# Package 'ggreveal'

April 5, 2026

**Title** Reveal a 'ggplot' Incrementally

**Version** 0.2.0

**Description** Provides functions that make it easy to reveal 'ggplot2' graphs incrementally. The functions take a plot produced with 'ggplot2' and return a list of plots showing data incrementally by panels, layers, groups, the values in an axis or any arbitrary aesthetic.

**License** MIT + file LICENSE

**Encoding** UTF-8

**RoxygenNote** 7.3.3

**Imports** cli, dplyr, ggplot2, ggplotify, rlang, stringr, tidyr, patchwork

**Suggests** testthat (>= 3.0.0), vdiffr, mockery, knitr, rmarkdown

**Config/testthat/edition** 3

**URL** http://www.weverthon.com/ggreveal/, https://github.com/weverthonmachado/ggreveal

**BugReports** https://github.com/weverthonmachado/ggreveal/issues

**Config/Needs/website** rmarkdown, magick, palmerpenguins, ggridges, ggpubr, geobr, sf, ggmapinset

**NeedsCompilation** no

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**Repository** CRAN

**Date/Publication** 2026-04-04 22:00:02 UTC

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`reveal_aes` *Reveal plot by aesthetic*

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## Description

Turns a ggplot into a list of plots, showing data incrementally by an arbitrary aesthetic.

## Usage

```
reveal_aes(p, aes = "group", order = NULL, max = 20)
```

## Arguments

| | |
|---|---|
| `p` | A ggplot2 object |
| `aes` | which aesthetic to reveal E.g.: group, colour, shape, linetype |
| `order` | (optional) A numeric vector specifying in which order to reveal levels of the specified aesthetic.<br>For example, if `aes='shape'` and the plot uses three shapes, `order = c(3, 2, 1)` will invert the order in which they are revealed.<br>Any shape not included in the vector will be omitted from the incremental plots. E.g.: with `order = c(3, 1)`, the second shape is not shown.<br>By default, the first plot is blank, showing layout elements (title, legends, axes, etc) but no data. To omit the blank plot, include `-1`: e.g. `order = c(-1, 3, 1)`, or `order = -1`. |
| `max` | maximum number of unique levels of aesthetic to be used |

## Value

A list of ggplot2 objects, which can be passed to `reveal_save()`

## Examples

```
# Create full plot
library(ggplot2)

 p <- ggplot(mtcars,
          aes(mpg, wt,
              color = factor(vs),
              group = factor(vs))) +
   geom_point(aes(shape=factor(am)), size=2) +
   geom_smooth(method="lm",
```

```
              formula = 'y ~ x',
              linewidth=1)
 p

 plot_list <- reveal_aes(p, "shape")
 plot_list[[1]]
 plot_list[[2]]
 plot_list[[3]]
 plot_list[[4]]


# Save plots
reveal_save(plot_list, "myplot.png", width = 8, height = 4, path = tempdir())

# Clean temp files
file.remove(list.files(path = tempdir(), pattern = "myplot", full.names = TRUE))
```

---

`reveal_groups` *Reveal plot by group*

---

## Description

Turns a ggplot into a list of plots, showing data incrementally by groups. Note that if the `group` aesthetic is not explicitly defined in the original plot, `ggplot2` will set it to the interaction of all discrete variables (see ggplot2::aes_group_order).

## Usage

```
reveal_groups(p, order = NULL)
```

## Arguments

| | |
|---|---|
| `p` | A ggplot2 object |
| `order` | (optional) A numeric vector specifying in which order to reveal the groups<br>For example, if there are three groups in the plot, `order = c(3, 2, 1)` will invert the order in which they are revealed.<br>Any group not included in the vector will be omitted from the incremental plots. E.g.: with `order = c(3, 1)`, the second group is not shown.<br>By default, the first plot is blank, showing layout elements (title, legends, axes, etc) but no data. To omit the blank plot, include `-1`: e.g. `order = c(-1, 3, 1)`, or `order = -1`. |

## Value

A list of ggplot2 objects, which can be passed to `reveal_save()`

## Examples

```
# Create full plot
library(ggplot2)
data("mtcars")

p <- ggplot(mtcars,
         aes(mpg, wt,
             color = factor(vs),
             group = factor(vs))) +
  geom_point() +
  geom_smooth(method="lm",
              formula = 'y ~ x',
              linewidth=1) +
  facet_wrap(~am)
p

plot_list <- reveal_groups(p)
plot_list[[1]]
plot_list[[2]]
plot_list[[3]]

# Save plots
reveal_save(plot_list, "myplot.png", width = 8, height = 4, path = tempdir())

# Clean temp files
file.remove(list.files(path = tempdir(), pattern = "myplot", full.names = TRUE))
```

---

`reveal_layers` *Reveal plot by layer*

---

## Description

Turns a ggplot into a list of plots, showing data incrementally by layers.

## Usage

```
reveal_layers(p, order = NULL)
```

## Arguments

| | |
|---|---|
| `p` | A ggplot2 object |
| `order` | (optional) A numeric vector specifying in which order to reveal the layers<br>For example, if there are three layers in the plot, `order = c(3, 2, 1)` will invert the order in which they are revealed.<br>Any layer not included in the vector will be omitted from the incremental plots. E.g.: with `order = c(3, 1)`, the second layer is not shown.<br>By default, the first plot is blank, showing layout elements (title, legends, axes, etc) but no data. To omit the blank plot, include `-1`: e.g. `order = c(-1, 3, 1)`, or `order = -1`. |

## Value

A list of ggplot2 objects, which can be passed to `reveal_save()`

## Examples

```
# Create full plot
library(ggplot2)
data("mtcars")

p <- ggplot(mtcars,
         aes(mpg, wt,
             color = factor(vs),
             group = factor(vs))) +
  geom_point() +
  geom_smooth(method="lm",
              formula = 'y ~ x',
              linewidth=1) +
  facet_wrap(~am)
p

plot_list <- reveal_layers(p)
plot_list[[1]]
plot_list[[2]]
plot_list[[3]]

# Save plots
reveal_save(plot_list, "myplot.png", width = 8, height = 4, path = tempdir())

# Clean temp files
file.remove(list.files(path = tempdir(), pattern = "myplot", full.names = TRUE))
```

---

`reveal_panels` *Reveal faceted plot by panel*

---

## Description

Turns a ggplot into a list of plots, showing data incrementally by panels.

## Usage

```
reveal_panels(p, order = NULL, what = c("data", "everything"))
```

## Arguments

| | |
|---|---|
| `p` | A ggplot2 object |
| `order` | (optional) A numeric vector specifying in which order to reveal the panels<br>For example, if there are three panels in the plot, `order = c(3, 2, 1)` will invert the order in which they are revealed. |

Any panel not included in the vector will be omitted from the incremental plots. E.g.: with `order = c(3, 1)`, the second panel is not shown.

By default, the first plot is blank, showing layout elements (title, legends, axes, etc) but no data. To omit the blank plot, include `-1`: e.g. `order = c(-1, 3, 1)`, or `order = -1`.

`what` (optional) one of `"data"` or `"everything"`.' With `"data"` (the default), the basic graph layout, including axes and facet labels, is shown from the start, and only the data points are shown incrementally. With `"everything"`, the entire panels are shown incrementally.

## Value

A list of ggplot2 objects, which can be passed to `reveal_save()`

## Examples

```
# Create full plot
library(ggplot2)
data("mtcars")

p <- ggplot(mtcars,
         aes(mpg, wt,
             color = factor(vs),
             group = factor(vs))) +
  geom_point() +
  geom_smooth(method="lm",
              formula = 'y ~ x',
              linewidth=1) +
  facet_wrap(~am)
p

# Only data
plot_list <- reveal_panels(p, what = "data")
plot_list[[1]]
plot_list[[2]]
plot_list[[3]]

# Everything
plot_list <- reveal_panels(p, what = "everything")
plot_list[[1]]
plot_list[[2]]
plot_list[[3]]

# Save plots
reveal_save(plot_list, "myplot.png", width = 8, height = 4, path = tempdir())

# Clean temp files
file.remove(list.files(path = tempdir(), pattern = "myplot", full.names = TRUE))
```

`reveal_patchwork` *Reveal plots from a patchwork object*

## Description

Turns a patchwork into a list of plots that reveal each child plot incrementally. Also works with nesting and insets.

## Usage

```
reveal_patchwork(pw, order = NULL)
```

## Arguments

| | |
|---|---|
| `pw` | A patchwork object |
| `order` | (optional) A numeric vector specifying in which order to reveal the plots<br>For example, if there are three plots in the patchwork, `order = c(3, 2, 1)` will invert the order in which they are revealed.<br>Any plot not included in the vector will be omitted from the incremental plots. E.g.: with `order = c(3, 1)`, the second plot is not shown.<br>By default, the first plot returned by this function is blank, showing layout elements of the patchwork but none of its child plots. To omit the blank plot, include `-1`: e.g. `order = c(-1, 3, 1)`, or `order = -1`. |

## Value

A list of ggplot2 objects

## Examples

```
library(ggplot2)
library(patchwork)
data("mtcars")
p1 <- ggplot(mtcars,
        aes(cyl,
            fill = factor(am))) +
      geom_bar()  +
      labs(title = "Plot 1")

p2 <- ggplot(mtcars,
        aes(disp,
            fill = factor(am))) +
      geom_histogram()  +
      labs(title = "Plot 2")

p3 <- ggplot(mtcars,
        aes(mpg, wt,
            color = factor(vs))) +
```

```
      geom_point() +
      guides(color="none") +
      labs(title = "Plot 3")

p4<- p3 +
      coord_polar() +
      theme_minimal() +
      theme(axis.title = element_blank()) +
      labs(title = "Plot 4")

pw <- (p1 + p2)/(p3 + inset_element(p4, 0.4, 0.4, 1.4, 1 )) +
         plot_layout(guides = "collect")

plot_list <- reveal_patchwork(pw)
plot_list[[1]]
plot_list[[2]]
plot_list[[3]]
plot_list[[4]]
plot_list[[5]]
```

---

`reveal_save` *Saves incremental plots*

---

## Description

Saves incremental plots

## Usage

```
reveal_save(plot_list, basename, ...)
```

## Arguments

| | |
|---|---|
| `plot_list` | A list of plots created by one of the `reveal_*` functions (e.g. `reveal_groups()`, `reveal_layers()`, `reveal_aes()`] |
| `basename` | The base file name that will be used for saving. |
| `...` | Additional arguments (e.g. width, height) to be passed to `ggplot2::ggsave()` |

## Value

The paths of the saved plots, invisibly

## Examples

```
# Create full plot
library(ggplot2)
data("mtcars")

p <- ggplot(mtcars,
```

```
        aes(mpg, wt,
            color = factor(vs),
            group = factor(vs))) +
  geom_point() +
  geom_smooth(method="lm",
              formula = 'y ~ x',
              linewidth=1) +
  facet_wrap(~am)
p

plot_list <- reveal_groups(p)
plot_list[[1]]
plot_list[[2]]
plot_list[[3]]

# Save plots
reveal_save(plot_list, "myplot.png", width = 8, height = 4, path = tempdir())

# Clean temp files
file.remove(list.files(path = tempdir(), pattern = "myplot", full.names = TRUE))
```

---

`reveal_x` *Reveal plot by axis*

---

## Description

Turns a ggplot into a list of plots, showing data incrementally by the categories in the x or y axis.

## Usage

```
reveal_x(p, order = NULL)

reveal_y(p, order = NULL)
```

## Arguments

| | |
|---|---|
| `p` | A ggplot2 object |
| `order` | (optional) A numeric vector specifying in which order to reveal the categories<br>For example, if there are three categories in the axis, `order = c(3, 2, 1)` will invert the order in which they are revealed.<br>Any category not included in the vector will be omitted from the incremental plots. E.g.: with `order = c(3, 1)`, the second category is not shown.<br>By default, the first plot is blank, showing layout elements (title, legends, axes, etc) but no data. To omit the blank plot, include `-1`: e.g. `order = c(-1, 3, 1)`, or `order = -1`. |

## Value

A list of ggplot2 objects, which can be passed to `reveal_save()`

## Examples

```
# Create full plot
library(ggplot2)
data("mtcars")

p <- ggplot(mtcars,
            aes(factor(vs),
              color = gear,
              fill= gear,
              group = gear)) +
  geom_bar() +
  facet_wrap(~am)
p

plot_list <- reveal_x(p)
plot_list[[1]]
plot_list[[2]]
plot_list[[3]]

# Save plots
reveal_save(plot_list, "myplot.png", width = 8, height = 4, path = tempdir())

# Clean temp files
file.remove(list.files(path = tempdir(), pattern = "myplot", full.names = TRUE))
```

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