

# Package ‘ggplot.plus’

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**Title** Elevating Ggplot2's Defaults Aesthetics and Behaviors

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**Description**

A collection of ggplot2 enhancements for improved design defaults, accessibility, and usability.

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cont_breaks_plus	<i>Find Pretty Breaks for Continuous Axes in ggplot While Ensuring End Labels</i>
------------------	---

---

## Description

This function attempts to find a set of breaks for a continuous variable such that there aren't too many breaks, the breaks are "pretty" values where possible, and breaks exist at or near to the range values of the variable. It is essential `pretty_breaks()` from the `scales` package except that it is more opinionated about needing breaks at or near both ends of the data range. If needed, the limits of the axis are expanded slightly to yield a new break just past the range of the data.

## Usage

```
cont_breaks_plus(data, n = 5, buffer_frac = 0.05)
```

## Arguments

data	The single vector of strictly numeric data to find pretty breaks for. Required.
n	A length-1 numeric value for the "target" number of breaks to create. Defaults to 5.
buffer_frac	A length-1 numeric value corresponding to how close the end breaks must be to the end of the data for new breaks to not be added. Defaults to 0.05 (5%).

## Value

Returns a named lists containing breaks and limits to use for the data provided, to be used in a `scale_*_continuous()` function in a `ggplot2` call.

## Examples

```
cont_breaks_plus(iris$Sepal.Length)
```

---

element_to_gpar	<i>Translate Between Ggplot's and Gpar's Attribute Names.</i>
-----------------	---

---

**Description**

This is an internal convenience function that matches up ggplot2's aesthetics names with those expected by the `grid::gpar` function so that user-specified aesthetics get properly carried over into the final product.

**Usage**

```
element_to_gpar(el)
```

**Arguments**

`el` A list or list-like object containing the names of elements to be translated.

**Value**

A list of translated elements.

---

GeomPointPlus	<i>An alternative version of ggplot2's geomPoint proto that incorporates new, distinctive shapes.</i>
---------------	---

---

**Description**

This ggplot proto object is called internally by `geom_point2()` and inherits most, but not all, of its methods from those used in ggplot2's standard `geomPoint` proto. However, it has different default aesthetics, a different shapes palette, and can draw these new shapes in a legend. This function is not meant to be called by the user; for that, `geom_point_plus()` is intended.

**Usage**

```
GeomPointPlus
```

**Format**

An object of class `point_plus` (inherits from `GeomPoint`, `Geom`, `ggproto`, `gg`) of length 4.

**Value**

A ggplot2 ggproto class object.

---

geom\_plus

---

*Generates Base Geoms With Elevated Defaults*

---

**Description**

Maps inputs to a base ggplot geom (e.g., `geom_point` or `geom_line`) but provides default values more likely to adhere to best practices around usability, design aesthetics, and accessibility.

**Usage**

```
geom_plus(
  geom,
  ...,
  include_theme = FALSE,
  include_gridlines = FALSE,
  include_xscale_plus = FALSE,
  include_yscale_plus = FALSE,
  include_fillscale_plus = FALSE,
  include_colorscale_plus = FALSE,
  new_x_title = NULL,
  new_y_title = NULL,
  new_color_title = NULL,
  new_fill_title = NULL,
  new_size_title = NULL,
  new_shape_title = NULL,
  new_alpha_title = NULL,
  silence_warnings = FALSE
)
```

**Arguments**

<code>geom</code>	The name of the geom being drawn. Corresponds to the portion of the <code>geom_</code> function after the <code>_</code> , e.g., "point" for <code>geom_point</code> , "line" for <code>geom_line</code> , etc. Must be a length one character string, and must match an implemented geom. See <code>names(geom_plus_defaults)</code> for a list of these. Required input.
<code>...</code>	Other arguments to be passed along to the <code>geom_</code> function being called.
<code>include_theme</code>	Should a call to <code>theme_plus()</code> with no arguments be automatically applied to the ggplot command chain, without needing to be called separately? Defaults to FALSE. Set to TRUE to include it.
<code>include_gridlines</code>	Should a call to <code>gridlines_plus()</code> with no arguments be automatically applied to the ggplot command chain, without needing to be called separately? Defaults to FALSE. Set to TRUE to include it.
<code>include_xscale_plus</code>	Should a call to <code>scale_x_continuous_plus()</code> with no arguments be automatically applied to the ggplot command chain, without needing to be called separately? Defaults to FALSE. Set to TRUE to include it.
<code>include_yscale_plus</code>	Should a call to <code>scale_y_continuous_plus()</code> with no arguments be automatically applied to the ggplot command chain, without needing to be called separately? Defaults to FALSE. Set to TRUE to include it.

include_fillscale_plus	Should a call to <code>scale_fill_continuous_plus()</code> with no arguments be automatically applied to the ggplot command chain, without needing to be called separately? Defaults to FALSE. Set to TRUE to include it.
include_colourscale_plus	Should a call to <code>scale_color_continuous_plus()</code> with no arguments be automatically applied to the ggplot command chain, without needing to be called separately? Defaults to FALSE. Set to TRUE to include it.
new_x_title	A string to use for the graph's x axis title. Defaults to NULL and will be ignored unless a length-1 string.
new_y_title	A string to use for the graph's y axis title. Defaults to NULL and will be ignored unless a length-1 string.
new_color_title	A string to use for the graph's color legend title. Defaults to NULL and will be ignored unless a length-1 string.
new_fill_title	A string to use for the graph's fill legend title. Defaults to NULL and will be ignored unless a length-1 string.
new_size_title	A string to use for the graph's size legend title. Defaults to NULL and will be ignored unless a length-1 string.
new_shape_title	A string to use for the graph's shape legend title. Defaults to NULL and will be ignored unless a length-1 string.
new_alpha_title	A string to use for the graph's alpha legend title. Defaults to NULL and will be ignored unless a length-1 string.
silence_warnings	<code>geom_plus()</code> triggers some checks for aspects of good graph design and, if any of these checks fail, a warning is triggered to direct the user towards better practices. Set this parameter to FALSE to silence these warnings.

**Value**

List with the class "geom\_plus", which will trigger the `geom_plus` method in `ggplot_add`.

**Examples**

```
ggplot2::ggplot(iris, ggplot2::aes(x=Sepal.Length, y=Petal.Length)) +
  geom_plus(geom = "point")
```

---

geom_plus_defaults	<i>Default settings for geometry layers created by geom_plus()</i>
--------------------	--

---

**Description**

A named list of default aesthetics used by `geom_plus()` to control styling of the resulting geometry layers.

**Usage**

```
geom_plus_defaults
```

## Format

A named list with elements like "point", "jitter", "boxplot", etc., corresponding to commonly used ggplot2 geometries. Use `names(geom_plus_defaults)` for a full list.

---

<code>geom_point2</code>	<i>An backend version of <code>geom_point()</code> that can access distinctive shapes.</i>
--------------------------	--

---

## Description

This function behaves much like ggplot2's `geom_point()` function except that it allows access to a palette of nine new shapes that vary in their openness, spikiness, and intersectionality, making them more easily distinguished. This function is not meant to be called directly—instead, `geom_point_plus()` calls and modifies this function and is the intended function for users.

## Usage

```
geom_point2(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  shapes = shapes.list,
  ...,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

## Arguments

<code>mapping</code>	Set of aesthetic mappings created by <code>aes()</code> , as in <code>ggplot2::geom_point()</code> .
<code>data</code>	The data to be displayed in this layer, as in <code>ggplot2::geom_point()</code> .
<code>stat</code>	The statistical transformation to use on the data for this layer, as in <code>ggplot2::geom_point()</code> .
<code>position</code>	A position adjustment to use on the data for this layer, as in <code>ggplot2::geom_point()</code> .
<code>shapes</code>	A named list of custom shapes to be drawn in place of ggplot2's standard palette of shapes.
<code>...</code>	Other arguments passed on to <code>layer()</code> 's <code>params</code> argument, as in <code>ggplot2::geom_point()</code> .
<code>na.rm</code>	Logical value controlling whether missing values should be removed from the data with a warning or silently, as in <code>ggplot2::geom_point()</code> .
<code>show.legend</code>	Logical value controlling whether this layer should be included in the legends, as in <code>ggplot2::geom_point()</code> .
<code>inherit.aes</code>	Logical for whether the default aesthetics should be overridden rather than combined with the provided aesthetics, as in <code>ggplot2::geom_point()</code> .

## Value

A ggplot2 layer object.

---

geom_point_plus	Create and add a scatterplot layer to your ggplot2 graph with new, distinctive shapes.
-----------------	--

---

## Description

This function behaves similarly to `ggplot2::geom_point()` except that it takes several new inputs: `shapes`, `n_shapes`, `shape_values`, `legend_title`, and `key_size`. These are explained below. Collectively, these inputs allow `geom_point_plus()` to access and draw several new and distinctive shapes that are designed to be more readily distinguishable from one another when shape communicates difference.

## Usage

```
geom_point_plus(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  shapes = shapes.list,
  n_shapes = length(shapes),
  shape_values = NULL,
  legend_title = NULL,
  key_size = 10,
  include_shape_legend = TRUE,
  ...,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

## Arguments

<code>mapping</code>	Set of aesthetic mappings created by <code>aes()</code> , as in <code>ggplot2::geom_point()</code> .
<code>data</code>	The data to be displayed in this layer, as in <code>ggplot2::geom_point()</code> .
<code>stat</code>	The statistical transformation to use on the data for this layer, as in <code>ggplot2::geom_point()</code> .
<code>position</code>	A position adjustment to use on the data for this layer, as in <code>ggplot2::geom_point()</code> .
<code>shapes</code>	A named list of custom shapes to be drawn in place of ggplot2's standard palette of shapes. Defaults to <code>shapes.list</code> , the palette of shapes designed specifically for use in <code>geom_point_plus()</code> and should (probably) not be changed unless users have created new shapes they would like to use instead.
<code>n_shapes</code>	A length-1 integer corresponding to the number of distinct shapes the function is allowed to pull from the shapes palette specified to <code>shapes</code> . Defaults to the length of <code>shapes</code> and should (probably) not be changed.
<code>shape_values</code>	A character string referring by name to elements in the <code>shapes.list</code> the function should use to allocate shapes to values, e.g. <code>c("flower", "octagon", "squircle")</code> . These are provided internally to a <code>scale_shape_manual()</code> call and are meant to circumvent the need for such a call to specify a specific subset of shapes to be used. Defaults to <code>NULL</code> , i.e., shapes are pulled from <code>shapes.list</code> in order.

legend_title	A length-1 character string corresponding to the name to be used for the shape legend title (if any). This is passed internally to <code>scale_shape_manual()</code> and is meant to help circumvent the need for the user to specify any such call directly.
key_size	A length-1 numeric value corresponding to the desired size of the legend keys. Defaults to 10. This is passed internally to <code>scale_shape_manual()</code> and is meant to help circumvent the need for the user to specify any such call directly.
include_shape_legend	Logical indicating whether a shape legend will be shown (one is always shown unless this is set to FALSE).
...	Other arguments passed on to <code>layer()</code> 's <code>params</code> argument, as in <code>ggplot2::geom_point()</code> .
na.rm	Logical value controlling whether missing values should be removed from the data with a warning or silently, as in <code>ggplot2::geom_point()</code> .
show.legend	Logical value controlling whether this layer should be included in the legends, as in <code>ggplot2::geom_point()</code> .
inherit.aes	Logical for whether the default aesthetics should be overridden rather than combined with the provided aesthetics, as in <code>ggplot2::geom_point()</code> .

### Value

A ggplot2 layer object.

### Examples

```
ggplot2::ggplot(mtcars, ggplot2::aes(wt, mpg, fill = drat)) +
  geom_point_plus(ggplot2::aes(shape = factor(gear)), size = 5)
ggplot2::ggplot(mtcars, ggplot2::aes(wt, mpg, fill = factor(cyl))) +
  geom_point_plus(ggplot2::aes(shape = factor(carb)),
    shape_values = c("squircle", "lotus", "sunburst", "octagon", "cross", "oval"),
    size = 5, stroke = 0.4)
ggplot2::ggplot(iris, ggplot2::aes(Petal.Width, Petal.Length, fill = Species)) +
  geom_point_plus(ggplot2::aes(shape = Species), size = 5, alpha = 0.7)
```

---

geom\_point\_plus\_shapes

*A new palette of shapes available to geom\_point\_plus*

---

### Description

Call this object to generate a ggplot showing the names and features of each of the shapes available to `ggplot.plus::geom_point_plus`.

### Usage

```
geom_point_plus_shapes
```

### Format

An object of class `gg` (inherits from `ggplot`) of length 11.

### Value

A named list.



---

ggplot\_add.axis\_switcher

*Initiate the Process of Moving the Y Axis Title to the Top of a ggplot Graph*


---

### Description

This method defines how objects of class `axis_switcher`, created by the `y_axis_title_plus()` function, are added to a `ggplot2` plot using the `+` operator. The method begins the process of rebuilding the `ggplot` with the y axis title moved to its new location within the `gtable`.

### Usage

```
## S3 method for class 'axis_switcher'
ggplot_add(object, plot, object_name)
```

### Arguments

<code>object</code>	An object of class <code>axis_switcher</code> , created by <code>y_axis_title_plus()</code> , containing user-provided arguments (if any) or else pre-defined default values that determine where to move the y axis title to.
<code>plot</code>	A <code>ggplot</code> object for which the y axis title should be moved.
<code>object_name</code>	Internal name used by <code>ggplot2</code> when adding the layer. Defaults to "switcher" so that this class is added to the resulting object.

### Value

A `ggplot` with the class of "switcher" to trigger the `ggplot_build` method of the same name and also with the `y_axis_switch_location` attribute set by the call to `y_axis_title_plus()`.

---

ggplot\_add.geom\_plus    *Add A geom\_plus-generated Geometry to a ggplot*


---

### Description

This method defines how objects of class `geom_plus()`, added by the `geom_plus` function, are added to a `ggplot2` plot using the `+` operator. It processes default aesthetics, handles user overrides, and ensures compatibility with `ggplot2` layering.

### Usage

```
## S3 method for class 'geom_plus'
ggplot_add(object, plot, object_name)
```

### Arguments

<code>object</code>	An object of class <code>geom_plus</code> , created by <code>geom_plus()</code> , containing user-provided arguments (if any).
<code>plot</code>	A <code>ggplot</code> object to which the new geometry layer should be added.
<code>object_name</code>	Internal name used by <code>ggplot2</code> when adding the layer.

**Value**

A ggplot object with the new geometry layer added.

---

```
ggplot_add.gridlines_plus
```

*Add A gridlines\_plus-generated Geometry to a ggplot*

---

**Description**

This method defines how objects of class `gridlines_plus()`, added by the `gridlines_plus` function, are added to a `ggplot2` plot using the `+` operator. It considers both default values as well as user overrides for important gridlines features and ensures compatibility with `ggplot2` layering.

**Usage**

```
## S3 method for class 'gridlines_plus'
ggplot_add(object, plot, object_name)
```

**Arguments**

<code>object</code>	An object of class <code>gridlines_plus</code> , created by <code>gridlines_plus()</code> , containing user-provided arguments (if any) or else pre-defined default values.
<code>plot</code>	A <code>ggplot</code> object to which the new gridlines should be added.
<code>object_name</code>	Internal name used by <code>ggplot2</code> when adding the layer.

**Value**

A `ggplot` object with the new gridlines added.

---

```
ggplot_add.scale_color_cont_plus
```

*Add A scale\_color\_cont\_plus-generated Color Scale Bar Gradation to a ggplot*

---

**Description**

This method defines how objects of class `scale_color_continuous_plus`, added by the function of the same name, are added to a `ggplot2` plot using the `+` operator. It ensures that the new, "pretty" breaks, now successfully anchored at or near the range values for the data in question, are added to the plot's color bar.

**Usage**

```
## S3 method for class 'scale_color_cont_plus'
ggplot_add(object, plot, object_name)
```

**Arguments**

object	An object of class <code>scale_color_cont_plus</code> , created by <code>scale_color_continuous_plus()</code> , containing user-provided arguments (if any) or else pre-defined default values that find a set of "pretty" breaks that encompass the full range of values on the axis and that expand the limits of the axis slightly, if needed, to accomplish this.
plot	A ggplot object to which the new color bar should be added.
object_name	Internal name used by ggplot2 when adding the layer.

**Value**

A ggplot object with the color scale breaks and limits redefined.

---

```
ggplot_add.scale_fill_cont_plus
```

*Add A scale\_fill\_cont\_plus-generated fill Scale Bar Gradation to a ggplot*

---

**Description**

This method defines how objects of class `scale_fill_continuous_plus`, added by the function of the same name, are added to a ggplot2 plot using the `+` operator. It ensures that the new, "pretty" breaks, now successfully anchored at or near the range values for the data in question, are added to the plot's x axis.

**Usage**

```
## S3 method for class 'scale_fill_cont_plus'
ggplot_add(object, plot, object_name)
```

**Arguments**

object	An object of class <code>scale_fill_cont_plus</code> , created by <code>scale_fill_continuous_plus()</code> , containing user-provided arguments (if any) or else pre-defined default values that find a set of "pretty" breaks that encompass the full range of values on the axis and that expand the limits of the axis slightly, if needed, to accomplish this.
plot	A ggplot object to which the new fill color bar should be added.
object_name	Internal name used by ggplot2 when adding the layer.

**Value**

A ggplot object with the fill scale breaks and limits redefined.

---

```
ggplot_add.scale_x_cont_plus
```

*Add A scale\_x\_cont\_plus-generated X axis Gradation to a ggplot*

---

### Description

This method defines how objects of class `scale_x_continuous_plus`, added by the function of the same name, are added to a `ggplot2` plot using the `+` operator. It ensures that the new, "pretty" breaks, now successfully anchored at or near the range values for the data in question, are added to the plot's x axis.

### Usage

```
## S3 method for class 'scale_x_cont_plus'
ggplot_add(object, plot, object_name)
```

### Arguments

<code>object</code>	An object of class <code>scale_x_continuous_plus</code> , created by <code>scale_x_continuous_plus()</code> , containing user-provided arguments (if any) or else pre-defined default values that find a set of "pretty" breaks that encompass the full range of values on the axis and that expand the limits of the axis slightly, if needed, to accomplish this.
<code>plot</code>	A <code>ggplot</code> object to which the new x axis scale should be added.
<code>object_name</code>	Internal name used by <code>ggplot2</code> when adding the layer.

### Value

A `ggplot` object with the x axis breaks and limits redefined.

---

```
ggplot_add.scale_y_cont_plus
```

*Add A scale\_y\_cont\_plus-generated Y axis Gradation to a ggplot*

---

### Description

This method defines how objects of class `scale_y_continuous_plus`, added by the function of the same name, are added to a `ggplot2` plot using the `+` operator. It ensures that the new, "pretty" breaks, now successfully anchored at or near the range values for the data in question, are added to the plot's y axis.

### Usage

```
## S3 method for class 'scale_y_cont_plus'
ggplot_add(object, plot, object_name)
```

**Arguments**

object	An object of class <code>scale_y_continuous_plus</code> , created by <code>scale_y_continuous_plus()</code> , containing user-provided arguments (if any) or else pre-defined default values that find a set of "pretty" breaks that encompass the full range of values on the axis and that expand the limits of the axis slightly, if needed, to accomplish this.
plot	A ggplot object to which the new y axis scale should be added.
object_name	Internal name used by ggplot2 when adding the layer.

**Value**

A ggplot object with the y axis breaks and limits redefined.

---

`ggplot_add.theme_plus` *Add A theme\_plus-generated theme to a ggplot*

---

**Description**

This method defines how objects of class `theme_plus()`, added by the `theme_plus` function, are added to a ggplot2 plot using the `+` operator. It applies user-specified overrides to sensible default values and ensures compatibility with ggplot2 layering.

**Usage**

```
## S3 method for class 'theme_plus'
ggplot_add(object, plot, object_name)
```

**Arguments**

object	An object of class <code>theme_plus</code> , created by <code>theme_plus()</code> , containing user-provided arguments (if any) and otherwise default values for many theme attributes.
plot	A ggplot object to which the new theme will be applied
object_name	Internal name used by ggplot2 when adding the theme.

**Value**

A ggplot object with the new theme applied.

---

```
ggplot_build.geom_plus_warnings
```

*Build a ggplot With the Class "geom\_plus\_warnings".*

---

### Description

This method defines how objects of class `geom_plus_warnings`, created by the `ggplot_add.geom_plus()` function, are built into a `ggplot2` plot. The method is where various checks are performed to see if the user may be doing something "sub-optimal" design-wise that could be used to trigger an informative warning to steer better behaviors.

### Usage

```
## S3 method for class 'geom_plus_warnings'
ggplot_build(plot)
```

### Arguments

`plot`                      A `ggplot` object for which the checks should be performed.

### Value

A built `ggplot`.

---

```
ggplot_build.switcher    Build a ggplot With the Class "switcher".
```

---

### Description

This method defines how objects of class `switcher`, created by the `ggplot_add.axis_switcher()` function, are built into a `ggplot2` plot. The method continues the process of rebuilding the `ggplot` with the y axis title moved to its new location within the `gtable`.

### Usage

```
## S3 method for class 'switcher'
ggplot_build(plot)
```

### Arguments

`plot`                      A `ggplot` object for which the y axis title should be moved.

### Value

A `ggplot` with the class of "switched" to trigger the `ggplot_gtable` method of the same name and also with the `y_axis_switch_location` attribute set by the call to `y_axis_title_plus()`.

---

ggplot\_gtable.switched

*Finish a ggplot With the Class "switched".*


---

### Description

This method defines how objects of class `switched`, created by the `ggplot_build.switcher()` function, are finalized into a `ggplot2` plot. The method finishes the process of rebuilding the `ggplot` with the y axis title moved to its new location within the `gtable`.

### Usage

```
## S3 method for class 'switched'
ggplot_gtable(data)
```

### Arguments

<code>data</code>	A <code>ggplot</code> object with the class of <code>"switched"</code> for which the y axis title should be moved.
-------------------	--

### Value

A `ggplot` object compatible with `ggplot2`'s + command structure.

---

gridlines\_plus

*Generates Subtle and Choice Gridlines on a ggplot*


---

### Description

This function adds, by default, subtle, light gray major gridlines to a `ggplot` graph only in directions mapped to continuous (and not discrete) variables.

### Usage

```
gridlines_plus(color = "gray90", linewidth = 1.2, linetype = "solid")
```

### Arguments

<code>color</code>	The color used for the gridlines. Defaults to <code>"gray90"</code> . Must be a single character vector of length 1 corresponding to the name of a color.
<code>linewidth</code>	Line width for the gridlines. Defaults to 1.2. Must be a single numeric value.
<code>linetype</code>	Line type for the gridlines. Defaults to <code>"solid."</code> Must be a single character string value corresponding to an accepted <code>linetype</code> , such as <code>"dotted"</code> or <code>"dashed"</code> .

### Value

List with the class `"gridlines_plus"`, which will trigger the `gridlines_plus` method in `ggplot::ggplot_add`.

## Examples

```
ggplot2::ggplot(iris, ggplot2::aes(x=Sepal.Length, y=Petal.Length)) +
  geom_plus(geom = "point") +
  gridlines_plus()
```

---

palettes\_plus

*Makes the Viridis Family of Color Palettes the Default For ggplots*

---

## Description

This function coerces the default color palettes for the fill and color aesthetics of ggplots to be the viridis family of color palettes for the rest of the session by overriding defaults set inside of `options()`. This ensures the color palettes used will be accessible for those with diverse technological and ocular needs.

## Usage

```
palettes_plus(
  palette_discrete = "D",
  palette_continuous = "E",
  begin_discrete = 0.28,
  end_discrete = 0.72,
  begin_continuous = 0,
  end_continuous = 1
)
```

## Arguments

`palette_discrete`

The viridis-family color palette to use for discrete variables. Defaults to "D", which corresponds to the viridis color palette. Must be a length-1 character string from "A" to "H" corresponding to the same codes used by `scale_color_viridis_d()` and similar functions to refer to the eight color families available in the viridis package.

`palette_continuous`

The viridis-family color palette to use for continuous variables. Defaults to "E", which corresponds to the cividis color palette, which has fewer distinct hues, resulting in less false segmenting of the underlying data driven by hue transitions. Must be a length-1 character string from "A" to "H" corresponding to the same codes used by `scale_color_viridis_d()` and similar functions to refer to the eight color families available in the viridis package.

`begin_discrete` The color value of the "low" end of the color palette for a discrete scale. Defaults to 0.28, which is a medium-dark blue in the viridis palette. Must be a single numeric value between 0 and 1.

`end_discrete` The color value of the "high" end of the color palette for a discrete scale. Defaults to 0.72, which is a medium-light green in the viridis palette. Must be a single numeric value between 0 and 1.

`begin_continuous`

The color value of the "low" end of the color palette for a continuous scale. Defaults to 0, which is a dark blue. Must be a single numeric value between 0 and 1.



**end\_continuous** The color value of the "high" end of the color palette For a continuous scale. Defaults to 1, which is a light yellow. Must be a single numeric value between 0 and 1.

### Value

Does not return an object.

### Examples

```
palettes_plus()
ggplot2::ggplot(iris, ggplot2::aes(x=Sepal.Length, y=Petal.Length, fill=Species)) +
  geom_plus(geom = "point")
```

---

scale\_color\_continuous\_plus

*Find Pretty Breaks for a Continuous Color axis in ggplot While Ensuring End Labels*

---

### Description

This function attempts to find a set of breaks for a continuous variable mapped to the color aesthetic of a ggplot graph such that there aren't too many breaks, the breaks are "pretty" values where possible, and breaks exist at or near to the range values of the variable. It uses `cont_breaks_plus()` to do this—see there for more information.

### Usage

```
scale_color_continuous_plus(
  ...,
  n = 5,
  buffer_frac = 0.05,
  thin_labels = FALSE
)
```

### Arguments

...	Standard inputs normally given to <code>scale_color_continuous()</code> . Must not include breaks or limits or an error will be returned, as the function attempts to circumvent the need to specify prettier breaks or appropriate limits.
n	A length-1 numeric value for the "target" number of breaks to create. Defaults to 5. Passed to <code>cont_breaks_plus()</code> internally.
buffer_frac	A length-1 numeric value corresponding to how close the end breaks must be to the end of the data for new breaks to not be added. Defaults to 0.05 (5%). A length-1 numeric value for the "target" number of breaks to create. Defaults to 5. Passed to <code>cont_breaks_plus()</code> internally.
thin_labels	Should every other label (starting with the second) be replaced with an empty string? Defaults to FALSE. Change to TRUE to enable. Useful for when the number of breaks/labels is high enough that the axis feels "over-labeled" in a way that might contribute to excess cognitive load.

**Value**

Returns a list of class "scale\_color\_cont\_plus", which will trigger the `ggplot_add` method by the same name to trigger the axis breaks reconfiguration.

**Examples**

```
ggplot2::ggplot(iris, ggplot2::aes(x=Sepal.Length, y=Petal.Length)) +
  geom_point(ggplot2::aes(color = Petal.Width)) +
  scale_color_continuous_plus()
```

---

scale\_colour\_continuous\_plus

*Find Pretty Breaks for a Continuous Color axis in ggplot While Ensuring End Labels*

---

**Description**

This function is a alias for `scale_color_continuous_plus()`—see there for more information.

**Usage**

```
scale_colour_continuous_plus(
  ...,
  n = 5,
  buffer_frac = 0.05,
  thin_labels = FALSE
)
```

**Arguments**

...	Standard inputs normally given to <code>scale_color_continuous()</code> . Must not include breaks or limits or an error will be returned, as the function attempts to circumvent the need to specify prettier breaks or appropriate limits.
n	A length-1 numeric value for the "target" number of breaks to create. Defaults to 5. Passed to <code>cont_breaks_plus()</code> internally.
buffer_frac	A length-1 numeric value corresponding to how close the end breaks must be to the end of the data for new breaks to not be added. Defaults to 0.05 (5%). A length-1 numeric value for the "target" number of breaks to create. Defaults to 5. Passed to <code>cont_breaks_plus()</code> internally.
thin_labels	Should every other label (starting with the second) be replaced with an empty string? Defaults to FALSE. Change to TRUE to enable. Useful for when the number of breaks/labels is high enough that the axis feels "over-labeled" in a way that might contribute to excess cognitive load.

**Value**

Returns a list of class "scale\_color\_cont\_plus", which will trigger the `ggplot_add` method by the same name to trigger the axis breaks reconfiguration.

**Examples**

```
ggplot2::ggplot(iris, ggplot2::aes(x=Sepal.Length, y=Petal.Length)) +
  geom_plus(geom = "point", ggplot2::aes(color = Petal.Width)) +
  scale_colour_continuous_plus()
```

---

scale\_fill\_continuous\_plus

*Find Pretty Breaks for a Continuous Fill axis in ggplot While Ensuring End Labels*

---

**Description**

This function attempts to find a set of breaks for a continuous variable mapped to the fill aesthetic of a ggplot graph such that there aren't too many breaks, the breaks are "pretty" values where possible, and breaks exist at or near to the range values of the variable. It uses `cont_breaks_plus()` to do this—see there for more information.

**Usage**

```
scale_fill_continuous_plus(..., n = 5, buffer_frac = 0.05, thin_labels = FALSE)
```

**Arguments**

<code>...</code>	Standard inputs normally given to <code>scale_fill_continuous()</code> . Must not include breaks or limits or an error will be returned, as the function attempts to circumvent the need to specify prettier breaks or appropriate limits.
<code>n</code>	A length-1 numeric value for the "target" number of breaks to create. Defaults to 5. Passed to <code>cont_breaks_plus()</code> internally.
<code>buffer_frac</code>	A length-1 numeric value corresponding to how close the end breaks must be to the end of the data for new breaks to not be added. Defaults to 0.05 (5%). A length-1 numeric value for the "target" number of breaks to create. Defaults to 5. Passed to <code>cont_breaks_plus()</code> internally.
<code>thin_labels</code>	Should every other label (starting with the second) be replaced with an empty string? Defaults to FALSE. Change to TRUE to enable. Useful for when the number of breaks/labels is high enough that the axis feels "over-labeled" in a way that might contribute to excess cognitive load.

**Value**

Returns a list of class `"scale_fill_cont_plus"`, which will trigger the `ggplot_add` method by the same name to trigger the axis breaks reconfiguration.

**Examples**

```
ggplot2::ggplot(iris, ggplot2::aes(x=Sepal.Length, y=Petal.Length)) +
  geom_plus(geom = "point", ggplot2::aes(fill = Petal.Width)) +
  scale_fill_continuous_plus()
```

---

scale\_x\_continuous\_plus

*Find Pretty Breaks for a Continuous X axis in ggplot While Ensuring End Labels*


---

## Description

This function attempts to find a set of breaks for a continuous variable mapped to the x axis of a ggplot graph such that there aren't too many breaks, the breaks are "pretty" values where possible, and breaks exist at or near to the range values of the variable. It uses `cont_breaks_plus()` to do this—see there for more information.

## Usage

```
scale_x_continuous_plus(..., n = 5, buffer_frac = 0.05, thin_labels = FALSE)
```

## Arguments

<code>...</code>	Standard inputs normally given to <code>scale_x_continuous()</code> . Must not include breaks or limits or an error will be returned, as the function attempts to circumvent the need to specify prettier breaks or appropriate limits.
<code>n</code>	A length-1 numeric value for the "target" number of breaks to create. Defaults to 5. Passed to <code>cont_breaks_plus()</code> internally.
<code>buffer_frac</code>	A length-1 numeric value corresponding to how close the end breaks must be to the end of the data for new breaks to not be added. Defaults to 0.05 (5%). A length-1 numeric value for the "target" number of breaks to create. Defaults to 5. Passed to <code>cont_breaks_plus()</code> internally.
<code>thin_labels</code>	Should every other label (starting with the second) be replaced with an empty string? Defaults to FALSE. Change to TRUE to enable. Useful for when the number of breaks/labels is high enough that the axis feels "over-labeled" in a way that might contribute to excess cognitive load.

## Value

Returns a list of class "scale\_x\_cont\_plus", which will trigger the `ggplot_add` method by the same name to trigger the axis breaks reconfiguration.

## Examples

```
ggplot2::ggplot(iris, ggplot2::aes(x=Sepal.Length, y=Petal.Length)) +
  geom_plus(geom = "point") +
  scale_x_continuous_plus()
```

---

`scale_y_continuous_plus`*Find Pretty Breaks for a Continuous Y axis in ggplot While Ensuring End Labels*

---

## Description

This function attempts to find a set of breaks for a continuous variable mapped to the y axis of a ggplot graph such that there aren't too many breaks, the breaks are "pretty" values where possible, and breaks exist at or near to the range values of the variable. It uses `cont_breaks_plus()` to do this—see there for more information.

## Usage

```
scale_y_continuous_plus(..., n = 5, buffer_frac = 0.05, thin_labels = FALSE)
```

## Arguments

<code>...</code>	Standard inputs normally given to <code>scale_y_continuous()</code> . Must not include breaks or limits or an error will be returned, as the function attempts to circumvent the need to specify prettier breaks or appropriate limits.
<code>n</code>	A length-1 numeric value for the "target" number of breaks to create. Defaults to 5. Passed to <code>cont_breaks_plus()</code> internally.
<code>buffer_frac</code>	A length-1 numeric value corresponding to how close the end breaks must be to the end of the data for new breaks to not be added. Defaults to 0.05 (5%). A length-1 numeric value for the "target" number of breaks to create. Defaults to 5. Passed to <code>cont_breaks_plus()</code> internally.
<code>thin_labels</code>	Should every other label (starting with the second) be replaced with an empty string? Defaults to FALSE. Change to TRUE to enable. Useful for when the number of breaks/labels is high enough that the axis feels "over-labeled" in a way that might contribute to excess cognitive load.

## Value

Returns a list of class `"scale_y_cont_plus"`, which will trigger the `ggplot_add` method by the same name to trigger the axis breaks reconfiguration.

## Examples

```
ggplot2::ggplot(iris, ggplot2::aes(x=Sepal.Length, y=Petal.Length)) +  
  geom_plus(geom = "point") +  
  scale_y_continuous_plus()
```

---

shapes.list	<i>A new palette of shapes to use in ggplot2 scatterplots.</i>
-------------	--

---

### Description

This named list contains elements with x and y coordinates that, when corrected, will draw new shapes to be used as points in ggplot2 scatterplots. The piece attribute of each element dictates whether a region of the resulting shape will be solid or a "hole" in the final shape.

### Usage

```
shapes.list
```

### Format

An object of class list of length 9.

### Value

A named list.

---

switch_axis_label	<i>Place a Y Axis Title on a ggplot in a Safe Place Above the Y Axis Line.</i>
-------------------	--

---

### Description

This function relocates the y axis title of a ggplot graph to the top of the plot, above the y axis line and left-justified to the left edge of the y axis labels, sort of like a plot subtitle. It also orients the text horizontally for space-efficiency and easy reading. This is otherwise difficult to do using ggplot2's default styling tools. This is the main function used by y\_axis\_title\_plus() to ultimately accomplish its purpose. This function is used internally by the ggplot\_gtable.switched() method and is not intended for separate use.

### Usage

```
switch_axis_label(p, location = "top")
```

### Arguments

p	A ggplot object built using ggplot_build whose y axis title will be moved.
location	A length-1 character string matching either "top" or "bottom" for the placement of the new y axis title. Defaults to "top". Potentially overridden by whatever is specified to y_axis_title_plus()'s parameter of the same name when it's called.

### Value

A ggplot object compatible with ggplot2's + command structure.

---

 theme\_plus

*Add a New Base Theme to ggplots With Elevated Defaults*


---

### Description

Wrapper function for ggplot2's theme() function that still allows users to specify custom values for theme attributes but has default values for many attributes that are more likely to result in a graph that meets best practices for design aesthetics, usability, and accessibility.

### Usage

```
theme_plus(..., legend_pos = "top")
```

### Arguments

...	Other arguments to be passed along to the theme() (optional).
legend_pos	Where should the legend(s) be? Defaults to "top", which will make the legend a horizontal stripe at the top of the graph. Any other value will move the legend to a vertical stripe to the right of the plot (its usual position in ggplot2).

### Value

List with the class "theme\_plus", which will trigger the theme\_plus method in ggplot\_add.

### Examples

```
ggplot2::ggplot(iris, ggplot2::aes(x=Sepal.Length, y=Petal.Length)) +  
  geom_plus(geom = "point") + theme_plus()
```

---

 translate\_element

*Convert Between a Couple of Different Ways of Referencing the Same Aesthetic*


---

### Description

This is an internal convenience function that allows translation of the names of aesthetics like "colour" into ones like "col" used by grid's functions.

### Usage

```
translate_element(el)
```

### Arguments

el	A list or list-like object containing the names of elements to be translated.
----	---

### Value

A list of translated elements.

---

yaxis_title_plus	<i>Relocate a Y Axis Title to Above the Y Axis on a ggplot and Turn it Horizontal.</i>
------------------	--

---

### Description

This function relocates the y axis title of a ggplot graph to the top of the plot, above the y axis line and left-justified to the left edge of the y axis labels, sort of like a plot subtitle. It also orients the text horizontally for space-efficiency and easy reading. This is otherwise difficult to do using ggplot2's default styling tools.

### Usage

```
yaxis_title_plus(location = "top")
```

### Arguments

location	A length-1 character string matching either "top" or "bottom" for the placement of the new y axis title. Defaults to "top". "bottom" should generally only be used when the x axis labels (which would occupy the same row as the new y axis title) have been moved to the top of the graph.
----------	--

### Value

Returns a list of class "axis\_switcher", which will trigger the ggplot\_add method by the same name.

### Examples

```
ggplot2::ggplot(iris, ggplot2::aes(x=Sepal.Length, y=Petal.Length)) +  
  geom_plus(geom = "point") +  
  yaxis_title_plus()
```



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