Package 'ggsced'

January 21, 2026

Type Package

Title Utilities and Helpers for Single Case Experimental Design (SCED)
using 'ggplot2'

Version 0.1.6

Description Provides specialized visualization tools for Single-Case Experimental Design (SCED)
research using 'ggplot2'. SCED studies are a crucial methodology in behavioral and
educational research where individual participants serve as their own controls through
carefully designed experimental phases. This package extends 'ggplot2' to create
publication-ready graphics with professional phase change lines, support for multiple
baseline designs, and styling functions that follow SCED visualization conventions.
Key functions include adding phase change demarcation lines to existing plots and
formatting axes with broken axis appearance commonly used in single-case research.

License GPL (>= 2)

Encoding UTF-8

LazyData true

Depends ggplot2, ggh4x, R (>= 3.5.0)

Imports grid, gtable, assert

Suggests knitr, rmarkdown, testthat (>= 3.0.0), usethis, tidyverse

RoxygenNote 7.2.3

Config/testthat/edition 3

VignetteBuilder knitr

NeedsCompilation no

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Contents

ggsced   *ggsced*

Description

Core exported function to facilitate the drawing of phase change lines atop a ggplot object. Primarily designed to be used *after* the plot is finalized, with the lines being the last element drawn at the highest z index (i.e., atop all elements).

Usage

```
ggsced(plt, legs, offs = NULL, print = TRUE, verbose = FALSE)
```

Arguments

plt	ggplot object as typically designed/printed in userspace
legs	list of 'legs' to be drawn
offs	mapping of lines that require minor offset
print	output result directly to graphical device (default = TRUE)
verbose	Optional ability to view process output (debugging primarily)

Value

Finalized figure with respective phase change lines embedded.

---

ggsced_condition_labels

generate_condition_labels

Description

Optional helper class to prepare condition labels (e.g., Baseline, Intervention) based on the grouping of an existing ggplot object

Usage

```
ggsced_condition_labels(plt, y = NULL)
```

Arguments

plt	ggplot object
y	ordinate of respective label (Default = last tick from plot object)

Value

a data frame that can be used with a geom_text layer

---

ggsced_extract_domain *ggsced_extract_domain*

Description

Internal helper to pull respective panel parameters and assert validity.

Usage

```
ggsced_extract_domain(panel_params)
```

Arguments

panel_params	respective parameters of panel grob

Value

numeric vector specifying size in min-max units

---

ggsced_facet_labels   *ggsced_facet_labels*

Description

Optional helper class to prepare facet labels (e.g., Participant names) based on the faceting of an existing ggplot object

Usage

```
ggsced_facet_labels(plt, y = 0, x = NULL)
```

Arguments

plt	ggplot object
y	ordinate of respective label (typically very low or very high)
x	position on the x-axis (Default = last tick from plot object)

Value

a data frame that can be used with a geom_text layer

---

ggsced_get_panels   *ggsced_get_panels*

Description

Honestly, a bit of a 'hackish' solution to extract grobs that are associated with data to be drawn. Probably fragile and specific to modern gg implementations, but probably the close we'll get. Subject to change.

Usage

```
ggsced_get_panels(ggplot_grobs)
```

Arguments

ggplot_grobs	list of grobs prepared by ggplotGrob

Value

filtered list of grobs restricted to faceted levels

```
ggsced_internal_x_axis
```
ggsced_internal_x_axis

Description

Internal helper class to draw a conventional x-axis per SCED publication suggestions.

Usage

```
ggsced_internal_x_axis(expansion = 0, lwd = 2, col = "black")
```

Arguments

expansion	Percentage of axis to pad (left/right) to break axis (Note: normalized parent units)
lwd	Width of axis line
col	Color of axis drawn (default = 'black')

Value

Rendering of customized x axis across facets

```
ggsced_internal_y_axis
```
ggsced_internal_y_axis

Description

Internal helper class to draw a conventional y-axis per SCED publication suggestions.

Usage

```
ggsced_internal_y_axis(expansion = 0, lwd = 2, col = "black")
```

Arguments

expansion	Percentage of axis to pad (top/bottom) to break axis (Note: normalized parent units)
lwd	Width of axis line
col	Color of axis drawn (default = 'black')

Value

Rendering of customized y axis across facets

---

ggsced_name_dogleg   *ggsced_name_dogleg*

Description

Grobs need to have unique names lest they get accidentally overwritten. This is a convenience naming function for the 'main' phase break within a facet level.

Usage

```
ggsced_name_dogleg(panel, index, n_leg)
```

Arguments

panel	name of the parent grob
index	index of the phase change in sequence
n_leg	leg in the phase change

Value

a name corresponding with unique phase-change grob element

---

ggsced_name_dogleg_lateral

ggsced_name_dogleg_lateral

Description

Grobs need to have unique names lest they get accidentally overwritten. This is a convenience naming function for the 'lateral' part of a phase break within a facet level.

Usage

```
ggsced_name_dogleg_lateral(panel, index, n_leg)
```

Arguments

panel	name of the parent grob
index	index of the phase change in sequence
n_leg	leg in the phase change

Value

a name corresponding with unique phase-change grob element

---

ggsced_output_console *ggsced_output_console*

Description

Optional output function to support debugging (mainly for testing)

Usage

```
ggsced_output_console(msg, output)
```

Arguments

msg	Message to be output to console
output	Boolean to discern whether or not to output message

---

ggsced_scale_units *ggsced_scale_units*

Description

Internal helper to discern exactly where a vertical would need to be placed within a specific grob (i.e., panel grob). Uses the domain and phase change location as a reference to convert to npc units for gtable and grid.

Usage

```
ggsced_scale_units(session_value, domain_size)
```

Arguments

session_value	Session associated with phase-change line
domain_size	Total size of domain per panel specification

Value

A proportional value given value in a panel domain

---

ggsced_style_x *ggsced_style_x*

Description

This is a convenience element designed to support a more complete interpretation of SCED-specific style conventions through ggplot. Specifically, an axis is drawn with a specific manner of expansion to support the broken axis (i.e., non-connected x/y) expected of SCED-specific publication guidelines.

Usage

```
ggsced_style_x(expansion = 0, lwd = 2, col = "black")
```

Arguments

expansion	Percentage of axis to pad (left/right) to break axis (Note: normalized parent units)
lwd	Width of axis line
col	Color of axis drawn (default = 'black')

Value

Annotation to simulate a disconnected y-axis via expansion

---

ggsced_style_y *ggsced_style_y*

Description

This is a convenience element designed to support a more complete interpretation of SCED-specific style conventions through ggplot. Specifically, an axis is drawn with a specific manner of expansion to support the broken axis (i.e., non-connected x/y) expected of SCED-specific publication guidelines.

Usage

```
ggsced_style_y(expansion = 0, lwd = 2, col = "black")
```

Arguments

expansion	Percentage of axis to pad (top/bottom) to break axis (Note: normalized parent units)
lwd	Width of axis line
col	Color of axis drawn (default = 'black')

Value

Annotation to simulate a disconnected y-axis via expansion

Gilroyetal2015 *Plotting data from Gilroy et al. (2015)*

Description

This is data either extracted or included (with permission) to assist with illustrating and replicating the functionality of the package. Specifically, this data is used to illustrate conventions regarding a multiple probe design and how that may be constructed in this package.

Usage

```
Gilroyetal2015
```

Format

A data frame with 40 rows and 6 variables:

Participant Participant name

Session Session number

Condition Condition name

Responding Responding rates

PhaseNum Phase number

LineOff Offset for phase line

Source

<doi:https://doi.org/10.1016/j.rasd.2015.04.004>

Gilroyetal2021 *Plotting data from Gilroy et al. (2021)*

Description

Treatment data from Gilroy et al. (2021)

Usage

```
Gilroyetal2021
```

Format

A data frame with 69 rows and 7 variables:

Participant Participant name

Session Session number

Condition Functional analysis condition

Responding Rates of responding

Reinforcers Reinforcer deliveries

PhaseNum Sequenced phase number

LineOff Offset of phase line

Source

<doi:https://doi.org/10.1002/jaba.826>

---

sced_phase_change_complex_lateral_grob

sced_phase_change_complex_lateral_grob

Description

This is a helper class to standardize drawing grobs

Usage

```
sced_phase_change_complex_lateral_grob(x0, x1, segment_name)
```

Arguments

x0   value corresponding to respective domain in npc units

x1   value corresponding to respective domain in npc units

segment_name   name associated with object

Value

graphical object

---

sced_phase_change_complex_lateral_post_grob

sced_phase_change_complex_lateral_post_grob

Description

This is a helper class to standardize drawing grobs

Usage

sced_phase_change_complex_lateral_post_grob(x, segment_name)

Arguments

x	value corresponding to respective domain in npc units
segment_name	name associated with object

Value

graphical object

---

sced_phase_change_complex_lateral_pre_grob

sced_phase_change_complex_lateral_pre_grob

Description

This is a helper class to standardize drawing grobs

Usage

sced_phase_change_complex_lateral_pre_grob(x, segment_name)

Arguments

x	value corresponding to respective domain in npc units
segment_name	name associated with object

Value

graphical object

---

sced_phase_change_main_panel_grob

sced_phase_change_main_panel_grob

Description

This is a helper class to standardize drawing grobs

Usage

```
sced_phase_change_main_panel_grob(x, segment_name)
```

Arguments

x	value corresponding to respective domain in npc units
segment_name	name associated with object

Value

graphical object

---

sced_phase_change_simple_lateral_grob

sced_phase_change_simple_lateral_grob

Description

This is a helper class to standardize drawing grobs

Usage

```
sced_phase_change_simple_lateral_grob(x0, x1, segment_name)
```

Arguments

x0	value corresponding to respective domain in npc units
x1	value corresponding to respective domain in npc units
segment_name	name associated with object

Value

graphical object

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