# Package 'BiplotGUI'

July 21, 2025

**Type** Package

**Title** Interactive Biplots in R

**Version** 0.0-12

**Date** 2024-11-07

**Description** Provides a GUI with which users can construct and interact with biplots.

**License** MIT + file LICENSE

**Maintainer** Niel le Roux <njlr@sun.ac.za>

**Depends** R (>= 2.15.2), deldir, rgl, tcltk, tcltk2, tkrplot

**Imports** colorspace, KernSmooth, MASS

**LazyData** true

**OS_type** windows

**SystemRequirements** windows

**URL** http://biplotgui.r-forge.r-project.org/

**RoxygenNote** 7.3.2

**NeedsCompilation** yes

**Author** Anthony la Grange [aut],
Niel le Roux [cre] (Some Fortran code is adapted by Niel le Roux from the original by PJ Rousseeuw, I Ruts and JW Tukey)

**Repository** CRAN

**Date/Publication** 2024-11-08 09:30:06 UTC

## Contents

## BiplotGUI-package *BiplotGUI: Interactive Biplots in R*

### Description

A GUI with which to construct and interact with biplots.

### Details

| | |
|---|---|
| Package: | BiplotGUI |
| Type: | Package |
| Version: | 0.0-7 |
| Date: | 2013-03-11 |
| License: | GPL-3 or later |
| LazyLoad: | yes |

The `Biplots()` function initialises the GUI.

At present, **BiplotGUI** is intended to be run under Windows. In Windows, it runs marginally better in SDI mode, rather than MDI mode.

### Author(s)

Anthony la Grange

Maintainer: Niel le Roux <njlr@sun.ac.za> Includes Fortran code adapted by NJ le Roux from the original by PJ Rousseeuw, I Ruts and JW Tukey.

### References

Gower JC, Hand DJ (1996). *Biplots*. Monographs on Statistics and Applied Probability. Chapman & Hall, London, UK.

## AntiqueFurniture *Antique furniture data set*

### Description

Microscopic measurements made on Old-Cape antique furniture. The furniture are made from three types of wood.

### Usage

```
data(AntiqueFurniture)
```

## Format

A data frame with 37 observations on the following 7 variables.

`Species` The tree species. A factor with levels `Obul`, `Oken`, `Opor`.

`VesD` Tangential vessel diameter in micrometres. A numeric vector.

`VesL` Vessel element length in micrometres. A numeric vector.

`FibL` Fibre length in micrometres. A numeric vector.

`RayH` Ray height in micrometres. A numeric vector.

`RayW` Ray width in micrometres. A numeric vector.

`NumVes` The number of vessels per millimetre squared. A numeric vector.

## Details

During the period 1652–1900, wood from both the indiginous *Ocotea bullata* ("Stinkwood") and the imported *Ocotea perosa* ("Imbuia") were used to make Old-Cape furniture in South Africa. The data set contains mean measurements made on such wood, together with a third species, *Ocotea kenyensis*. Twenty samples of *Ocotea bullata* (`Obul`), 10 samples of *Ocotea perosa* (`Opor`) and 7 samples of *Ocotea kenyensis* (`Oken`) were inspected microscopically, with six variables measured on each sample 50 times over. The data are the mean measurements over the 50 repetitions.

## Source

Swart, J.P.J. (1985). *Lauracea*. Unpublished Master's thesis, Stellenbosch University, Stellenbosch, South Africa.

## References

Burden, M., Gardner, S., Le Roux, N.J. and Swart, J.P.J. (2001). Ou-Kaapse meubels en stinkhoutidentifikasie: Moontlikhede met kanoniese veranderlike-analise en bistippings. *South African Journal of Cultural History*, **15**, 50–73.

Le Roux, N.J. and Gardner, S. (2005). Analysing your multivariate data as a pictorial: A case for applying biplot methodology? *International Statistical Review*, **73**(3), 365–387.

## Examples

```
## Not run: Biplots(Data = AntiqueFurniture[, -1],
        groups = AntiqueFurniture[, 1])
## End(Not run)
```

Biplots *Interactive Biplots in R*

## Description

Initialises a GUI with which to construct and interact with biplots.

## Usage

```
Biplots(Data, groups = rep(1, nrow(Data)),
PointLabels = rownames(Data),
AxisLabels = colnames(Data), excel = NULL,
ExcelGroupsCol = 0)
```

## Arguments

| | |
|---|---|
| `Data` | A matrix or data frame of numerical data. Its $n$ samples (observations) will be represented as points in the biplots; its $p$ variables will be represented as calibrated biplot axes. |
| `groups` | A vector or factor of length n specifying the group membership of the samples. By default, all samples are taken to be from a single group. The group labels are taken from this argument, deprecated to 14 characters each. |
| `PointLabels` | A vector of length $n$ specifying the point labels. By default, the point labels are taken to be the row names of `Data`. |
| `AxisLabels` | A vector of length $p$ specifying the axis labels. By default, the axis labels are taken to be the column names of `Data`, deprecated to 14 characters each. |
| `excel` | Deprecated as from version 0.0-4.1. |
| `ExcelGroupsCol` | Deprecated as from version 0.0-4.1. |

## Details

`Biplots()` is the sole function of the **BiplotGUI** package. The function initialises the GUI for a particular data set. All further options are available from within the GUI. The GUI features themselves are documented in a separate manual available from the Help menu of the GUI. The manual is also included as a vignette to the package.

Due to the removal of the **xlsReadWrite** package from CRAN, the direct import of data from Excel 1997-2003 files has been deprecated as from **BiplotGUI** 0.0-4.1. As an alternative mechanism, consider the **RODBC** package.

At present, **BiplotGUI** is intended to be run under Windows. In Windows, it runs marginally better in SDI mode, rather than MDI mode.

## Author(s)

Author: Anthony la Grange.

Maintainer: Niel le Roux <njlr@sun.ac.za>, http://biplotgui.r-forge.r-project.org/

## References

Gower JC, Hand DJ (1996). *Biplots*. Monographs on Statistics and Applied Probability. Chapman & Hall, London, UK.

## Examples

```
data(Countries)

## Not run: Biplots(Data = Countries)

data(AntiqueFurniture)

## Not run: Biplots(Data = AntiqueFurniture[, -1],
        groups = AntiqueFurniture[, 1])
## End(Not run)

data(FighterAircraft)

## Not run: Biplots(Data = FighterAircraft)
```

---

`Countries` *Countries data set*

---

## Description

Eight variables measured on the countries with the 15 largest economies by purchasing price parity (PPP) gross domesitic product (GDP) in 2007.

## Usage

```
data(Countries)
```

## Format

A data frame with 15 observations on the following 8 variables.

`GDP` Purchasing price parity (PPP) gross domestic product (GDP) per capita in 2007 US dollars. A numeric vector.

`HIV.Aids` HIV/Aids prevalence as a percentage of the population. A numeric vector.

`Life.exp.` Life expectancy in years. A numeric vector.

`Mil.` Military spending as a percentage of GDP. A numeric vector.

`Oil.cons.` Oil consumption in barrels per annum per capita. A numeric vector.

`Pop.` Population in millions. A numeric vector.

`Tel.` Number of fixed line telephones per 1000 people. A numeric vector.

`Unempl.` Percentage unemployed. A numeric vector.

## Details

The data have been derived largely from the 2007 CIA World Factbook, and are intended for illustrative purposes only.

## Source

Agency C (2007). *The World Factbook: 2007, CIA's 2006*, Potomac Books, Washington, DC, USA.

## Examples

```
## Not run: Biplots(data=Countries)
```

---

`FighterAircraft` *Fighter aircraft data set*

---

## Description

Four variables measured on 21 types of US fighter aircraft.

## Usage

```
data(FighterAircraft)
```

## Format

A data frame with 21 observations on the following 4 variables.

`SPR` Specific power, proportional to power per unit weight. A numeric vector.

`RGF` Flight range factor. A numeric vector.

`PLF` Payload as a fraction of gross weight. A numeric vector.

`SLF` Sustained load factor. A numeric vector.

## Details

Measurements of four variables on 21 of 22 types of US fighter aircraft extracted by Cook and Weisberg (1982) from a report by Stanley and Miller (1979).

## Source

Stanley W, Miller M (1979). Measuring technological change in jet fighter aircraft. *Technical Report R-2249-AF*, RAND Corporation, Santa Monica, CA, USA.

## References

Cook, R. D. and Weisberg, S. (1982). *Residuals and influence in regression*. Monographs on Statistics and Applied Probability. Chapman & Hall, London, UK.

Gower, J. C. and Hand, D.J. (1996). *Biplots*. Monographs on Statistics and Applied Probability. Chapman & Hall, London, UK.

## Examples

```
## Not run: data(FighterAircraft)
```

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