Package ‘LexisPlotR’

April 4, 2016

Type Package
Title Plot Lexis Diagrams for Demographic Purposes
Version 0.3
Date 2016-04-04
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Description Functions to plot Lexis Diagrams for Demographic purposes.
Depends R (>= 3.0.0), ggplot2 (>= 1.0.1)
Suggests knitr
VignetteBuilder knitr
LazyData true
License GPL-2
URL https://github.com/ottlnger/LexisPlotR
RoxygenNote 5.0.1
NeedsCompilation no
Repository CRAN
Date/Publication 2016-04-04 23:56:50

R topics documented:

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**how.old**  
*Determine numeric age*

**Description**  
Determines the numeric age in years from a date range.

**Usage**  
how.old(from, to)

**Arguments**  
from character, beginning of the date range in YYYY-MM-DD format.
to character, end of the date range in YYYY-MM-DD format.

**Details**  
Helper for LexisPlotR. The numeric age gets rounded to 5 digits.

**Value**  
Numeric age in years.

**Author(s)**  
Philipp Ottolinger

**Examples**  
library(LexisPlotR)
how.old(from = "1900-01-01", to = "1905-01-01")

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**lexis.age**  
*Emphasize a certain age in Lexis grid*

**Description**  
Add a coloured rectangle to an existing Lexis grid to highlight a certain age in that Lexis grid.

**Usage**  
lexis.age(lg, age, fill = "yellow", alpha = 0.5)
**Description**

Takes an existing Lexis grid and adds a coloured rectangle to highlight a certain cohort.

**Usage**

`lexis.coHORT(lg, cohort, fill = "green", alpha = 0.5)`

**Arguments**

- `lg`, an existing object originally created with `lexis.grid()`.
- `cohort`, numeric, set the cohort to highlight.
- `fill`, character, set colour to fill the rectangle. Default is "green".
- `alpha`, numeric, set alpha, the level of transparency for `fill`. Default is 0.5.

**Details**

Takes an existing Lexis grid and adds a coloured rectangle to the plot. The rectangle will highlight a certain cohort in the Lexis grid.
Author(s)

Philipp Ottolinger

Examples

```r
library(LexisPlotR)
lg <- lexis.grid(year.start = 1900, year.end = 1905, age.start = 0, age.end = 5)
lexis.cohort(lg = lg, cohort = 1901)
```

```r
lexis.grid

Plot a Lexis grid
```

Description

`lexis.grid()` plots the basic Lexis grid.

Usage

`lexis.grid(year.start, year.end, age.start, age.end)`

Arguments

- `year.start`: integer, set the year the Lexis Diagram starts with.
- `year.end`: integer, set the year the Lexis Diagram ends with.
- `age.start`: integer, set the age the Lexis Diagram starts with.
- `age.end`: integer, set the age the Lexis Diagram ends with.

Details

The function determines the aspect ratio of the x- and y-axis to enforce isosceles triangles. The aspect ratio will not be effected by defining `width` and `height` in `pdf()` or other graphic devices. Because the returned object is a `ggplot2` graph, the overall appearence of the graph can be edited by adding `themes()` to the plot.

Value

The functions returns a `ggplot2`-plot.

Author(s)

Philipp Ottolinger

Examples

```r
library(LexisPlotR)
lexis.grid(year.start = 1900, year.end = 1905, age.start = 0, age.end = 5)
```
Fill Lexis triangles by HMD data

Description

The function opens an existing Lexis grid and fill the triangles according to data from the Human Mortality Database.

Usage

`lexis.hmd( lg, hmd.data, column )`

Arguments

- `lg`: an existing object originally created with `lexis.grid()`.
- `hmd.data`: a data.frame created with `prepare.hmd()`.
- `column`: character, the name of the column of `hmd.data` the triangles shall be filled with.

Details

The function creates a subset of `hmd.data` that fits in the dimensions of the existing Lexis grid. The triangles will be filled according to the data in `column`.

Author(s)

Philipp Ottolinger

Examples

```r
library(LexisPlotR)
lg <- lexis.grid(year.start = 1980, year.end = 1985, age.start = 0, age.end = 5)
# Load sample data
path <- system.file("extdata", "Deaths_lexis_sample.txt", package = "LexisPlotR")
deaths.triangles <- prepare.hmd(path)
lexis.hmd(lg = lg, hmd.data = deaths.triangles, column = "Total")

### Plot data not explicitly present in HMD data
deads.triangles$RatioMale <- deaths.triangles$Male / deaths.triangles$Total
lexis.hmd(lg, deaths.triangles, "RatioMale")
```
lexis.lifeline  
Plot lifelines into a Lexis grid

Description

Add lifelines to an existing Lexis grid.

Usage

lexis.lifeline(lg, entry, exit = NA, lineends = F, colour = "red", alpha = 1, lwd = 0.5)

Arguments

lg, an existing object originally created with lexis.grid().
entry character, set the entry or birth date of an individual in format "YYYY-MM-DD".
exit character, set the exit or death date of an individual in format "YYYY-MM-DD". Default is NA (no exit or death observed).
lineends logical, if TRUE lineends will be marked. Default is FALSE.
colour character, set the colour of the lifelines. Default is "red".
alpha numeric, set the transparency of the lifelines. Default is 1 (no transparency).
lwd numeric, set the linewidth of the lifelines. Default is 0.5.

Details

Takes an existing Lexis grid and adds lifelines to the grid. Input can be a single dates or dates from a vector.

Value

A ggplot2 object.

Author(s)

Philipp Ottolinger

Examples

lg <- lexis.grid(year.start = 1900, year.end = 1905, age.start = 0, age.end = 5)
lexis.lifeline(lg = lg, entry = "1901-09-23")
lexis.lifeline(lg = lg, entry = "1901-09-23", exit = "1904-03-03")
Description

Takes an existing Lexis grid and adds a coloured rectangle to highlight a certain age.

Usage

```r
lexis.year(lg, year, fill = "blue", alpha = 0.5)
```

Arguments

- `lg` an existing object originally created with `lexis.grid()`.
- `year` numeric, set the year to highlight.
- `fill` character, set the colour of the rectangle. Default is "blue".
- `alpha` numeric, set the transparency of the rectangle. Default is 0.5.

Details

Takes an existing Lexis grid and adds a coloured rectangle to the plot. The rectangle will highlight a certain year in the grid.

Value

A ggplot2 object.

Author(s)

Philipp Ottoliner

Examples

```r
lg <- lexis.grid(year.start = 1900, year.end = 1905, age.start = 0, age.end = 5)
lexis.year(lg = lg, year = 1902)
```
lifelines_sample  
Data for 300 random lifelines

Description
This dataset contains 300 random entry dates and 150 exit dates for demonstration purposes.

Usage
lifelines_sample

Format
A data frame with 300 rows and 2 variables:
- entry  entry or birth dates.
- exit   exit or death dates, NA if not observed.

prepare.hmd
Prepare HMD data for lexis.hmd()

Description
prepare.hmd() prepares the raw 'Deaths by Lexis triangles' HMD data for further use by lexis.hmd.

Usage
prepare.hmd(file)

Arguments
file, the name of the 'Deaths by Lexis triangles' file downloaded from the Human Mortality Database.

Details
This function reads the raw data into R and transforms data to numeric and Date. Furthermore seven columns (upper, x1, x2, x3, y1, y2, y3) that contain the coordinates of the triangles will be added. The age group 110+ will be removed from the data.

Author(s)
Philipp Ottolinger
Examples

```r
library(LexisPlotR)
# Load sample data
path <- system.file("extdata", "Deaths.lexis_sample.txt", package = "LexisPlotR")
deaths.triangles <- prepare.hmd(path)
```

---

**what.date**

*Determine the date a certain age is reached*

**Description**

Determines the date a certain age is reached given an earlier date.

**Usage**

```r
what.date(date, age)
```

**Arguments**

- `date`: character, set the reference date in `YYYY-MM-DD` format.
- `age`: numeric, set an age to be reached.

**Details**

Helper for LexisPlotR.

**Value**

The date age is reached when counting from `date`.

**Author(s)**

Philipp Ottolinger

**Examples**

```r
library(LexisPlotR)
what.date(date = "1900-01-01", age = 3)
```
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