, data = mtcars) + ggtitle('title')
p3 <- qplot(mpg, data = mtcars, geom = 'dotplot')
p4 <- p1 + facet_wrap(~carb, nrow=1) + theme(legend.position='none') +
  ggtitle('facetted plot')
p1 <- lapply(list(p1,p2, p3, p4), expose_layout, FALSE, FALSE)
grid.arrange(grobs=p1, widths=c(1.2,1,1),
             layout_matrix = rbind(c(1, 2, 3),
                                   c(4, 4, 4)))
```

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|             |                    |
|-------------|--------------------|
| geom_custom | <i>geom_custom</i> |
|-------------|--------------------|

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**Description**

Draw user-defined grobs, typically annotations, at specific locations.

**Usage**

```
geom_custom(mapping = NULL, data = NULL, inherit.aes = TRUE, ...)
```

**Arguments**

|             |  |
|-------------|--|
| mapping     | mapping  |
| data        | data   |
| inherit.aes | inherit.aes                                      |
| ...         | arguments passed to the geom's draw_group method |

**Value**

layer

**Examples**

```
library(grid)
d <- data.frame(x=rep(1:3, 4), f=rep(letters[1:4], each=3))
gl <- replicate(4, matrix(sample(palette(), 9, TRUE), 3, 3), FALSE)
dummy <- data.frame(f=letters[1:4], data = I(gl))
ggplot(d, aes(f,x)) +
  facet_wrap(~f)+
  theme_bw() +
  geom_point()+
  geom_custom(data = dummy, aes(data = data, y = 2),
             grob_fun = function(x) rasterGrob(x, interpolate = FALSE,
                                             width=unit(1,'cm'),
                                             height=unit(1,'cm')))
```

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|           |                  |
|-----------|------------------|
| ggarrange | <i>ggarrange</i> |
|-----------|------------------|

---

**Description**

Arrange multiple ggplot objects on a page, aligning the plot panels.

**Usage**

```
ggarrange(..., plots = list(...), nrow = NULL, ncol = NULL,
  widths = NULL, heights = NULL, byrow = TRUE, top = NULL,
  bottom = NULL, left = NULL, right = NULL, padding = unit(0.5,
  "line"), clip = "on", draw = TRUE, newpage = TRUE, debug = FALSE,
  labels = NULL, label.args = list(gp = grid::gpar(font = 4, cex =
  1.2)))
```

**Arguments**

|                         |   |
|-------------------------|---|
| <code>...</code>        | ggplot objects  |
| <code>plots</code>      | list of ggplots                                       |
| <code>nrow</code>       | number of rows  |
| <code>ncol</code>       | number of columns                                     |
| <code>widths</code>     | list of requested widths                              |
| <code>heights</code>    | list of requested heights                             |
| <code>byrow</code>      | logical, fill by rows                                 |
| <code>top</code>        | optional string, or grob                              |
| <code>bottom</code>     | optional string, or grob                              |
| <code>left</code>       | optional string, or grob                              |
| <code>right</code>      | optional string, or grob                              |
| <code>padding</code>    | unit of length one, margin around annotations         |
| <code>clip</code>       | argument of gtable                                    |
| <code>draw</code>       | logical: draw or return a grob                        |
| <code>newpage</code>    | logical: draw on a new page                           |
| <code>debug</code>      | logical, show layout with thin lines                  |
| <code>labels</code>     | character labels used for annotation of subfigures    |
| <code>label.args</code> | label list of parameters for the formatting of labels |

**Value**

gtable of aligned plots

**Examples**

```
p1 <- ggplot(mtcars, aes(mpg, wt, colour = factor(cyl))) +
  geom_point()
p2 <- ggplot(mtcars, aes(mpg, wt, colour = factor(cyl))) +
  geom_point() + facet_wrap(~ cyl, ncol=2, scales = 'free') +
  guides(colour='none') +
  theme()
ggarrange(p1, p2, widths = c(2,1), labels = c('a', 'b'))
```

---

|              |                     |
|--------------|---------------------|
| gtable_frame | <i>gtable_frame</i> |
|--------------|---------------------|

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**Description**

Reformat the gtable associated with a ggplot object into a 3x3 gtable where the central cell corresponds to the plot panel(s).

**Usage**

```
gtable_frame(g, width = unit(1, "null"), height = unit(1, "null"),
  debug = FALSE)
```

**Arguments**

|        |                           |
|--------|---------------------------|
| g      | gtable                    |
| width  | requested width           |
| height | requested height          |
| debug  | logical draw gtable cells |

**Value**

3x3 gtable wrapping the plot

**Examples**

```
library(grid)
library(gridExtra)
p1 <- ggplot(mtcars, aes(mpg, wt, colour = factor(cyl))) +
  geom_point()

p2 <- ggplot(mtcars, aes(mpg, wt, colour = factor(cyl))) +
  geom_point() + facet_wrap(~ cyl, ncol=2, scales = 'free') +
  guides(colour='none') +
  theme()

p3 <- ggplot(mtcars, aes(mpg, wt, colour = factor(cyl))) +
  geom_point() + facet_grid(. ~ cyl, scales = 'free')

g1 <- ggplotGrob(p1);
g2 <- ggplotGrob(p2);
g3 <- ggplotGrob(p3);
fg1 <- gtable_frame(g1)
fg2 <- gtable_frame(g2)
fg12 <- gtable_frame(gtable_rbind(fg1,fg2), width=unit(2,'null'), height=unit(1,'null'))
fg3 <- gtable_frame(g3, width=unit(1,'null'), height=unit(1,'null'))
grid.newpage()
combined <- gtable_cbind(fg12, fg3)
grid.draw(combined)
```

---

|                |                       |
|----------------|-----------------------|
| set_panel_size | <i>set_panel_size</i> |
|----------------|-----------------------|

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**Description**

Set the panel width/height of a ggplot to a fixed value.

**Usage**

```
set_panel_size(p = NULL, g = ggplot2::ggplotGrob(p), file = NULL,
  margin = unit(1, "mm"), width = unit(4, "cm"), height = unit(4,
  "cm"))
```

**Arguments**

|        |                                   |
|--------|-----------------------------------|
| p      | ggplot2                           |
| g      | gtable                            |
| file   | optional output filename          |
| margin | grid unit                         |
| width  | grid unit, requested panel width  |
| height | grid unit, requested panel height |

**Value**

gtable with fixed panel sizes

**Examples**

```
p1 <- qplot(mpg, wt, data=mtcars, colour=cyl)
p2 <- p1 + facet_wrap(~carb, nrow=1)
grid.arrange(grobs=lapply(list(p1,p2), set_panel_size))
```

---

|                 |                        |
|-----------------|------------------------|
| symmetric_range | <i>symmetric_range</i> |
|-----------------|------------------------|

---

**Description**

Function to ensure that a position scale is symmetric about 0

**Usage**

```
symmetric_range(range)
```

**Arguments**

range            range of the data

**Value**

symmetric range

**Examples**

```
library(ggplot2)
ggplot(mpg, aes(cty, hwy)) +
  geom_point() +
  scale_x_continuous(limits = symmetric_range)
```

---

|                        |                  |
|------------------------|------------------|
| <code>tag_facet</code> | <i>tag_facet</i> |
|------------------------|------------------|

---

**Description**

Adds a dummy text layer to a ggplot to label facets and sets facet strips to blank. This is the typical formatting for some journals that consider facets as subfigures and want to minimise margins around figures.

**Usage**

```
tag_facet(p, open = "(", close = ")", tag_pool = letters, x = -Inf,
  y = Inf, hjust = -0.5, vjust = 1.5, fontface = 2, family = "",
  ...)
```

**Arguments**

|                       |  |
|-----------------------|--|
| <code>p</code>        | <code>ggplot</code>                                      |
| <code>open</code>     | opening character, default: (                            |
| <code>close</code>    | closing character, default: )                            |
| <code>tag_pool</code> | character vector to pick tags from                       |
| <code>x</code>        | x position within panel, default: -Inf                   |
| <code>y</code>        | y position within panel, default: Inf                    |
| <code>hjust</code>    | <code>hjust</code>                                       |
| <code>vjust</code>    | <code>vjust</code>                                       |
| <code>fontface</code> | <code>fontface</code>                                    |
| <code>family</code>   | font family  |
| <code>...</code>      | further arguments passed to <code>geom_text</code> layer |

**Value**

plot with facet strips removed and replaced by in-panel tags

**Examples**

```
library(ggplot2)
mydf = data.frame(
  x = 1:90,
  y = rnorm(90),
  red = rep(letters[1:3], 30),
  blue = c(rep(1, 30), rep(2, 30), rep(3, 30)))

p <- ggplot(mydf) +
  geom_point(aes(x = x, y = y)) +
  facet_wrap(
    ~ red + blue)
tag_facet(p)
```

---

|                   |                          |
|-------------------|--------------------------|
| tag_facet_outside | <i>tag_facet_outside</i> |
|-------------------|--------------------------|

---

**Description**

Adds a dummy text layer to a ggplot to label facets and sets facet strips to blank. This is the typical formatting for some journals that consider facets as subfigures and want to minimise margins around figures.

**Usage**

```
tag_facet_outside(p, open = c("(", ""), close = c(")", "."),
  tag_fun_top = function(i) letters[i],
  tag_fun_right = utils::as.roman, x = c(0, 0), y = c(0.5, 1),
  hjust = c(0, 0), vjust = c(0.5, 1), fontface = c(2, 2),
  family = "", draw = TRUE, ...)
```

**Arguments**

|               |                               |
|---------------|-------------------------------|
| p             | ggplot                        |
| open          | opening character, default: ( |
| close         | closing character, default: ) |
| tag_fun_top   | labelling function            |
| tag_fun_right | labelling function            |
| x             | x position within cell        |
| y             | y position within cell        |
| hjust         | hjust                         |



|          |   |
|----------|---|
| vjust    | vjust                                       |
| fontface | fontface                                    |
| family   | font family                                 |
| draw     | logical: draw the resulting gtable          |
| ...      | further arguments passed to geom_text layer |

**Value**

plot with facet strips removed and replaced by in-panel tags

**Examples**

```
library(ggplot2)
d = data.frame(
  x = 1:90,
  y = rnorm(90),
  red = rep(letters[1:3], 30),
  blue = c(rep(1, 30), rep(2, 30), rep(3, 30)))

p <- ggplot(d) +
  geom_point(aes(x = x, y = y)) +
  facet_grid(red ~ blue)

tag_facet_outside(p)
```

---

|               |  |
|---------------|--|
| theme_article | <i>Theme with minimalistic (and opinionated) defaults suitable for publication</i> |
|---------------|--|

---

**Description**

Theme with minimalistic (and opinionated) defaults suitable for publication

**Usage**

```
theme_article(base_size = 11, base_family = "")
```

**Arguments**

|             |                  |
|-------------|------------------|
| base_size   | base font size   |
| base_family | base font family |

## Examples

```
library(ggplot2)

d = data.frame(
  x = 1:90,
  y = rnorm(90),
  red = rep(letters[1:3], 30),
  blue = c(rep(1, 30), rep(2, 30), rep(3, 30)))

p <- ggplot(d) +
  geom_point(aes(x = x, y = y)) +
  facet_grid(red ~ blue)
tag_facet(p + theme_article())
p + theme_presentation()

# example of use with cairo device
# ggsave("fig_talk.pdf", p + theme_presentation("Source Sans Pro"),
#        width=14, height=7, device = cairo_pdf, bg='transparent')
```

---

|                    |   |
|--------------------|---|
| theme_presentation | <i>Theme with minimalistic (and opinionated) defaults suitable for presentation</i> |
|--------------------|---|

---

## Description

Theme with minimalistic (and opinionated) defaults suitable for presentation

## Usage

```
theme_presentation(base_size = 24, base_family = "")
```

## Arguments

|             |                  |
|-------------|------------------|
| base_size   | base font size   |
| base_family | base font family |

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