Package 'pathdiagram'

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Type Package

Title Basic Functions for Drawing Path Diagrams

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Description Implementation of simple functions to draw basic path diagrams just for visualization purposes.

URL http://www.gastonsanchez.com

Depends R (>= 3.0), shape

Suggests knitr

VignetteBuilder knitr

License GPL-3

Collate 'arrow.R' 'draw.R' 'latent.R' 'manifest.R' 'wall.R'

NeedsCompilation no

Repository CRAN

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R topics documented:

arrow *Plot arrow between variables*

Description

Use this function to draw connecting arrows between manifest and latent variables.

Usage

```
arrow(from, to, start = "east", end = "west",
  length = 0.1, angle = 10, code = 2, col = "#d2def1",
  lwd = 3, ...)
```

Arguments

from	An object of either class "manifest" or "latent". This object is the origin of the arrow.
to	An object of either class "manifest" or "latent". This object is the destination of the arrow.
start	Character string to specify the starting direction of the arrow. Options are "north", "south", "east", "west".
end	Character string to specify the ending direction of the arrow. Options are "north", "south", "east", "west".
length	length of the edges of the arrow head (in inches).
angle	angle from the shaft of the arrow to the edge of the arrow head.
code	integer code, determining kind of arrows to be drawn.
col	color of the arrow.
lwd	width of the arrow.
...	other arguments passed on to arrows.

Author(s)

Gaston Sanchez

See Also

manifest, latent, draw

Examples

```
## Not run:
 # latent variables
 attack = latent("ATTACK", x=0.35, y=0.7, rx=0.08, ry=0.06)
 defense = latent("DEFENSE", x=0.35, y=0.3, rx=0.08, ry=0.06)
 success = latent("SUCCESS", x=0.65, y=0.5, rx=0.08, ry=0.06)
```

```
 # open wall
 wall()
 # draw latent variables
 draw(attack)
 draw(defense)
 draw(success)
 # add arrows
 arrow(from=attack, to=success, start="east", end="west")
 arrow(from=defense, to=success, start="east", end="west")

## End(Not run)
```

---

draw *Draw manifest and latent variables*

Description

Use this function to draw either manifest or latent variables on a plot.

Usage

```
draw(obj)
```

Arguments

obj	An object of either class "manifest" or "latent"

Author(s)

Gaston Sanchez

See Also

manifest, latent

Examples

```
## Not run:
 # manifest variables
 ingredients = list(
   eggs = manifest("eggs", x=0.3, y=0.7, width=0.10, height=0.08),
   milk = manifest("milk", x=0.3, y=0.6, width=0.10, height=0.08),
   flour = manifest("flour", x=0.3, y=0.5, width=0.10, height=0.08),
   sugar = manifest("sugar", x=0.3, y=0.4, width=0.10, height=0.08),
   butter = manifest("butter", x=0.3, y=0.3, width=0.10, height=0.08)
 )

 # latent variables
 pancakes = latent("PANCAKES", x=0.6, y=0.6, rx=0.09, ry=0.07)
```

```
waffles = latent("WAFFLES", x=0.6, y=0.4, rx=0.09, ry=0.07)

# open wall
wall()

title("Toy Path Diagram", col.main="gray20")
# draw manifest variables
for (i in 1:length(ingredients)) {
   draw(ingredients[[i]])
}

# draw latent variables
draw(pancakes)
draw(waffles)
# draw arrows
for (i in 1:length(ingredients)) {
   arrow(from=ingredients[[i]], to=pancakes, start="east", end="west")
   arrow(from=ingredients[[i]], to=waffles, start="east", end="west")
}

## End(Not run)
```

`latent` *Set specifications of a latent variable*

Description

Use this function to specify the graphic characteristics of a latent variable. The specifications will be used by the function `draw` to plot latent variables (in a path diagram).

Usage

```
latent(label = "latent", x = 0.5, y = 0.5, rx = 0.05,
  ry = 0.05, border = "white", lwd = 2, fill = "#5f8bd7",
  col = "white", cex = 1, vfont = NULL, font = 2,
  family = "sans")
```

Arguments

`label`	A character string with the label to be displayed.
`x`	x-axis coordinate for center of ellipse.
`y`	y-axis coordinate for center of ellipse.
`rx`	long radius of ellipse.
`ry`	short radius of ellipse.
`border`	color of the border.
`lwd`	width of border line.
`fill`	color to fill the ellipse

col	color of the label.
cex	numeric character expansion of the label.
vfont	font family of the label.
font	An integer specifying which font to use for the label. See par
family	The name of a font family for drawing text. Standard values are "serif", "sans" and "mono".

Details

Latent variables are drawn as ellipses using the function plotellipse

Value

An object of class "latent", which is a list with the specified parameters to draw latent variables.

Author(s)

Gaston Sanchez

See Also

manifest, draw

Examples

```
## Not run:
 # latent variables
 attack = latent("ATTACK", x=0.35, y=0.7, rx=0.08, ry=0.06)
 defense = latent("DEFENSE", x=0.35, y=0.3, rx=0.08, ry=0.06)
 success = latent("SUCCESS", x=0.65, y=0.5, rx=0.08, ry=0.06)

 # opwn wall
 wall()
 title("Drawing three latent variables", col.main="gray20")

 # draw variables
 draw(attack)
 draw(defense)
 draw(success)

## End(Not run)
```

`manifest` *Set specifications of a manifest variable*

Description

Use this function to specify the graphic characteristics of a manifest variable. The specifications will be used by the function `draw` to plot manifest variables (in a path diagram).

Usage

```
manifest(label = "manifest", x = 0.5, y = 0.5,
  width = NULL, height = 0.1, border = "white",
  fill = "#9dbafa", lwd = 1, col = "gray20", cex = 1,
  vfont = NULL, font = 1, family = "sans")
```

Arguments

`label`	A character string with the label to be displayed.
`x`	x-axis coordinate for center of rectanlge.
`y`	y-axis coordinate for center of rectangle.
`width`	width of the rectangle.
`height`	height of the rectangle.
`border`	color of the border.
`fill`	color to fill the rectangle.
`lwd`	width of the border.
`col`	color of the label.
`cex`	numeric character expansion of the label.
`vfont`	font family of the label.
`font`	An integer specifying which font to use for the label. See `par`
`family`	The name of a font family for drawing text. Standard values are `"serif"`, `"sans"` and `"mono"`.

Details

Manifest variables are drawn as rectangles.

Value

An object of class `"manifest"`, which is a list with the specified parameters to draw manifest variables.

Author(s)

Gaston Sanchez

See Also

latent, draw

Examples

```
## Not run:
 # manifest variables
 eggs = manifest("eggs", x=0.3, y=0.7, width=NULL, height=0.08)
 milk = manifest("milk", x=0.4, y=0.6, width=NULL, height=0.08)
 flour = manifest("flour", x=0.5, y=0.5, width=NULL, height=0.08)
 sugar = manifest("sugar", x=0.6, y=0.4, width=NULL, height=0.08)
 butter = manifest("butter", x=0.7, y=0.3, width=NULL, height=0.08)

 # open wall
 wall()
 title("Five manifest variables", col.main="gray20")

 # draw manifest variables
 draw(eggs)
 draw(milk)
 draw(flour)
 draw(sugar)
 draw(butter)

## End(Not run)
```

---

wall *Open a new frame for a path diagram*

Description

Use this function to open a white canvas to start drawing a path diagram. By default, wall opens a new plot window from 0 to 1 in both axes.

Usage

```
wall(xlim = c(0, 1), ylim = c(0, 1), xpd = TRUE, ...)
```

Arguments

xlim	Numeric vector of length 2 giving the x coordinate range. Default xlim = c(0, 1).
ylim	Numeric vector of length 2 giving the y coordinate range. Default ylim = c(0, 1).
xpd	Logical value to indicate if all plotting is clipped to the figure region. The default is c(1, 1, 1, 1).
...	other graphical arguments passed on to plot.window.

Details

`wall` calls `plot.new()` and `plot.window()` to open a new plot frame.

Author(s)

Gaston Sanchez

See Also

`manifest`, `latent`, `draw`

Examples

```
## Not run:
 # latent variables
 attack = latent("ATTACK", x=0.35, y=0.7, rx=0.08, ry=0.06)
 defense = latent("DEFENSE", x=0.35, y=0.3, rx=0.08, ry=0.06)
 success = latent("SUCCESS", x=0.65, y=0.5, rx=0.08, ry=0.06)

 # open diagram
 wall()

 # draw latent variables
 draw(attack)
 draw(defense)
 draw(success)

 # add arrows
 arrow(from=attack, to=success, start="east", end="west")
 arrow(from=defense, to=success, start="east", end="west")

## End(Not run)
```

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